GLOBAL UNIVERSITY
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Higher Education in the World Report 8
Special Issue

New Visions for Higher Education towards 2030

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Higher Education in the World 8 - Special issue

New Visions for Higher
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List of Abbreviations

CLO	Chief Learning Officer
COIL	Collaborative Online International Learning
DESD	Decade of Education for Sustainable Development
EHEA	European Higher Education Area
ERA	European Research Area
ESD	Education for Sustainable Development
EUA	European University Association
FAIR	Findable, Accessible, Interoperble, Reusable
GUNi	Global University Network for innovation
HBCUs	Historically Black Colleges and Universities
HEIs	Higher Education Institutions
IAU	International Association of Universities
ILO	International Labour Organization
MCU	Magna Charta Universitatum
MDGs	Millennium Development Goals
OECD	Organisation for Economic Co-operation and Development
PKM	Personal Knowledge Mastery
RDF	Researcher Development Framework
RRI	Responsible Research and Innovation
SDGs	Sustainable Development Goals
SDLC	Software Development Life Cycle
SDSN	Sustainable Development Solutions Network
STEM	Science, Technology, Engineering and Mathematics
SwafS	Science with and for Society
THE	Times Higher Education
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNCSD	United Nations Conference on Sustainable Development
WCED	World Commission on Environment and Development
WEF	World Education Forum
WHEC	World Higher Education Conference

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Arjen E. J. Wals is a Professor of Transformative Learning for Socio-Ecological Sustainability at Wageningen University, where he also holds the UNESCO Chair of Social Learning and Sustainable Development. Furthermore, he is a Guest Professor at the Norwegian University for the Life Sciences and the Western Norway University of Applied Sciences and holds an Honorary Doctorate from Gothenburg University in Sweden. His work focuses on enabling, supporting and assessing learning ecologies that foster sustainable living by inviting more relational, ethical and critical ways of knowing and being. He writes the regular blog Transformative Learning highlighting developments in the emerging field of sustainability education.

Vidya Yeravdekar is the Principal Director of Symbiosis Society, which encompasses the Symbiosis schools, College of Arts & Commerce and institutions under the Symbiosis International University. She is also the Pro-Chancellor of Symbiosis International University, a multi-disciplinary, multinational, multi-cultural International University that has 45,000 students from all states and international students from 85 countries across the world. Dr Vidya holds a Post-Graduate Degree in Medicine, a Degree in Law and a PhD in 'Internationalisation of Higher Education in India'. Having presented papers at various National & International Conferences, she has numerous research publications to her credit and has also authored several books. Dr Vidya has served as a member of many national & International organisations such as World Bank, OBREAL Global, UGC under Ministry of Education, AIU, IBEF under Ministry of Commerce, ICCR, FICCI, SEPC, PIC etc. Having accomplished all such feats, Dr Vidya is now committed to shaping Indian higher education globally through her extensive work in the field of internationalisation of higher education.

Christopher J. Ziguras is a Professor and Associate Dean of Global and Language Studies at RMIT, where his research and teaching draws on his background in political science and sociology to explore contemporary issues in global political economy and global governance. His research focuses on the globalisation of education, particularly how regulatory agencies, markets, education providers and other actors shape the cross-border provision of higher education. This interest is carried across his higher education leadership, diverse management roles at RMIT, prominent

research on cross-border higher education, teaching in international development and public policy, and his active public engagement. He was President of the International Education Association of Australia 2015-18 and works closely with the Association. He undertakes research, teaching and doctoral supervision through his membership of the RMIT Social and Global Studies Centre, the Australian APEC Study Centre, the Centre for Higher Education Internationalisation at Università Cattolica del Sacro Cuore, Milan, and the Melbourne Centre for the Study of Higher Education.

Special mention must be made to experts and GUNi members that contributed to the definition of the GUNi Vision by participating in the online focus group on the new GUNi Higher Education in the World Report "New Visions for Higher Education Institutions towards 2030". List of participants:

- **Budd Hall,** Co-Chair UNESCO Chair in Community-Based Research and Social Responsibility in Higher Education, University of Victoria (Canada).
- **Axel Didriksson,** Universidad Nacional Autónoma de México, GUNI-LAC (Mexico)
- **Valerii Monakhov,** Head of UNESCO Chair "Education in a multicultural society", The Herzen State Pedagogical University of Russia (Russia)
- **Ramon Torrent,** President, OBREAL Global (Spain)
- **Sara López,** Head of International Relations, Universitat Pompeu Fabra (Spain)
- **Vidya Yeravdekar,** Principal Director of Symbiosis Society, Symbiosis International University (India)
- **Pastora Martínez,** Vicerector of Globalization and Cooperation, Universitat Oberta de Catalunya (Spain)
- **Olusola Oyewole,** Secretary-General · Association of African Universities (Ghana)
- **Deb Adair,** Executive Director, INQAAHE (The Netherlands)
- **Oscar Felipe Garcia,** Famimundo Institute (Mexico)
- **Santiago García Granda,** President of Crue's Commission for Agenda 2030, CRUE (Spain)
- **Jairo Cifuentes,** Rector, Universidad Javeriana de Bogotá (Colombia)
- **Roger Chao,** Assistant Director/Head of Education, Youth and Sports, ASEAN Secretariat (Indonesia)
- **Ana Lúcia Gazzola,** former Executive Director, UNESCO-IESALC; former Rector, Federal University of Minas Gerais (Brasil)

GUNi Presentation

Twenty-three years after GUNi was created, the mission and goals of this global network remain as relevant as ever. Our mission, which is already shared by 268 institutions in 85 countries, is to foster the role of higher education in society by supporting the renewal of its visions and policies around the world in terms of public service, relevance, social responsibility and innovation.

Likewise, our objectives call on us to:

- Generate and share knowledge on higher education policy and management around the world.
- Promote the knowledge society by strengthening higher education systems and institutions for the sake of progress, culture and well-being.
- Support institutions and governments around the world for the advancement of higher education, scientific research and innovation.
- Promote the development of the 2030 Agenda and the Sustainable Development Goals.
- Encourage academic and scientific diplomacy to promote multilateralism and international cooperation.

Despite challenges and a lack of structural funding, GUNi continues to be a global benchmark in the field of higher education and university management. It gives us great pleasure to connect initiatives and projects with institutions around the world and to serve as benchmarks in the deployment of the 2030 Agenda and the Sustainable Development Goals. At the same time, we are pioneers in the introduction of new topics in the field of higher education and we share all our knowledge in accordance with the principles of responsible research and open science. Likewise, we are honoured to have been chosen by UNESCO as a strategic partner for the organisation of the UNESCO World Higher Education Conference (WHEC2022) at our Barcelona offices. We wanted to share this mandate, which comes with great responsibility, with our partners around the world. Within this framework, we have promoted World Higher Education Week (Barcelona, 16-22 May 2022) for the first time, an event involving around 30 global seminars, events and meetings relating to higher education policy and management.

The World Report you have in your hands will serve as the starting point to launch a strategic new long-term activity. We hope that the report will act as a catalyst for in-depth analysis and discussion that will be enhanced over the next few years through a web portal. This project involves a significant number of GUNi member universities that together will pave the way towards the transformation of HEIs. It is an exciting project that seeks to pool efforts and allow our partners to grow into relevant, inclusive, sustainable, innovative and socially responsible institutions.

I would like to end by thanking all the institutions that have placed their trust in us and have made the report a reality: the Catalan Government, the Spanish Ministry of Universities, the Catalan Agency for Development Cooperation and the "la Caixa" Foundation. We extend our gratitude to UNESCO for its continuous support. Likewise, we would like to highlight and express our appreciation for the work of the experts around the world who have collaborated with us, as well as the GUNi technical team, a small but highly professional and dedicated group of people. Thanks to all of you, the report will help us set in motion an exciting strategic project we want to share with you.

Josep M. Vilalta
Director
Global University Network for Innovation

UNESCO's Introduction

The timing of this special issue in the GUNi *World Report Series* could not be more opportune or relevant. As the international communities of youth, teachers, researchers, employers and policymakers gather together in Barcelona for a global conversation at the 3rd UNESCO World Higher Education Conference, the dawn of a new vision for higher learning ecosystems has arrived. Every aspect of what we all hold true for universities around the world is changing, being rethought or reinvented. From issues of governance and financing of institutions, quality enhancement in provision and programmes, to equitable and inclusive access, harnessing digital technologies for student engagement, and internationalisation and cooperation in teaching, research and learning, modern seats of higher learning are at an existential crossroads. Whilst the directions taken will and must differ between systems and institutions, there is universal acknowledgment that higher education is being turned on its traditional axes.

Actions to address this reality cannot be undertaken lightly, in isolation or in a uniform fashion. Nevertheless, if the barometer of higher education relevance for local and national communities is to be retained, a reaction to changing norms is now paramount. Learner profiles are changing – notions of "traditional" students no longer apply. Everyone, young and old, is now a lifelong learner not necessarily by choice but by virtue of necessity in a constantly changing workplace where learning new skills and reskilling is almost a daily priority. Different types of learners need different types of courses and programmes; different types of courses and programmes need innovative new curricula; new curricula need flexible learning access modalities enabled by effective use of digital technologies. International cooperation in learning, teaching and research requires sustainable models to link students and researchers in the pursuit of discovery and scientific solutions that the planet needs for the future – a future engraved in the 17 UN Sustainable Development Goals (SDGs).

The UNESCO 3rd World Conference Roadmap will provide signposts at the different crossroads for higher education communities to share experience, knowledge and innovative collaborative approaches to realising each of the SDGs and the 2030 Agenda. Re-designing higher education institutions, their research and their learning programmes, and preparing skilled graduates must be the cornerstone for designing a sustainable future for us all. This GUNi Special Issue is a vital contribution to the bank of knowledge that will guide universities through a defining moment in their futures.

P. J. Wells
Chief, Higher Education
UNESCO

Catalan Association of Public Universities' (ACUP) introduction

We are experiencing a period of accelerated transformations; we are walking towards a digital-human future and we are witnessing changes in the world of work, in our perception of the individual, citizenship and society, with movements that challenge our democracies and reveal a social crisis, changes in the methods of creation and dissemination of knowledge, in international relations and, undoubtedly, in our planet's ecological and systemic imbalance. In the face of these great challenges, education, science and innovation are becoming, more than ever, fundamental building blocks for progressive, sustainable and committed societies on a local and global scale.

In this context, we must rethink the university to make it a lever for social transformation. But we must not do this alone, we must move forward in a network, emphasising local, regional and international inter-university cooperation, in addition to cooperation with public institutions and social agents. The Covid-19 crisis has shown us that cooperation is essential to provide adequate responses to the period of transformation we are currently experiencing on a local and global scale. In this regard, the Catalan Association of Public Universities (ACUP) wears its cooperation as a badge of honour and regards this as its key mission. Created in 2002, ACUP groups the universities of Barcelona (UB), Autònoma de Barcelona (UAB), Politècnica de Catalunya (UPC), Pompeu Fabra (UPF), Girona (UdG), Lleida (UdL), Rovira i Virgili (URV) and Oberta de Catalunya (UOC). Through ACUP, the eight Catalan public universities forge close collaboration to promote relevance, efficiency and quality, both on an individual scale and within the Catalan higher education system.

Against this backdrop, our Association has a strong commitment on an international scale through the Global University Network for Innovation (GUNi), which we promote together with UNESCO. The GUNi network upholds the values and principles of UNESCO. The GUNi network upholds the values and principles of UNESCO, while driving the 2030 Agenda and the Sustainable Development Goals for the improvement and transformation of higher education institutions. While driving the 2030 Agenda and the Sustainable Development Goals for the improvement and transformation of higher education institutions.

Higher Education in the World Reports (HEIW) are GUNi's flagship project and have become a benchmark publication in the field of higher education. GUNi reports seek to thoroughly analyse emerging issues in the university setting, to generate debates and the deployment of policies and programmes for the progress of HEIs all over the world. This Report, officially presented in the framework of the UNESCO World Conference on Higher Education (WHEC2022, Barcelona), aims to carefully reflect on the future challenges of university institutions and consider how we can rethink HEIs in today's changing context. For this reason, the Report is designed to serve as a living document that will be enhanced over the next four years through an open portal, with new articles, interviews, videos and podcasts. I hope that this new GUNi Report will be a useful tool for reflection and for strengthening systems and HEIs around the world.

Jaume Puy
President
Catalan Association of Public Universities (ACUP)
Global University Network for Innovation (GUNi)

About the Report

1. Introduction

Since the creation of the Global University Network for Innovation (GUNi) in 1999 after the 1st UNESCO World Higher Education Conference, the network has been working to meet its core mission of generating knowledge, strengthening higher education systems around the world and supporting innovation in higher education institutions (HEIs). Through its series of Higher Education in the World Reports, GUNi fosters global and regional analyses of higher education institutions and systems. In particular, this special issue once again takes up GUNi's mission, offering an overview of the present state of HEIs and their prospects looking towards 2030 and beyond.

The introduction aims to describe how the special issue has been conceived, setting out its aims, structure and methodology, as well as the importance of the selected topics and the approaches and principles that frame them.

Entitled "New Visions for Higher Education Institutions towards 2030", the report analyses the state of higher education in the world and seeks to respond to the need for HEIs to transform themselves at a key time of major global changes. Three core questions guide the report's approach:

- If we were to create an HEI from scratch today, what would it be like?
- If we were to reform HEIs, what changes should we put in place and most importantly how would we implement them?
- What should HEIs look like in the near future?

In seeking to answer these questions, the special issue builds on GUNi's accumulated experience, both in terms of the world reports that we have published and the varied subjects and lines of work that we have pursued. The aim is to take an in-depth look at the current context, bringing together the top debates in the area of higher education, while also adhering to GUNi's values and goals, in order to outline the way forward for HEIs. In other words, the special issue undertakes a detailed analysis of the present state of affairs in order to keep HEIs advancing successfully towards 2030 and beyond.

As a distinctive feature, the report focuses primarily on institutions rather than on systems or policies. In this vein, the covered topics are aimed directly at HEIs, seeking to achieve the maximum applicability of the findings and trusting that they will be of interest both to policymakers and to other stakeholders. This is because we need consequential analyses and bold ideas to make the best decisions, ones that will help us to build on the lessons learnt and create the kinds of societies and HEIs that we want for the future.

At the same time, the report is a stepping stone in a wider, more ambitious project entitled "GUNi International Call for Action (2022-2025): Rethinking HEIs for Sustainable and Inclusive Societies". This project will be one of GUNi's key strategic lines of action for 2022-2025 and will seek to encourage and help HEIs around the world to deploy the actions and changes that are needed to adapt and become more relevant, inclusive, effective, innovative and socially responsible.

Along these lines, it is also important to highlight that, in the context of the International Call for Action, the present report is conceived as a document that will evolve over the next four years. The aim is to add new materials, reflections and best practices in relation to the covered fields. All of the materials will be published online at the web portal for the special issue and the International Call for Action, including papers, interviews, videos and podcasts, so that the report will be at once a living document for analysis and reflection and a platform for transformational action in HEIs.

2. An important time for a special issue in the series of Higher Education in the World Reports

GUNi's flagship project is the edition of its Higher Education in the World Report series, which has become a benchmark in the higher education sector after seven issues and a synthesis prepared for the 2nd UNESCO World Higher Education Conference.

This time, the current context and situation of change calls for a special issue, not a report focused on a single topic like previous reports, but one that takes a broader view of higher education and sets out a renewed vision looking towards 2030 and beyond.

There are three main reasons why it is now time for the series to add a special issue.

First, GUNi has very recently celebrated its twentieth anniversary. Two decades have passed since GUNi sprang into existence after the 1st UNESCO World Higher Education Conference. Although our higher education systems and institutions and our societies have changed a great deal in the interim, our mission and values are now more important than ever: to foster the role of higher education in society and support the renewal of its visions and policies worldwide in terms of public service, relevance, social responsibility and innovation. More than ever, there is a need to reaffirm the social value, role and contribution of higher education institutions (HEIs), and a need for HEIs to build a new vision and strategy for the future.

Second, in the past few decades, our world has experienced major transformations and crises, including climate change and environmental degradation, demographic pressures, forced migrations, rising inequalities, political pressures and the transformation of the labour market. Some of these transformations could have a devastating effect on our societies and our planet, and might even become irreversible if clear action is not taken urgently. In any case, they have crucial implications for HEIs and the role of HEIs in society and it is of utmost importance to address them. Additionally, the Covid-19 pandemic has exposed pressing issues in higher education and society, and revealed rapid, undeniable transformations such as digitalisation.

Likewise, in recent years, there has arisen an unprecedented need and willingness to connect and cooperate. Yet, there have also emerged narrow-minded conceptions that revolve around nationalism and "we first" policies. The context requires us to think about and develop new visions for higher education and its institutions, missions and values with regard to the public good and social responsibility.

Certainly, there is a need to rethink the role of higher education institutions and their contributions to society in light of the trends and major transformations that are now occurring. HEIs have their own specific characteristics as an outgrowth of their particular culture and region, but they are still part of a global, interconnected system that follows similar patterns.

Third, the 3rd UNESCO World Higher Education Conference (WHEC), which will take place in Barcelona in May 2022 in partnership with GUNi, presents a unique framework and roadmap for the momentum and transformation of higher education in the years ahead. WHEC 2022 has set new guidelines for policy, capacity building, and regional and international conventions and commitments. In doing so, it has drawn on the involvement of a broad range of stakeholders, including policymakers, rectors and presidents of universities, UNESCO Chairs, professors, students, staff, organisations, NGOs, civil society groups, businesses and GUNi representatives. The official launch and presentation of this report within the framework of WHEC 2022 presents an additional raison d'être for a special issue to foster symbiosis and spur the transformation of HEIs.

3. The main premises of the report

The report's approach is based on the key concepts and values of GUNi and UNESCO: human rights, public service, international cooperation, sustainable development, innovation and education for all. The main premises of GUNi, when designing and developing its world reports, are as follows:

- Higher education institutions are societal institutions, and higher education is a fundamental part of society, at the service of the public good.
- Excellence and public service are compatible. Our mission is not to seek the maximum competitiveness of HEIs while ignoring other considerations, but for the competitiveness of HEIs to be at the service of society's interests and needs and to be useful for international collaboration to meet global challenges and advance knowledge, science and human progress.
- Beyond equipping students with the tools needed to enter the job market successfully, higher education is also key to providing people with critical thinking skills, wisdom and an understanding of the world.
- In an age of globalisation, higher education must contribute to global peace and human development through science, culture and communication, strengthening international partnerships and cooperation.

- Autonomy and academic freedom play a crucial role. Autonomy is a necessary condition for the smooth functioning of HEIs. It gives them the necessary degree of independence from external interference in their endeavours, while at the same time accepting that academic freedom is both a right and an obligation.
- The 2030 Agenda for Sustainable Development and human rights with a special focus on gender equality, access and inclusion are transversal, overarching themes.
- Building synergies between traditional disciplines such as science, technology and the humanities will be one of the foremost trends in teaching, learning, research and work in the future.
- It is important to include all stakeholders in society and ensure a comprehensive view that draws on a wide range of backgrounds, geographical regions, genders, and so on.
- The higher education sector's views are paramount, but we also believe in the importance of the rest of society's views, as we understand that HEIs are embedded in their local, regional and international contexts.
- Students should be at the centre of HEIs' activities to support lifelong learning and knowledge production, acquisition and dissemination throughout life.

GUNi's world reports have always sought to provide analysis and produce shared knowledge in the field of higher education around the world. At the same time, our reports aim to be useful tools for institutional action and public policymaking. This is once again the focus of the current special issue: analysis and knowledge creation at the service of decision-making and public policy in the broadest sense.

Accordingly, the present report is descriptive and analytical and it seeks to have an impact on HEIs. That is, it looks ahead and lays the groundwork for adaptation and change, outlining the way forward while being cognizant both of the uncertainty that now surrounds us and of our limitations in predicting the future. That said, no uncertainty or limitation will stop us from imagining potential future scenarios[1].

The report focuses on HEIs, seeing them as societal institutions but also adopting a wider systematic view. We are speaking of higher education institutions instead of universities in order to include the wide variety of tertiary education providers while not trying to define only one model of institution. By taking a comprehensive view, the special issue acknowledges and values diversity and different realities across the world of higher education. We believe in the need for diversity. The vision that we are building will have room for many different types of HEIs.

Looking ahead over the current decade, we think that the biggest transformational potentials of the 2030 Agenda do not lie in pursuing single goals or targets but rather in taking a systemic approach that manages their myriad interactions[2].

Beyond studies and generic analysis, we understand that it is necessary to be very mindful of the reality of higher education across the many countries and regions of the world. Individual countries and regions face unique challenges and have diverse development priorities. The specific design of transformation pathways depends on each context: few solutions will work the same everywhere. Instead, we must strive to combine different sets of transformation levers based on the needs and conditions in each setting. At the same time, we need harmonised high-level efforts to steer the interactions between pathways and their aggregate outcomes in order to deliver universal progress towards the 2030 Agenda[3].

Lastly, the present report arises out of the need for continuity and coherence across the different stages of education: from basic education to higher education and lifelong learning. All too often, these realities are analysed separately, disconnectedly. Yet, in the context of championing lifelong learning, boundaries between stages make no sense at all. As UNESCO-IESALC argues, any thinking about the mission and purposes of higher education cannot miss out its inescapable connections to primary and secondary education, as well as to lifelong learning. For learners to be able to flourish in and beyond higher education in 2050, the values and organisation of all levels of education should be connected[4].

1. "[...] scenarios help us learn from the future to reframe and reperceive our understanding of the present" OECD (2020). *Back to the future of education: Four OECD scenarios for schooling.*

2. United Nations (2019). *Global Sustainable Development Report 2019: The Future is Now – Science for Achieving Sustainable Development.*

3. Messerli et al. (2019). Expansion of sustainability science needed for SDGs. *Nature Sustainability, 2:892-894.*

4. UNESCO-IESALC (2021). *Thinking higher education and beyond: Perspectives on the Futures of Higher Education to 2050.*

4. Structure

In light of the starting positions and goals set out above, the present report has three parts. Following the introduction, the first part bears the title "New Context, New Visions" and brings together key considerations on higher education arising out of a selected array of current debates. The second part, which is called "Transitions: Key Topics, Key Voices", provides room for in-depth analysis of the challenges in each area, and sets out the lines of work and proposals now underway towards the transformation of HEIs. The third and final part addresses the debates and realities of HEIs from a regional perspective, laying out contexts and perspectives in each of the six regions and examining their similarities and particularities. Each of the three parts is explored in greater detail below.

New Visions for Higher Education towards 2030	
	Part 1: New Context, New Visions Analysis of the past 20 years What is currently being done?
	GUNi Vision How higher education institutions must be shaped to respond to the current state of affairs Prepared together with GUNi members
	Part 2: Transitions: Key Topics, Key Voices In-depth analysis of seven topics by contributions from renowned intellectuals
	Part 3: Regional Approaches Middle East and North Africa, North America, Asia and the Pacific, Europe, Africa, and Latin America and the Caribbean

4.1 Part 1: New Contexts, New Visions

The aim of the first part is to conduct an analysis of the context of higher education and construct a new vision for HEIs. When looked at in greater detail, this part explores what has happened in the first two decades of the twenty-first century in terms of general societal trends and trends in higher education institutions.

The eight thematic chapters go into specific areas of higher education that are important for its transformation towards 2030 and beyond. The themes or topics have been chosen for their significance and because, when taken as a whole, they give a good account of the current state of higher education in its entirety. The eight topic areas are set out in the figure below:

New Contexts, New Visions	
	Impact of Covid-19 on higher education
	The future of work: training in competences and skills throughout life
	Citizens: promoting humanist values and profiles in a changing world
	Knowledge: putting research and innovation at the service of social challenges
	The digital–human future: constructing more inclusive and accessible universities
	Sustainability: reinventing universities for a sustainable future
	Internationalisation: reinforcing partnerships to attain common goals
	Governance and professionals: building resilient, innovative and socially committed institutions

The first part begins with the impact of Covid-19 on higher education, treating the topic as a transversal issue with consequences and effects on all of the areas that follow. We have chosen this issue as the right place to start because of the pandemic's significant and unexpected impact in driving transformations like digitalisation and even spurring a paradigm shift in many aspects of society and HEIs.

Next come the main topics of the report, which are developed separately but are viewed broadly and share many points of connection. This view of interdependence reveals a holistic approach to transformation much as Agenda 2030 and the Sustainable Development Goals (SDGs) are conceived as a single horizon of sustainable development.

4.2 GUNi Vision

The next part is called "The Vision of the Global University Network for Innovation". Going a step further in this section, the report provides a purposeful document that lays out a new vision for HEIs in terms of how they must be shaped to respond to the current state of affairs. The new vision aims to be an inspiration that enables us, based on observation, to put forward institutional strategies, objectives, and action plans to achieve them.

This vision arises out of the fundamental values and mission of GUNi, drawing on the analysis conducted in the first part of the report and bringing in the contributions of experts and members of the network. To this end, GUNi created a task force of member representatives who worked closely with the GUNi secretariat to draft the vision. The vision was also shared with all members in order to gather their input and contributions.

The vision is structured in two main sections. The first section sets out the starting point and the principles that frame the scope of action, followed by a look at the way to achieve the vision, which envisages the actions to be taken to bring about change. The second section presents the key developments in the main areas of transformation that correspond to the topics addressed in the first part "New Contexts, New Visions".

4.3 Part 2: Transitions: Key Topics, Key Voices

The second part of the report seeks to analyse and describe how we could move towards this new vision by addressing a number of core issues and topics in higher education. As its title suggests, the second part aims to respond to how we go from where we are now toward our vision for HEIs by delving into the key topics of the first part and giving voice to leading experts and actors in the field of higher education.

In particular, the second part includes a real-time approach to what is currently being done, focusing on what HEIs around the world are doing in response to the needs, challenges, crises and transformations analysed in the first part. For this purpose, seven key topics have been selected:

Transitions: Key Topics, Key Voices	HEIs' governance and public service: between autonomy and community engagement
	Skills and competences: a humanist vision for a changing professional world
	Research and innovation: towards open, ethical and responsible research and innovation
	Sustainability: reinventing the role and place of HEIs for a sustainable future
	ICTs and digitalisation: a digital–human future towards more inclusive and accessible HEIs
	International higher education: from competition to collaboration
	Higher education management: promoting new leadership and innovation

Experts from all over the world have constructed the content of these chapters based on their own particular areas of expertise. Each topic is covered by a number of papers in which contributors set out the challenges, actions and findings and provide inspiring examples of HEIs that are working on initiatives, new developments, changes and innovations to adapt to the new context.

4.4 Part 3: Regional Approaches

Finally, the third part seeks to provide a regional approach on the understanding that, even though the contexts and forces may be global, each region has certain patterns that need to be tackled from a regional perspective. Acknowledging that there are global similarities but also different purposes, organisational cultures, goals and strategies, the following questions guide the six regional chapters of the third part:

- What do the regions feel higher education institutions should be like in the future?
- What are the similarities? What are the differences?

As in the second part, several experts from each region have made contributions based on their own particular field of research, country or regional expertise. The result is six chapters that reflect the following regions:

Regional Approaches	Middle East and North Africa
	North America
	Asia and the Pacific
	Europe
	Africa
	Latin America and the Caribbean

5. Methodology

Below is a detailed description of the methodology followed in each of the three parts and their respective chapters.

Part 1: New Contexts, New Visions

The first part, which is more analytical and wide-ranging in nature, followed an eight-step methodology:

I. General literature review
II. Identification of common issues and concerns
III. Preparation of an initial content outline
IV. Targeted literature review
V. Review of content outline
VI. Drafting of chapters
VII. Review and finalising of chapters

In the general literature review (step I), sources of information were reviewed, including reports on education and higher education, the mainstream print media at national and international levels, publications specialising in education and higher education, scientific papers, online conferences and seminars, books and book chapters, documentaries and interviews, and web portals on education and global trends.

The general literature review was broad and did not discriminate in terms of topics. The result was the identification of common issues and concerns (step II), that is, those matters that appeared repeatedly across the literature. Based on these ideas, we prepared an initial content outline (step III).

With the content outline to hand, the targeted literature review (step IV) delved more deeply into the literature on each identified topic, with focused searches on the aspects regarded as more significant. Based on the targeted readings that followed, the content outline was updated (step v) and the chapters drafted (step VI).

It is important to note that the selection of topics for the initial content online (step III) sought to be representative rather than comprehensive. Our aim was not to cover every topic that is currently a focus of debate in higher education. The text of the drafted chapters (step VI) is based on the bibliography and is in some sense closer to a review. Rather than merely listing a succession of ideas, however, each chapter aims to group similar or parallel ideas together.

Lastly, the chapters were reviewed and finalised (step VII). This step involved the participation of outside experts, who brought their own views to the analysis.

GUNi Vision

Drawing out the key points from each of the topics addressed in the first part, the editorial team held working sessions to look globally at the context of higher education and mark out lines of action that not only reflect GUNi's values and mission and the SDGs in Agenda 2030 but are also, in our view, crucial to the future of HEIs.

Then, a first draft was prepared and shared with all GUNi members in a process of participation and consultation that sought to gather their impressions and input to formulate a more comprehensive vision.

At the same time, a special consultation was undertaken with a selection of GUNi members and outside experts. In this case, the process took the form an online session structured as a focus group. Participants, who read and studied the vision document prior to the session, gave their individual views in the session and offered thoughts and suggestions to enrich the vision.

Parts 2 and 3:

The preparation of the second part "Transitions: Key Topics, Key Voices" and the third part "Regional Approaches" drew on the contribution of experts in the respective topics and regions covered.

Specifically, GUNi sought out potential authors who are specialists in the different topics or from the different regions. Given the particular field of expertise of each contributor, the editorial team proposed that he or she write a paper for inclusion in the special issue along the lines set out in the Concept Note. The contributions

were reviewed by the editorial team jointly with the authors in order to ensure quality and coherence across all contributions.

As a consequence, the resulting chapters have been shaped by many experts from a variety of regions or areas of expertise, whose perspectives are unique and uniquely their own, based on their own particular blend of ontological, professional and geographic principles. Neither the contributors' choice of approach nor their use of terminology implies any particular preference or inclination of GUNi in one direction or another. This special issue as a whole seeks to encompass a wide range of views. For that reason, all of the topics and terminology put forward by the authors have been considered equally valid and pertinent.

6. An ongoing process

As noted earlier, the goal is for the special issue to be useful throughout the period 2022-2025 and in the context of the International Call for Action. To this end, GUNi has developed a new format. Not only will the report appear in print format and as a downloadable file, but GUNI will also launch a live webpage that will display all of the content related to the special issue and also be open to new creations.

As in earlier publications in the series of Higher Education in the World Reports, the print edition of the special issue has been created as an abridged version that contains the thematic chapters in the first part "New Contexts, New Visions" and overviews of the papers in the second part "Transitions: Key Topics, Key Voices" and the third part "Regional Approaches". The complete report including the full papers in the last two parts is available in a totally open format at the GUNi website and the new website for the report itself.

What makes the report unique is that it will be a living document. Throughout the period 2022-2025, new contributions will be added in the form of papers, videos, interviews and podcasts, giving voice and bearing witness to new ideas, contributions and actions relating to higher education institutions and systems as they move in the direction of Agenda 2030 along the lines marked out by the GUNi vision. The overarching aim is for the International Call for Action and the special issue website to become a key open space for contributions to the transformation of HEIs around the world.

Part 1

New Contexts, New Visions

Entitled "New Contexts, New Visions", the first part of the Higher Education in the World Report 8–Special Issue addresses core considerations in eight key areas on the transformation of higher education institutions towards 2030 and beyond.

The topics have been chosen for their significance and because, when taken as a whole, they give a good account of the current state of higher education in its entirety. The eight topic areas are:

- **The impact of Covid-19 on higher education**
- **The future of work: training in competences and skills throughout life**
- **Citizens: promoting humanist values and profiles in a changing world**
- **Knowledge: putting research and innovation at the service of social challenges**
- **The digital–human future: constructing more inclusive and accessible universities**
- **Sustainability: reinventing universities for a sustainable future**
- **Internationalisation: reinforcing partnerships to attain common goals**
- **Governance and professionals: building resilient, innovative and socially committed institutions**

The first part begins with the impact of Covid-19 on higher education, treating the topic as a transversal issue with consequences and effects on all of the areas that follow. We have chosen this issue as the right place to start because of the pandemic's significant and unexpected impact in driving transformations like digitalisation and even spurring a paradigm shift in many aspects of society and HEIs.

Next come the main topics of the report, which are developed separately but are viewed broadly and share many points of connection. This view of interdependence reveals a holistic approach to transformation much as Agenda 2030 and the Sustainable Development Goals (SDGs) are conceived as a single horizon of sustainable development.

The next section of the report is entitled "The Vision of the Global University Network for Innovation". Going a step further in this section, the report provides a purposeful document that lays out a new vision for HEIs in terms of how they must be shaped to respond to the current state of affairs. The new vision aims to be an inspiration that enables us, based on observation, to put forward institutional strategies, objectives, and action plans to achieve them.

1.1 Impact of Covid-19 on Higher Education

1. An increased infrastructure, technology and knowledge gap

Covid-19 has revealed the enormous digital and infrastructure divide that exists between countries and regions, and between higher education institutions, in addition to that which affects the family environment. Worse still, during the pandemic the existing divide has deepened inequalities in various sectors, including education. The inability to go to school or university, the lack of connectivity and of a suitable space within the family, some universities' institutional incapacity to face the pandemic, and technological and structural shortfalls at national level have highlighted and increased inequalities and imbalances. It has also been observed that these inequalities are not only related to access to knowledge, but also to the capacity to handle and use this knowledge. This phenomenon is known as the cognitive divide.

The digital divide has become evident in different ways in different countries. In countries with a medium level of development and even those known as developed countries, it was found that a large proportion of students lacked the right conditions for correct implementation of online teaching (IESALC 2020, p. 20). Furthermore, countries with a lower internet penetration rate and a more inadequate infrastructure resorted to media such as radio or television to ensure that education reached as many students as possible, as explained in a study on the application of technological measures to mitigate the effects of the pandemic, drawn up by the ministries of education in several countries (UNESCO, UNICEF, World Bank 2020, pp. 22–24).

In terms of higher education institutions, a study by the International University Association showed that 85% of European centres moved to online format, while institutions on the African continent mainly cancelled their classes and only 29% could make this change (Marinoni et al., 2020, p. 24). Farnell et al. (2021) explained that European universities could respond with greater efficacy to the implementation of distance education. For example, the University of Strasbourg identified 160 students whose lack of technological equipment meant that they could not access courses or examinations. The university prepared an emergency fund of €61,000 to meet the material needs of these students.

In contrast, other higher education institutions were left behind. Bloomberg (2021) described situations such as that of South Africa, where a lack of incentives from the government and the universities led to protests and pressure to close the universities until these met financial demands resulting from the pandemic. In some higher education institutions, the implementation of technological resources caused controversy and was rejected as it was considered "impractical and elitist". In countries such as Zimbabwe, the charges for electricity and internet access are excessively high for the student body (University World News, 2020).

At the level of the family, students from vulnerable environments experienced considerable worsening in their conditions. The European Commission's Joint Research Centre (2021a, p. 42) explained that the shift to online education increased existing inequalities among students. Specifically, it highlighted the lack of access to technology, the lack of support in homes, and the lack of a suitable environment and space. Reimers et al. (2021, p. 19) noted an increase in forced dependency on parental financial support, whose responsibility replaces that which would ideally correspond to the institution. Unfortunately, in some cases the institution is a much more reliable option than the family.

All of this shows that access to new technologies and connectivity should be considered a fundamental right. Consequently, governments, international organisations, NGOs, development partners and companies, among others, should work together to eliminate existing inequalities. Farnell et al. (2021), for example, advocate for such policies, which could be made possible with the introduction of a nation-wide recovery plan to invest in online infrastructure. Investments should also be made to educate the population in the use of these technologies (United Nations 2020, p. 24; International Commission on the Futures of Education, 2020, p. 7) and thus to avoid or close the cognitive divide (see the section on digitalisation).

The digital divide is only one symptom of the systematic inequality seen in the world of higher education for years. This inequality can be found in many forms in the sectors of the education system, as the provision of quality tertiary education does not depend exclusively on the higher education institutions. It is also strongly influenced by institutional capacity and state infrastructure, and by well-being and security at family and individual level. The combination of these three spheres

shows how the digital divide, which has been revealed by the pandemic, is very deeply rooted in structural inequality. Consequently, **the transition to digital learning is not only about technology but empowering its users and recognising the primacy of the human dimension**. Governments, public and private partners must step up action to narrow the digital divide, extend connectivity and electrification, develop quality digital learning contents and support teachers to master remote and hybrid teaching (Reimers et al. 2021, p. 2).

2. The economic and social crisis accompanying the health crisis

All economic crises inevitably impact education. It is difficult to make a general assessment of this impact in the case of the Covid-19 pandemic, as it has affected each country in a different way and each response strategy has been different. However, in general terms, it is clear that Covid-19 has altered access to higher education, that is, enrolment; the process of training students; and access to the job market, that is, employability after higher education. The extent and duration of economic crises and their impact on education depend on the public policies that are implemented at supranational, national and local levels, in line with the economic capacity of each country and higher education institution.

In terms of access to education, the abrupt halt in face-to-face activities due to the pandemic led to a drop in university enrolment. This situation was mainly due to the poor economic situation that accompanied the pandemic, which increased unemployment and poverty in some households. This increased the pressure on families and on young people with scarce resources, who see in university education a way to get out of a vulnerable situation. It remains to be seen what the long-term impact will be on students, particularly those from low-income families, women, minority ethnic groups, people with functional diversity and students from rural areas, among other vulnerable groups. As indicated in the IESALC (2020) and Farnell et al. (2021) reports, the crisis would have deepened existing disparities in education and reduced opportunities in these sectors. The International Commission on the Futures of Education (2020, p. 19) also warned that the economic crisis would lead to greater job losses and an increase in vulnerability in these sectors to an extent not seen in decades. **The structural and systematic discrimination against students in the most vulnerable sectors could even lead to a generational catastrophe (United Nations 2020, p. 10) and create a "Covid generation" that experiences an unprecedented decline in social mobility and faces a difficult situation with respect to their future** (Farnell et al., 2021).

The pandemic has increased the hazards and risks suffered by women. The closure of education institutions caused a situation of greater risk for women, who were susceptible to greater abuse, domestic violence and an increase in forced and early marriages (United Nations 2020, p. 10). In addition, the pandemic meant that families had more time at home, which led to an increase in the time dedicated to caring for the family and the home; a role that is usually attributed to women. It is therefore women who neglect their work and study time, which inevitably increases the gender gap (United Nations, 2020, pp. 10–11)

In addition, as Taner stated (2021), the pandemic has affected universities' budgets and has led several institutions to state that they are in a financial crisis. IESALC (2020, p. 28) notes that the most vulnerable universities are the small and medium-sized private institutions that have less economic and technological capacity to guarantee online teaching. Although public universities are less likely to disappear, as they generally receive state support, they may suffer from large cuts in public spending and a drop in student contributions (IESALC, 2020, p. 28). To understand the situation and to be able to take the most suitable measures, the losses generated in higher education institutions due to decreased income from local and international student enrolments need to be assessed (Farnell et al., 2021).

Regarding employability, another impact associated with the pandemic has been an increase in fears and concerns among students regarding their professional future (Aristovnik et al. 2020, p. 22). The International Labour Organization noted that the pandemic has wreaked havoc in the job market. It has exacerbated job losses with increased unemployment and a worrying rise in work inactivity, causing a reduction in working hours in those who are still employed and creating a global loss in labour income. Above 25% of those employed in temporary jobs during the first quarter of 2021 were previously permanent employees. Although

informal work dropped sharply in mid-2020, a relatively rapid recovery has been seen that suggests that employees who lost their jobs have entered the informal economy (International Labour Organization [ILO], 2022). Therefore, the pandemic has accentuated job insecurity and economic uncertainty.

Farnell et al. (2021) noted that a possible mid-to-long-term effect of the shift to online education could be an increase in unemployment among university graduates. This would be due to employers' lower trust in the quality of online studies and their demands. However, some distinctions should be made. The e-Valuate project has defined a series of important criteria to recognise quality online education through "the quality, authenticity, level, learning outcomes, workload, testing and participant identification of an e-learning certificate" (NUFFIC 2019, p. 5). These elements contribute to credibility and transparency, which would help online qualifications to be recognised by employers (Andersen et al., 2021). In addition, **higher education institutions will need to create new laws and regulatory terms for quality assurance and recognition of qualifications in the context of distance learning, to protect academic integrity** (Farnell et al., 2021). The pandemic has helped to generate and promote better development of technologies, at the same time as it has increased the offering of distance courses. Gradually, this type of education will gain recognition by employers, as long as quality criteria are met.

Education should be seen as an essential tool to get out of this socio-economic crisis (Farnell et al., 2021). Universities and states should plan mitigation strategies and anticipate the impact on student enrolment and employability. Financial support should be given to students and higher education institutions to be able to get through the crisis and reduce the effects in the short, medium and long term after the pandemic (Farnell et al., 2021). In addition, it is important to consider the gender dimension in inequalities that have been worsened as a result of the pandemic. This crisis has shown that the right to education should be flexible and adaptable to the circumstances, contexts and needs of society. Furthermore, it has revealed that the right to education needs to be updated and extended (UNESCO 2020, p. 12).

3. Teaching and studying in a post-pandemic society

The sudden shift towards online teaching and learning brought about several changes to the experience of teachers and students, and to the relationship between them. In the post-pandemic context, teachers' and students' skills and competences must be updated or rethought in face-to-face and online formats. The virtual classroom comes with some serious challenges, which affect the quality of student life in many ways. For example, vulnerable students may have only limited access to educational resources, and privacy may be violated by big data technologies. As higher education becomes increasingly hybridised, it remains to be seen how the overall quality of educational competences of students and teachers will be affected in the long term. As for the face-to-face format, after the experience of the pandemic, it is even clearer that the classroom plays an important role in providing a healthy, enriching environment for students.

During the pandemic, teachers had to remodel their teaching methods in a format that was unexpectedly forced into their professional lives. As competent and eloquent as a teacher may be, the quality of their lectures could be involuntarily hindered by their lack of experience in using the virtual format as the main tool for their teaching. This idea was reinforced by IESALC (2020, p. 36), which stated that the knowledge and expertise required to understand the technological complexity of the virtual format has exacerbated the need to improve teachers' competences in the difficult task of efficiently adapting their lectures to online teaching. Similarly, Farnell et al. (2021) pointed out that the pandemic revealed a need for thorough pedagogical and technological training of academic and administrative staff on data protection in online tools, so that online teaching can be properly prepared and implemented.

As for students, the lack of face-to-face social interaction in college campus life diminishes and undermines what is generally considered a unique experience at this stage in life. Digital technologies can provide new teaching methods that counter the loss of physical presence, albeit not entirely. Farnell et al. (2021) argued that without an approach focused on safeguarding presence, vulnerable sectors' participation in the student community could be reduced.

This would raise significant concerns about educational equity. The International Commission on the Futures of Education (2020 pp. 9–10) agreed with this assessment:

> This [virtual education] is a major problem for children living in poverty worldwide, who often rely on the physical setting of their schools to provide educational materials, guidance, and, sometimes, the only decent meal of the day. In their homes, especially during times of confinement or quarantine, children can face multiple forms of abuse and violence. Crowded conditions, a general lack of resources, particularly digital devices and connectivity, mean that typically the cost – in terms of education and general well-being – of the current health crisis will be highest for populations that are already vulnerable.

Those who do not suffer from the digital divide are typically digital natives and thus are familiar with digital tools for education. However, the complete digitalisation of education eroded what Agamben (2020) considered the essence of studentato ("studenthood"): the physical exchange of ideas and perspectives between teacher and student, and between students themselves, who come, often from all over the world, to share a particular way of life based on learning and growing. Losing the essence of studenthood – regardless of whether this is due to a lack of access to technology or teachers' lack of technological know-how – implies that no matter how developed and well-implemented the technology is, the quality of education will be hindered.

In many countries where the essence of student life has been severely affected, there is a general lack of purpose among students regarding the inherent goal of their commitment to educate themselves: "the effects of the pandemic in higher education institutions has dramatically increased students' concerns about the future of their professional careers" (Aristovnik et al. 2020, p. 22). As Burns et al. (2020, p. 7) pointed out, financial constraints, social isolation and overwork are many factors affecting the mental well-being of students that contribute to the aforementioned loss of "studenthood" as well as the loss of motivation to conceive higher education as a worthy endeavour. The loneliness and isolation resulting from not interacting with friends and companions is extremely detrimental to a student's mental health. The lack of interaction is also associated with an inability to actively experience and perfect competences related to teamwork and organisation.

To address this, students should be allowed to switch between online and in-person classes for flexibility (Farnell et al., 2021). Actually, every aspect of student life in many higher education institutions is moving towards hybridisation, with a mix of on-campus and off-campus activities, online examinations, and new teaching methods. All of this will give students and teachers the experience they need to adapt to the new context (Gomez Recio & Colella, 2021, p. 23). Perhaps the lockdown and the forced reliance on virtual teaching tools have exposed flaws in the methods and techniques used in higher education to date.

The classroom could be considered an opportunity for students to exchange ideas, debate issues and interact in seminars and group peer-to-peer discussions. This could contribute to the elimination of instruction methods that revolve around the constant reception of information. The theoretical part of education could be taught in online format. In contrast, the physical space of the classroom could be reserved for practical and interactive learning. Perhaps this is the "silver lining" that higher education institutions can extract from the sudden, unexpected shift towards a virtual classroom model. As they could not carry out face-to-face activities in the classroom, teachers and students could think about what they valued and missed most in such interactions. This would serve to strengthen student life once it has attained a certain level of "pre-pandemic normalcy".

Taking into account the relevance of the physical environment for the sake of fruitful teaching and learning, higher education institutions must achieve a fair balance between online and face-to-face modes so that they can bring about a healthy, successful hybridisation of their education services. Both teachers and students must have a role in determining how education is imparted, or better put, experienced, from both sides. Technology should not be left to set the rules for how tertiary education will be provided in the coming years. Digital tools are likely to play a proactive role in addressing the challenges posed by the pandemic, but they must not become higher education's central axis. However, provided "that technological solutions do not harm those who already start from a disadvantageous situation" (IESALC 2020, p. 42), the introduction of digital technology has the potential to favor access to higher education. We need to appreciate how the digital age has transformed the world into a global village. The pandemic has increased visibility and awareness about digital divides and the inability and lack of preparation for the implementation of distance education.

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1.2 The future of work. Training in competencies and skills throughout life

1. The labour market today: changes taking place and changes needed

The world of work is being shaped by new global challenges, scientific and technological advances, globalisation, the economy and social changes. The labour market is changing, as are the knowledge and skills needed to enter it. This means that lifelong learning, reskilling, the acquisition of new skills and even readiness to change professional sector have all come to the fore (Woetzel et al., 2021).

The changes that the labour market is undergoing are numerous and diverse. Facer (2021) underlines the following: new technologies have restructured and will continue to restructure employment; women's participation in the formal economy has increased globally; polarisation between highly paid work and growing mass low-wage work has increased; globalisation has increased the complexity of supply chains; and, finally, there has been growth in informal economies and under- and precarious employment. Likewise, the interaction between these trends is giving rise to related phenomena. Based on the ideas of Graham and Shaw (2017), Facer (2021) explains, for example, that the intersection between precarity and digital technologies is pushing towards the emergence of a gig economy that both "creates new labour markets and transform[s] (some) old ones" and offers "the capacity to exploit and alienate workers in new and innovative ways". At the same time, according to research by the McKinsey Global Institute (Manyika et al., 2017), 60% of current occupations have 30% of activities that could be automated. Thus, this partial automation has led us to reflect on essentially human contributions and consider how they can be enhanced through education.

In addition, the Covid-19 pandemic has exacerbated many of the existing problems. According to The Economist (2021b), the health crisis "has destroyed millions of jobs, causing a drop in employment that was 14 times bigger than the one after the financial crisis of a decade ago. In many countries unemployment has risen to levels last seen in the 1930s, with the pain concentrated among the low-skilled". However, The Economist itself offers a contrasting view of this pessimistic outlook. With a focus on the 37 members of the Organisation for Economic Co-operation and Development (OECD), a club of mostly rich countries, it argues that popular perceptions about the world of work are largely misleading. It points out that the legacy of the pandemic "may be a better world of work, as it speeds changes that were already under way and highlights those places where further improvement is needed". Specifically, it emphasises the fact that teleworking will offer greater flexibility and, at the same time, make workers more productive. It also predicts that governments will play a bigger role in sustaining employment and reducing inequalities, since the pandemic has highlighted the importance of a healthy labour market.

Against this backdrop of rapid and sometimes entirely unexpected changes, it is difficult to predict what the future of work will look like. This was pointed out by UNESCO (2015) long before the pandemic compounded the instability: "Indeed, the quickening pace of technological and scientific development is making it increasingly difficult to forecast the emergence of new professions and associated skill needs."

We do know, however, what changes are needed to build a healthy work environment. In this regard, one of the most obvious needs involves putting workers at the centre, because this change will naturally give rise to many others. The movement Democratizing Work: Democratize, Decommodify, Remediate[1] indicates, first and foremost, that firms must be democratised and highlights the fact that workers "hold the keys to their employers' success. They are the core constituency of the firm, but are, nonetheless, mostly excluded from participating in the government of their workplaces – a right monopolized by capital investors". Secondly, it points out that work must be decommodified, "[which] means preserving certain sectors from the laws of the so-called 'free market' [and also] ensuring that all people have access to work and the dignity it brings". Thirdly, it mentions "environmental remediation" by referring to the need for a "successful transition from environmental destruction to environmental recovery and regeneration". According to this movement, this will be possible only in democratically governed firms, in which all voices are heard when it comes to strategic decision-making. If this does not happen, "labor and the planet always lose".

The role of women has been and will continue to be a prominent feature of debates about the changes needed in the labour market. With respect to the specific case of

1. See https://democratizingwork.org/

higher education, although women's access to higher education studies is increasing, a phenomenon known as "female advantage" (see chapter *Sustainability*), a number of voices have pointed to the lower presence of women in professional positions at universities. According to UNESCO-IESALC (the International Institute for Higher Education in Latin America and the Caribbean) (2021), "women still encounter obstacles when seeking to occupy key academic positions in universities, to be involved with relevant research, and to take leadership roles". Moreover, "the so-called STEM areas of study (that is, science, technology, engineering and mathematics), [...] show a heavy underrepresentation of female students in most countries. This underrepresentation of female students is then closely linked to the underrepresentation of female researchers in these fields" (UNESCO-IESALC, 2021). The reason for this is that "cultural structure and stereotypes have helped identify careers as female or male, therefore increasing the gap" (UNESCO-IESALC, 2021b).

The labour market is not only critical to ensuring that everyone can cover their basic needs; it is also crucial for the development of the individuals within society. Accommodating it properly should represent one of the main goals of higher education institutions (HEIs). In this context, the new skills demanded by today's labour market are presented below (Section 2). These skills are linked to a paradigm shift in the way we understand learning (Section 3), as well as to an expansion of learning moments and environments: lifewide and lifelong learning (Section 4). Finally, Section 5 of this chapter asks what role education institutions should play in this new scenario.

2. The broad spectrum of new skills

Focusing on the diagnosis of the World Economic Forum's 2021 report Upskilling for Shared Prosperity, Myklebust and Smidt (2021) state that "there is a fast-growing void and stark mismatch between people's current skills and the skills needed for jobs that will be created in the next decade". According to these authors, these skills include specific knowledge for new professional profiles, such as digital skills, and transversal skills, such as critical thinking. The European University Association (EUA) (2021) also highlights the need to acquire, in this case, three skill types: "the interplay between professional, technical and transversal skills is crucial. Employers have a demonstrated interest in transversal skills, even in jobs with a strong technical profile." In fact, the European Higher Education Area (EHEA) (2012) had stated this 10 years earlier in the Bucharest Communiqué: "Today's graduates need to combine transversal, multidisciplinary and innovation skills and competences with up-to-date subject-specific knowledge so as to be able to contribute to the wider needs of society and the labour market. We aim to enhance the employability and personal and professional development of graduates throughout their careers."

Transversal skills are general, while technical skills are specific and take a very concrete approach. They promote knowledge and learning through different paths, but the paths are complementary and both are essential in today's world. The following sections explore transversal skills (Section 2.1) and technical skills (Section 2.2).

2.1 Transversal skills

In a constantly and rapidly changing society, UNESCO (2015) stresses the importance of cultivating adaptability and resilience in the professional arena, which "implies ensuring that individuals are more resilient and can develop and apply career adaptive competencies most effectively. These competencies often include more emphasis on what have been variably 'transferable skills', 'twenty-first century skills', and 'non-cognitive skills'". In his book El trabajo ya no es lo que era (2020), Albert Cañigueral anticipates that "the illiterate people of the 21st century will not be so much those who cannot read and write, but those who cannot learn, unlearn and relearn" (quoted in Argemí, 2020).

Based on data from the report SDG 4: the role of companies in achieving quality education[2], Riestra Puga (2020) also highlights the importance of a willingness to engage in lifelong learning, adaptation, creativity and innovation, and in relational aspects such as management of emotions, communication, leadership and empathy. With respect to relational aspects, the importance of prioritising collaboration over competition is a recurring theme (Reiner Mason, 2021).

2. See https://www.pwc.es/es/publicaciones/tercer-sector/ods4-el-rol-de-las-empresas.pdf

According to the World Economic Forum (2020), the top 10 skills for 2025 include: (1) analytical thinking and innovation; (2) active learning and learning strategies; (3) complex problem-solving; (4) critical thinking and analysis; (5) creativity, originality and initiative; (6) leadership and social influence; (7) technology use, monitoring and control; (8) technology design and programming; (9) resilience, stress tolerance and flexibility; and (10) reasoning, problem-solving and ideation. Most of these refer, broadly speaking, to problem-solving and the others refer to aspects relating to self-management, working with people and technology use and development.

The Vitae Researcher Development Framework (RDF)[3] provides a benchmark for identifying transversal skills; in this case, they are aimed at the research community, although they can clearly be broadly applied and adapted to other domains. The Vitae RDF is structured into four domains: Domain A covers knowledge and intellectual abilities; Domain B corresponds to personal qualities; Domain C is related to knowledge of the professional standards and requirements to do research; and Domain D concerns the knowledge and skills to work with others to ensure the wider impact of research.

These are just a few examples of transversal skills cited in the literature. As demonstrated, they include a wide and varied range of skills that can be summarised as follows: adaptability and creativity, which are closely related to each other; the ability to solve problems; and the ability to self-manage and relate to others.

The humanities play a major role in the development of transversal skills. While these aspects are addressed in the chapter Citizens, focused on humanities, and in the chapter The digital-human future of this Report, it is important to note that many of the transversal skills that are, and will continue to be, in greatest demand in the job market are closely related to the humanities, and that one of the reasons for this lies in the phenomenon of automation; machines and robots will perform tasks previously carried out by humans, and humans will be forced to strengthen every aspect that differentiates them from these machines and robots. GUNi (2019) explains this phenomenon as follows:

> "As is recognised in the report Work for a Brighter Future, published in 2019 by the International Labour Organization, [...] some of the skills that will be most in demand are related to the humanities, communication, relations and critical thinking. If we think that many activities will be automated, and very much so, in the immediate future, it is obvious that the resulting jobs will have to incorporate other skills and abilities, and these include those linked to and driven by study of the humanities."

2.2 Technical skills

Both policymakers and international organisations and experts point to mismatches between the training and skills needs of the labour market and the supply of workers with these qualities (Taylor and Burquel, 2021). Given this reality, the SDGs themselves, specifically Target 4.4, stress the need to "substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship".

According to the World Economic Forum (2020), there has been "a clear acceleration in the adoption of new technologies [...] Cloud computing, big data and e-commerce remain high priorities [...]. However, there has also been a significant rise in interest in encryption, reflecting the new vulnerabilities of our digital age, and a significant increase in the number of firms expecting to adopt non-humanoid robots and artificial intelligence, with both technologies slowly becoming a mainstay of work across industries". These new technologies are set to drive the future growth of the industry and give rise to new jobs and the need for new skills, explains the report by the World Economic Forum (2020).

The report also presents a list of "cross-cutting skills", i.e. skills that are in demand across multiple emerging professions. They are as follows: product marketing; digital marketing; Software Development Life Cycle (SDLC); business management; advertising; human computer interaction; development tools; data storage technologies; computer networking; web development; management consulting; entrepreneurship; artificial intelligence; data science; retail sales; technical support; social media; graphic design; and information management. As is clear, most of these skills derive from

3. See https://www.vitae.ac.uk/researchers-professional-development/about-the-vitae-researcher-development-framework

the digital transformation and the implementation of new technologies currently taking place in the world of work; skills related to business management and marketing also feature prominently.

In this context, the concepts of skilling, reskilling, upskilling and micro-credentials have emerged. These relate to training that is closely linked to market demands, is short-lived and is generally delivered in virtual format. They also involve a modular approach to knowledge, since they focus on very specific learning intended for a specific task. As defined by Techonline.ca (2021), "Micro-credentials are a key component of many government strategies for upskilling and reskilling. They are designed to help close the skills gap and get people back to work. They also reflect a trend toward on-demand, short-form learning that is focused on skills, competencies and specific capabilities – a shift away from long-form learning, such as degrees and diplomas".

Although micro-credentials are partly defined by their links to both industry and the academic world, these links need to be concrete and efficient. According to Techonline.ca (2021), in the case of industry, it is important to "link micro-credentials to the in-demand (or soon to be in-demand) skills and competencies employers are actually seeking" and, to ensure that this link is real and effective, the industry needs to be involved in the design of micro-credentials. Moreover, it is crucial to create mechanisms to assure employers that micro-credentials actually train employees in the skills for which they have been designed:

"The key is that employers agree that a specific micro-credential and its assessment provide a sufficient basis for employability." With respect to links to the academic world, it is important to identify micro-credentials that can be scaled up to undergraduate or postgraduate degrees and that give rise to credits for these degrees.

Internships and work placements also represent effective tools to prepare individuals for entering the workplace, since they provide them with professional experience. As mentioned by EUA (2021), it is also essential that internships and work placements provide a good fit for both the employer and the academic programme: "[They] should be carefully designed within the curriculum, to meet both employers' demands and academic requirements." However, in the context of curricular activities, it is important to go beyond internships and work placements to offer "a mixture of curricular interventions, e.g. combinations of internship modules, practical courses and different teaching methods (project-based learning, community- based learning, research-based learning, etc., possibly including real-life based, authentic assessment)" (EUA, 2021). In this regard, **the dual training initiatives implemented in many countries represent a useful methodology that favours the hybridisation of academic knowledge and practical knowledge of the workplace**.

In a global world, it is impossible to overlook the importance of international experience, even if this is not strictly speaking a technical skill. As indicated by Weimer (2018), "robust research has emerged supporting the assertion that a student's employability is impacted by their international higher education engagement [...] It's up to the institution to create rich opportunities and provide tools for students to reflect on and transform their international experience into desirable employability traits".

Finally, it is important to update skills, but also to ensure that this is accessible for everyone. Woetzel et al. (2021) present the notion of the "three Es" – everyone, everything and everywhere – in relation to the case of China. According to Woetzel et al. (2021), China will play a key role in determining tomorrow's global labour market, because "one-third of the global occupational transitions needed for the future of work may be in China". In this context, the three Es refer to three aspects that are necessary for the transformation of this country and are, in fact, applicable globally. "Everyone" refers to the need for the entire population to acquire the skills they need. "Everything" stresses the importance of addressing cognitive issues, such as critical thinking and decision-making; social and emotional issues, such as interpersonal skills and leadership; and technical skills, such as advanced data analysis. Finally, "everywhere" refers to the need to make education and training ubiquitous and available to everyone throughout their lives.

2.3 Personal responsibility for learning

In addition to acquiring new skills, it is essential to empower students and make them responsible for their learning and, by extension, their career paths: "Addressing employability skills does not only mean enabling graduates to find a job or create one. [...] It is about empowering students as self-reflective, lifelong learners, and ultimately developing their personal responsibility for their learning" (EUA, 2021). Taylor and Burquel (2021) also reflect this idea when they refer to the need to place students at the centre of the educational process:

> Student-centred education implies that students are given the responsibility for their own learning process, setting their own goals and finding their own pathway to become independent thinkers, develop the confidence to learn by discovery (rather than simply to memorise information), acquire lifelong learning skills to deal with 21st century problems and compete in the local and global job market (Taylor and Burquel, 2021).

Meanwhile, Facer (2021) emphasises the importance of nurturing students' ability to respect themselves and construct dignified work environments for everyone. According to the author, it is necessary to nurture "the capacity for students to respect themselves, identify what constitutes valuable work for themselves and their community and develop the personal and social capacities to organise collectively in order to create conditions in which they are able to conduct such work with dignity". Within this framework, the importance of group and collaborative work comes to the fore, because "creating viable working opportunities can no longer be seen as the job of the individual in isolation, or the subject simply of individual 'careers', but is also dependent on the collective capacity to negotiate fair wages, working conditions and employment rights".

Both Facer (2021) and Taylor and Burquel (2021) also point to the social impact of learning by underscoring the skills, social capacities and valuable work individuals can bring to the community. **By linking their educational and professional journey to civil society, students' empowerment and personal responsibility transcend the private sphere**. In this regard, new educational and social action methodologies have emerged, such as service-learning, an educational approach that combines community responsibility and learning to give meaning to the training process.

Empowerment in learning is important not only for students, but also for leaders; students and leaders are, in fact, just different points on a continuum. To this end, Mikkelsen and Jarche (2015) explain that "we need leaders who promote learning and who master fast, relevant, and autonomous learning themselves. There is no other way to address the wicked problems facing us. If work is learning and learning is the work, then leadership should be all about enabling learning".

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In this context, Harold Jarche, co-author of this article and a consultant on distributed work and networked learning, developed the so-called Personal Knowledge Mastery (PKM)[4], a lifelong learning strategy and a method for individuals to take control of their professional development through a continuous process of seeking, sensing-making and sharing. As Mikkelsen and Jarche (2015) explain, "seeking" is about finding things out and keeping up to date with smart filters to sort out the valuable information; "sense-making" is how we personalise information and use it; and "sharing" refers to exchanging resources, ideas and experiences with our networks, as well as collaborating with our colleagues. With this method, "everyone in an organization can become part of a learning organism, listening at different frequencies, scanning the horizon, recognizing patterns and making better decisions on an informed basis". In addition, a new position has emerged and is becoming increasingly present in organisations: the Chief Learning Officer (CLO), who is responsible for facilitating learning and is capable of leading and facilitating processes of change, digital transformation, learning and innovation in an uncertain environment (RRHHDigital, 2020).

3. A paradigm shift in the way we understand learning

The far-reaching changes affecting the professional world, and society in general, have extended to the education system. This is becoming evident at a time when neuroscience is undergoing significant advances that are having a major impact on education. In short, neuroscience offers an insight into the way the brain functions "to better understand the interactions between biological processes and human learning" (UNESCO, 2015). As David Bueno explained in an interview with Ferragut (2019), we used to see the long-term results according to the strategy used, whereas now we can see what is happening in the brain, which allows

4. See https://jarche.com/pkm/

us to understand more about how learning should be sequenced and how knowledge should be transmitted. It should also be noted that proposals emerging from the field of neuroscience and related disciplines are linked in particular to so-called transversal skills (Section 2.1) and individuals' responsibility for their learning process (Section 2.3).

In this context, **one of the key aspects is the importance of putting students at the centre of the learning process. Students must tackle learning challenges on their own, which allows them to mobilise existing knowledge and generate new ideas**; for example, teachers must give them time before intervening, together with other practices that stress the importance of self-learning and empowering children to take control of their learning (Porlán, 2021; Cornella, 2021). However, putting students at the centre of learning and promoting their autonomy is not about self-teaching, on the contrary, the people who accompany students in the learning process are crucial (Monereo, 2021). Autonomy is about being able to solve problems with the voices that support you.

Another important aspect, closely related to putting students at the centre, is the need to **focus on the questions** rather than the answers. Knowledge cannot be "given"; rather, students must be supported as they build it (Porlán, 2021). Monereo (2021) points out that those who are able to ask good questions develop better, while Tokuhama (2021), suggests that students should be assessed based on the quality of their questions. In any case, it must be emphasised the importance of placing students in the learning context, since knowledge provides the answer to problems, projects, cases, challenges, dilemmas, etc (Porlán, 2021). It is therefore necessary to place students in the context that gives meaning to the question, the problem and the knowledge.

Another matter of ongoing debate relates to the **depth of learning**. According to GUNi (2019), "if education [...] focuses only on the zoom without a wide angle view, it is no longer education and instead becomes schooling, programming or indoctrination"; it is therefore necessary "to maintain and enhance this 'wide-angle' lens, but without neglecting the opportunity to 'zoom in' on any required specialisation in any particular field of study". In this sense, Gilbert Martínez (2021) also argues the importance of in-depth knowledge: "We need to decide between spending class time on developing in-depth, albeit less extensive, knowledge, and prioritising breadth over depth." According to the author, in-depth knowledge is necessary because it is "durable, transferable, functional and productive".

Along similar lines, there has also been a change in the way we understand and organise knowledge, and this has clear implications for learning and higher education. Specifically, there has been a paradigm shift in the organisation of knowledge based on differentiated disciplines, with a tendency for self-referential research and academia's isolation from the professional world, the job market and students, towards **interdisciplinarity** linked to the emergence of the knowledge economy (Tabulawa, 2017). **Given the complexity of contemporary challenges that require comprehensive reasoning and a multidimensional perspective, interdisciplinarity eschews watertight compartments and links knowledge from different disciplines, thereby providing students, professionals and academics with tools for better knowledge integration and promoting scientific, technical, personal and professional development (Llano Arama et al., 2016)**. Thus, in the field of learning, interdisciplinarity is embodied in "the teaching of the interrelationships between all phenomena in the universe, such that students do not learn in a piecemeal way when being taught things that occur in an integrated manner in real life" (Llano Arama et al., 2016).

Memory, which already plays a key role in traditional education, also takes centre stage in this new paradigm. According to the philosopher Gregorio Luri (quoted by Gilbert Martínez [2021]), "memory is not a punishment but a privilege that must be encouraged because it generates knowledge". The more knowledge we have about a subject, the more easily we learn new things. According to Luri, memory is also about adding value to language; in fact, "academic failure today is often related to students' linguistic poverty". Costas (2021) also relates memory to language as: "Intelligence is built with language. Memory must be cultivated. Without it, how can language be enriched?". Finally, in an interview with Zafra in 2021, César Coll, Emeritus Professor of Evolutionary Psychology and Education at the University of Barcelona, exposes that a distinction must be made between explicit and procedural memory:

> Psychologists differentiate between explicit memory, which is when we learn something, understand it, relate it to things we already know and are able to use it, and procedural memory. School teaching has long been based on the need to acquire as much knowledge as possible in a mechanical way. But that doesn't work. Some things have to be learned through repetition, but the vast majority are related to how things work, the world and society.

Within these new learning frameworks, **assessment methods** must change. As Carles Monereo explains, students learn according to the assessment model; we teach what we have to assess. Assessment influences learning and teaching; therefore, new learning models call for new assessment models. Assessment must be a training resource first and foremost; it must feed back into learning, as explained by Rafael Porlán. Moreover, students must be involved in the assessment process. As Monereo explains, "It is becoming increasingly important for students to participate in rubrics and engage in assessments. We need to make them partners in the assessment and teaching process", because "assessment helps us improve and prosper".

4. Stretching across space and time: lifewide and lifelong learning

Gorbis (2013) proposes a fluid, ubiquitous and rich learning model that occupies every single area of society and our lives:

> We are moving away from the model in which learning is organized around stable, usually hierarchical institutions (schools, colleges, universities) that, for better and worse, have served as the main gateways to education and social mobility. Replacing that model is a new system in which learning is best conceived of as a flow, where learning resources are not scarce but widely available, opportunities for learning are abundant, and learners increasingly have the ability to autonomously dip into and out of continuous learning flows (Gorbis, 2013).

Many concepts have proliferated based on the idea of lifewide learning: learning ecologies and ecosystems, which refer to learning involving the whole ecosystem; community schools and learning, which encompass the same idea but focus on the community; education and expanded learning, which refer to broader learning; and informal, unconscious, invisible and silent learning, which involves all learning that occurs outside the formal system and conscious action. Likewise, after-school and summer learning activities are being given ever-greater prominence, as they are regarded as crucial to educational success.

As explained by EUA (2021), "in addition to the classroom, [...] skills acquisition and training also takes place through informal or non-formal learning, outside the classroom, or in a mixture of co-curricular and extra -curricular situations. This poses the question of recognition for learning that takes place outside the curriculum and is not credited as part of it". In addition, one of the future scenarios presented by OECD (2021) involves "extended school housing multiple activities (like many college campuses today) other than those purely academic". Gorbis (2013) takes an open, holistic viewpoint and suggests that "instead of worrying about how to distribute scarce educational resources, the challenge we need to start grappling with in the era of socialstructed learning is how to attract people to dip into the rapidly growing flow of learning resources and how to do this equitably, in order to create more opportunities for a better life for more people". Some initiatives in this spirit are the National League of Cities' Education and Expanded Learning and the Bofill Foundation's Aliança Educació 360°. Finally, the Magna Charta Universitatum (MCU) (2020) establishes a large network of higher education institutions and links them to the host community:

> [Higher education institutions] are part of global, collegial networks of scientific enquiry and scholarship, building on shared bodies of knowledge and contributing to their further development. They also are embedded in local cultures and crucially relevant to their future and enrichment. While they are immersed in and connected with global developments, they engage fully with and assume leading roles in local communities and ecosystems (MCU, 2020).

The idea of lifewide learning goes hand in hand with another recurring concept that is widely sought after in higher education: lifelong learning. These days, having a university degree is not a guarantee of a job, much less a stable job for life. Learning does not end with a degree, and it is this idea that underpins the concept of lifelong learning. As pointed out by EUA (2021), "While a university degree is needed and appreciated by employers, that degree education may no longer

be sufficient to ensure employability throughout one's lifetime". UNESCO (2015), meanwhile, stresses that "lifelong learning is critically important to coping with new employment patterns and achieving the levels and types of competencies required by individuals and societies". Fitó (2020) also refers to this concept: "In this new scenario, the limited life span of education no longer makes sense; the current challenge for universities is to promote people's empowerment and their ability to adapt to permanent change." In this context, lifelong learning must become a right. As Roca (2021) puts it, "It is no longer enough to say that lifelong learning must be a functional necessity; rather, it must be an inalienable right of everyone: the right to lifelong learning".

Moreover, several authors stress the importance of establishing ties throughout the learning process, from childhood to adulthood. In this regard, the MCU (2020) portrays higher education institutions as part of a continuum: "Education is a human right, a public good, and should be available to all. Universities recognise that learning is a lifelong activity with tertiary education as one part of a continuum. Within that one part, universities serve diverse learners at all stages of their lives."

5. The role of HEIs: reducing tension and becoming part of the ecosystem

It is essential to establish "a series of transformations that will turn the training-based vocation of higher education into a clear employability-based approach", says Fitó (2020). It should be noted, however, that this vital link between higher education institutions and the professional world creates two types of tension: firstly, with the academic character that has defined universities over the centuries and, secondly, with the need to turn students into critical, free citizens as well as professionals.

EUA (2021) focuses on employability to explain that "academic staff and students may be concerned not to dilute the sense of academic activities connected to their subject fields". Similarly, in quoting Ellen Hazelkorn, joint editor of Policy Reviews in Higher Education, Myklebust and Smidt (2021) state that "too often [...], there is a tetchiness about associating university education with the world of work". Referring to this tension, Fitó (2020) argues that the two viewpoints are perfectly compatible and that under no circumstances does "seeking to combine both aspects equate to exploiting or trivialising higher education".

This tension could be partly due to the fact that a distinction is not always made between two types of higher education institution: one that provides training aimed more at professional development and does not offer doctoral programmes, and the other that puts more emphasis on research and offers programmes at all levels, from undergraduate to doctoral degrees (Generalitat de Catalunya, 2020). As Bert Van der Zwaan, former chairman of the League of European Research Universities, explained to Myklebust and Smidt (2021), "the incentives for research universities to change their curricula in that direction are simply not enough; they are funded for, and thus focused on, fundamental research and are too far from the labour market to react adequately. [...] applied universities and polytechnics, higher education institutions with vocational missions, are best placed to take the lead here. If they are successful, research universities will eventually follow".

Another cause of this tension, according to EUA (2021), is that in some disciplines, in addition to the inherent academic conservatism, "it may be more difficult to address employability and to have it reflected in learning outcomes". One solution to this problem would be to establish different definitions of employability, depending on the discipline:

> While a university-level definition of "employability" is needed, faculties or departments may find it useful to also develop their own, complementary, field-specific definition. This definition could be jointly elaborated with relevant stakeholders in their field (employers, representatives from professional organisations, etc.). Such a collaborative approach would also help to identify field-specific skills required for the curriculum (EUA, 2021).

Another source of tension arising from the link between higher education institutions and the world of work is the dichotomy between developing professionals and citizens with a long-term view and meeting the immediate needs of the labour market: "The concept of employability can be development-focused, but can also be seen as geared towards the immediate needs of the labour market" (EUA, 2021). Focusing on meeting the needs of the market can tether the work of universities to the flow of the market and shift it away from its primary mission of training tomorrow's citizens. In this regard, however, EUA (2021) points out that "employability does not necessarily mean being employed by a company or industry in a defined field of work: it is broader as a concept, and also covers social activities, such as engaging with local communities". In line with this idea, EUA (2021) concludes that there should be no conflict between these two views and that it is important to find a way to unify them.

This tension disappears naturally if universities are incorporated into the ecosystem, into the community, where everyone works towards the same goals: progress, growth, sustainability and equality. Based on the ideas of Albert Cañigueral, Argemí (2020) explains it thus: "The future [...] must be built on everyone's contributions from their own spheres of power. If not, it will be built without us and, even worse, against us. In the future, if we do our best, the focus will be on communities and not on individuals, on collaboration and not on competition; a place where synergies will be combined and resources harnessed." This idea ties in with the triple helix model, which seeks to coordinate academia, industry and government and which later evolved into the so-called quadruple helix, which also included civil society and the media, and the quintuple helix, which incorporated the environment (see the chapter Knowledge on research and innovation). All these actors must work together within the framework of the ecosystem.

Fitó (2020) also proposes a very clear approach in this regard; an approach in which the university is part of a network where exchanges between university and community and, within the latter, the workplace, are constant and fluid: "The focus on new employability requires a more permeable university that maintains constant dialogue with the other inhabitants of the ecosystem and opens classrooms to professionals with a teaching profile or moves learning out of the classroom."

Consensus on the role of the university in fostering social progress through employment was laid bare in the Bologna declaration more than 20 years ago. Employability today has become more complex, unstable and uncertain, which makes it necessary to identify fresh perspectives, including the systemic perspective: "Universities must reposition their own role within an ecosystem of knowledge production and dissemination whose dynamics are increasingly complex, where this knowledge is shared through multi-stakeholder hierarchical structures, in the form of a network" (Fitó, 2020). The author also stresses that "this transition to an ecosystem-based vision in which universities no longer have a monopoly on generating and transmitting knowledge, but instead play a privileged role in which they connect and catalyse the various expressions of that knowledge, can and should be used to generate employability".

Dual training, which is well established in countries such as Germany and France, is one of the formulas that seek to move in this direction. The principles of dual training are clear, says Vilalta (2021):

> To recognise a single period of training, designed and built jointly by the university and company (and delivered in both an academic and a professional training setting); conducted in a coherent, structured and organised way between the university and the company or institution; guidance and dual tutoring (an academic tutor and a professional tutor from the company); an employment contract for the training (specific for dual training as an apprentice); and formal recognition that sets out all professional qualifications, and not just technical skills, and an explicit mention in the official degree certificate (Vilalta, 2021).

These approaches call for internal coordination between higher education institutions, in addition to coordination with the rest of the ecosystem: "To make employability a horizontal matter across the institution, a fine-tuned coordination and continuum is needed between and within study programmes, academic faculties and departments, and different support units (the university's career development office, units in charge of work placements, quality assurance units, etc.)" (EUA, 2021).

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1.3 Citizens. Promoting humanist values and profiles in a changing world

1. Redefining the human experience: the pathway to change

The race to have more, earn more, achieve success and be the best has shifted the focus from the individual as part of a group towards competition between members of the group. We accumulate things instead of sharing them and we compete against each other instead of cooperating, all based on the belief that our resources are unlimited.

The world we inhabit is facing vast imbalances and profound changes: the climate emergency is calling the production system into question; political crises are emerging everywhere, sometimes giving rise to authoritarian governments and diverse wars; the Covid-19 health crisis has taken precedence over everything and everything else has been put on hold, thus casting doubt on many of the models used to govern countries and the relationships between them; advances in science and technology are making it imperative to carry out joint reflections on the impact of the new paradigms that are emerging; we are advancing an ever-increasing rate, but the signs of a sick society are everywhere. These changes, which are caused partly by individualistic zeal and excessive accumulation, require that the human experience be redefined and a new relationship between humankind and the environment be created. As GUNi explains (2019):

> These [societal] changes are presenting transcendental challenges in terms of thinking and rethinking the meaning and value of human experience, and even of what it means to be human, as individuals and in relation to other people and with nature, now and in the future, and so we need to reflect critically and rationally, including from human emotionality (GUNi, 2019).

Against this backdrop, people are sounding the alarm about the risks of abandoning cooperation in favour of competition, since it has destroyed the ethical structure that humanity has been building for millennia. The concept of freedom has been used as an excuse to break all boundaries and lift the barriers of individual desire to prioritise the law of the jungle. In this context, the reconstruction of a universal ethic is absolutely critical, even more so when one considers the dangerous contradiction that exists between humanity's increasing capacity for innovation and, thus, for destruction, and the obliteration of the ethical rules that made it possible to set limits on these capabilities[1].

As explained by philosopher Adela Cortina, a professor of ethics at the University of Valencia, "With a universalist ethical attitude [...] the cut-off for decision-making is the universal good, even if it needs to be built from a local level and, even more urgently, from the bottom up, by educating the younger generations in a global ethic" (included in De Paz Abril [2007]). Higher education institutions are also being called upon to adopt a key role in building this new paradigm, and the way forward also involves giving voice to the humanities. The humanities have enormous potential in this regard (Section 5), because they offer a more in-depth understanding of the environment, others and ourselves.

While the definition of this field is complex, debatable and widely discussed, we can say that *"the humanities are made up of a heterogeneous set of knowledge that is combined in order to study and reflect on the human condition in social, cultural and artistic terms"* (GUNi, 2019). The humanities are not about old and outdated knowledge; rather, they help us interpret the past, address the present and plan for the future through reflection that is intrinsically linked to humanness (Vilalta, 2020). The definition of the humanities includes "philosophy, language, literature, history, human geography, cultural anthropology, law, politics, religion and all forms of the arts (visual, musical and performing)", among other disciplines (GUNi, 2019). However, the humanities cannot be segregated into watertight disciplinary compartments or addressed in isolation; instead, they must be understood from a dynamic perspective and as part of a systemic relationship with science, technology and other fields within the framework of so-called knowledge ecosystems.

In light of all this, the following proposal recommends that higher education take on the challenge of shaping future citizens in the following three areas: interacting with the environment in a coherent and sustainable manner (Section 2); building constructive relationships with other members of the community (Section 3); and living a full life (Section 4).

1. This excerpt has been adapted from an unpublished text by Marina Subirats, a sociologist, public official and Catalan politician.

2. Learning to integrate into the environment

Redefining the human experience must involve establishing a sustainable relationship in harmony with the environment. The environment is the planet we inhabit. When we imagine a possible future, we cannot separate humans from the rest of the planet; rather, we must understand humanity as part of a larger system, the biosphere (Section 2.1). The environment is also the series of contexts in which our lives are immersed: the workplace, community, etc. These contexts are fluid and complex and, in this fast-moving reality, force us to learn to live with uncertainty (Section 2.2). Through observation, analysis and experience, the humanities help us learn about and understand this environment and, therefore, provide us with the tools we need to develop within it.

2.1 Humanity as part of the biosphere

The report Learning: The Treasure Within, also known as the Delors Report (Delors et al., 1996), proposes that learning be based on four pillars: learning to know, learning to be, learning to live together and learning to do. According to UNESCO (2015), these pillars require modification due to growing concerns about sustainability: *"Learning to live together, for example, must go beyond the social and cultural dimensions of human interaction to include a concern for the relationship of human society with the natural environment."*

At the same time, new schools of humanist thought have emerged, some of which have been classified as the environmental humanities, which focus on the relationship between humankind and nature for the sake of sustainable development. The environmental humanities are characterised by a *"connectivity ontology based on the need to integrate human development into ecosystems. Or, put another way, to adopt ecological, economic and social sustainability as a paradigm for development"* (GUNi, 2019). As Serenella Iovino, a professor at the University of North Carolina at Chapel Hill, explained at the European Humanities Conference held in Lisbon in May 2021:

> The environmental humanities are animated by the ambition of intervening in the understanding as well as in the ethical reframing of inhabiting the world. [...] The environmental humanities are animated by the idea that our species as well as our planet are not 'lonely' but are always already in a deep interchange. This implies that every form of politics must take into account this mutual belonging, this multiplicity, as well as the gaps of injustice among different species, or among members of the same species: ours.

The concepts of the environmental humanities are also addressed by UNESCO (2020), which makes specific proposals for education in the post-COVID era. The health crisis is "the latest in a series of developments which show us that our humanism cannot be as narrow as it once was. We cannot separate humanity from the rest of the planet and this must be born in mind as we work to shape desirable alternative futures".

2.2 A complex and uncertain world

If there is one adjective that keeps cropping up when defining the phenomena and contexts in which we are immersed, it is "complex"; there is talk of the complex reality, complex social challenges, complex professions, and so on. "Uncertain" is another word that is repeatedly used to define today's world. The world is uncertain, but we try to comprehend it, to grasp it: "Long before the pandemic hit, we lived our lives worried about safety and obsessed with avoiding all risks, which made us slaves to prevention. We clung to the certainties and dogmas that thwart any peaceful quest for the truth" (Jolonch, 2021). **Modern living requires that we embrace a multifaceted, changing reality, and higher education institutions must provide the tools needed to inhabit it and, even more importantly, to grow through it**.

Complexity, for example, requires a transversal approach in which the boundaries between disciplines are blurred and the humanities play a key role. At the third International Congress of Neuroeducation, Marina Garcés (2021) spoke about uncertainty and stressed that educational institutions must guide students on their journey to knowledge and wisdom, but also in their uncertainty and lack of knowledge; she also called upon teachers and students to learn to get lost together and to be unafraid to do so.

One of the most widely discussed subjects is how to deal with complexity and uncertainty in the workplace (see the chapter The future of work), and higher education must ensure that the employees of the future have the skills that are needed, such as knowledge of the context (society,

environment), critical and analytical thinking, interdisciplinarity, creativity and communication.

3. Learning to build as a community

We are not simply beings who have been dropped on a planet that we can dispose of indiscriminately; we are part of an ecosystem and we need to relearn how to live in balance. Likewise, we are not individuals who are independent from each other and have merely found ourselves in a particular place and time; we are social beings who live in a community where we create synergies that are crucial for evolution.

With this in mind, we must shy away from realities such as that described by Lozano (2021): "We live side by side, but we do not live together or communally, with connections that vary from person to person in the same institution (or in the same workplace). "On the contrary, we must live together. We must serve, help, welcome and accommodate each other. Likewise, against this backdrop of global and diverse coexistence, we need to be open to different ways of understanding the world and life, and we need to learn to accept differences and disagreements, since this is an essential part of living in a democracy.

3.1 A commitment to service and hospitality in a global world

We live in society and interact with each other in a network. This network, however, is not always synonymous with cooperation for the common good. In a world ruled by a global market that views individuals as tools for profit and is governed by the race to individual success, the network is often woven in line with criteria that have little regard for the bonds of coexistence. As indicated by Nussbaum (2018):

> If our institutions of higher education do not build a richer network of human connections it is likely that our dealings with one another will be mediated by the defective norms of market exchange. A rich network of human connections, however, will not arise magically out of our good intentions: we need to think about how our educational institutions contribute to that goal (Nussbaum, 2018).

Service and hospitality are essential for the construction of this network, and must be entrenched in all higher education bodies, processes and programmes and, above all, in the classroom. Marina Garcés (2021) defends the need to make education into the art of hospitality and to accommodate others' existence in the learning process, along with everything that defines and characterises this. We must learn to accommodate and serve others, and we must put the perception of universities and the people who form them at the forefront, as a service to society.

Furthermore, it is important not only to understand coexistence in terms of the immediate environment, but also to recognise this sense of coexistence on a global level, while eschewing centralist and neocolonialist perspectives. This is one of the ideas explored by Nussbaum (2018), who focuses on the need not only to recognise a global, diverse and plural citizenship, but also to take responsibility for it:

> Citizens who cultivate their humanity need, further, an ability to see themselves as not simply citizens of some local region or group but also, and above all, as human beings bound to all other human beings by ties of recognition and concern. [...] We neglect needs and capacities that link us to fellow citizens who live at a distance, or who look different from ourselves. This means that we are unaware of many prospects of communication and fellowship with them, and also of responsibilities we may have to them (Nussbaum, 2018).

The humanities are important allies to bring about these bonds; to create networks for enrichment and commitment to others; to build a diverse, global community that rejects centralist perspectives; and, ultimately, to focus on the development of the citizens of the future.

3.2 Coexistence, difference and diversity

Living together involves surrounding ourselves with different ways of thinking and acting. If we broaden our field of vision and look at the world as a whole, these differences expand and multiply. Democratic societies must be able to accommodate this diversity, accept these differences and incorporate conflicting ideas peacefully. However, in a highly polarised world fuelled by the phenomenon of fake news, this is becoming increasingly rare. As UNESCO (2020) warns, "The spread of misinformation and fake news [...] is now proving fatal for social life and human understanding, but is also literally destroying lives". The rise in fake news is particularly evident in social media, where bubbles inhabited by people who share the same ideas are created; these ideas are then fuelled in these spaces and give rise to even greater polarisation.

Lies, which are presented in high-impact, emotionally charged publications, catch us out because they allow us to cling to a single, clear and unwavering stance and give us a (false) sense of security. Accepting other views and nuances and being open to change and evolution is more uncomfortable and makes us feel insecure. Jolonch (2021) states that lies for the sake of false reassurance must be eradicated: "This is the challenge scientifically, ethically and politically: to tirelessly seek out the truth. Moreover, in a world of uncertainty, it is necessary to demand the truth in times of propaganda." A parallel idea is presented in The Economist, in an article that takes inspiration from Erasmus to defend the moderate path against extremist positions: "The 16th-century humanist should give hope to those who resist competing bigotries. Erasmus shows that moderates are right to warn about the awful consequences of extremism and intolerance" (The Economist, 2020).

All of this also involves adopting a critical view of one's own ideas and one's cultural and family beliefs. Kant taught us that a critical attitude can only be held by one who has awoken from a "dogmatic slumber" and matured, and who has the capacity for judgement and complete autonomy. Critical thinking could be encapsulated in these characteristics, which were highlighted by a more recent philosopher and educationalist, John Dewey. First, critical thinking is based predominantly on criteria much more than data, hence the word "critical"; in other words, it is more important to interpret than accumulate, to understand than assimilate, to know than simply inform. Second, critical thinking is based on the principle that everything human is processual, has a "history" and can therefore be understood and interpreted only if viewed in the context of its evolution. Third, in addition to being processual, everything human is essentially contextual; in other words, it can be understood only if elements of the context in which it exists and interacts are included in the analysis. Finally, critical thinking is self-correcting; that is, the thinker assesses whether it is working as it should and is willing to amend it at the slightest suspicion that it is coming up short.

Arne Jarrick (GUNi, 2019) addresses the importance of critical thinking in the field of higher education in the following terms: "Students ought to be trained to take independent views, but also to respect other's independent views and needs for self-esteem. But to avoid instilling an overly stubborn attitude among students, they should also be trained in self-distance and suspicion of their own truth-holdings." This critical view of one's own ideas is vital to embracing a common truth, which will be subtle, full of nuance and constantly transforming.

A critical attitude must be accompanied by a broad, inclusive view of the different ways of seeing the world. Plenty of voices have addressed this issue from a range of perspectives. GUNi (2019) emphasises the importance of incorporating "the different views of what we mean by 'human' and the environment in which life is developed". It also makes a point about equality and diversity, which should never be at odds with one another: "There is also a need for the humanities to analyse the very concept of 'equality', to prevent it from becoming contradictory to our commitment to diversity and reciprocity between cultures and ways of life." According to UNESCO (2015), meanwhile, "The right to quality education is the right to meaningful and relevant learning". If there are different ways of understanding life, there must be different ways of establishing what must be learned: "This implies hearing the silent voices of those who have not yet been heard."

The manifesto Knowledge, Action and Hope, which was presented in 2021 by the UNESCO Chair in Community Based Research and Social Responsibility in Higher Education, warned about the "loss of our global treasury of intangible cultural heritage of Indigenous languages, stories, songs and ways of knowing" and expressed the need for the "decolonization of higher education academic programming through an explicit recognition of multiple epistemologies and multiple forms of representing knowledge". Finally, UNESCO-IESALC (2021) proposes ways to achieve relevant learning in each context:

> The acknowledgement of multiple forms of knowledge and greater use of non-English languages can support this ambition. Contextually relevant knowledges will also help in settings where there are disconnects between what students learn from books and articles and the real challenges they face in their communities and societies. [...] Greater con-

textual relevance would also stem from research being able to move away from the current pattern whereby scientific communities and networks are dominated by a small number of HEIs that have historically had the power to define scientific norms and influence the types of research that are conducted (UNESCO-IESALC, 2021).

To recognise multiple epistemologies and expressions of knowledge and, even before that, to allow these epistemologies to be formulated and disseminated, it is essential to acknowledge linguistic diversity and the richness of languages as the content of, and contingent upon, knowledge and cultural heritage. In the framework of the Information for All programme, UNESCO (2021) states:

> Languages are unique tools that enable people to comprehend and describe the world, communicate and transmit knowledge; they are repositories of historical and social experience of nations, and act as socialization factors and means of human self-identification. However, almost half of the world's languages are facing the risk of extinction, while still more languages are facing the risk of losing their role in many fields UNESCO (2021).

Within the field of education, languages and linguistic diversity lie at the heart of the debate on the quality of learning, personal development and knowledge creation. "Research shows that mother tongue-based bilingual or multilingual education has a positive impact on learning and learning outcomes" (UNESCO, 2014). Therefore, **enabling meaningful and relevant learning implies protecting every language and giving it recognition as a vehicular language in education. At the same time, endangered or minority group languages are being preserved and promoted through multilingual education**, thereby safeguarding cultural richness and the world's linguistic and cultural diversity.

4. Learning to explore the individual

One idea that surfaces repeatedly in discussions about the future of education is the importance of cultivating the traits that make us human: "Being uniquely human" (Alfons Cornella, third International Congress of Neuroeducation); "learning how to be a human being capable of love and imagination" (Nussbaum, 2018), "[developing] abilities that are exclusive to the human condition" (Federico Mayor Zaragoza in GUNi, 2019), "the development of the whole person not just academic skills" (UNESCO, 2020). This idea gathers even more momentum in discussions on the rise of artificial intelligence; in the words of Cornella, "in a world with intelligent machines, our best option is to be human." This appeal to cultivate what makes us human places individuals (Section 4.1) and their emotions (Section 4.2) at the centre of the educational process.

4.1 Focus on the individual

Today's higher education institutions face a wide range of challenges, including disengaged students (Rouhiainen, 2019). Many students skimmed over content and activities in the classroom. The main goal of their presence in the classroom is to pass a subject or earn a degree. They approach their training from a professional point of view – which is no bad thing – but they are disconnected from anything deeper, what might called their purpose in life or their vocation.

Our vocation is the intersection between our calling, understood as our true passion, and service to society: "Education should encourage us to explore our purpose in life, and should not assume that we have arrived at university with a clear vision and that we simply need to be taught how to achieve it" (Lozano, 2020). Several authors have highlighted the need to explore this calling and fulfil it. According to UNESCO (2020), "It is important to develop a strong base of knowledge about one's self and about the world – twinned objectives that allow each of us to find purpose and be better able to participate in social and political life". In an article that focuses on historically black colleges and universities (HBCUs), Reinert Mason (2021) explains that the culture of service that is prevalent in many HBCUs "helps students look outside of themselves to find their passion and their purpose".

It is important to stress that our understanding of purpose and vocation is broad and can include interests that vary greatly in terms of nature and intensity. However, sometimes it might be more appropriate to refer to vocations, in the plural. Far from being restricted to people with a very clear, one-way mission in life, these concepts must be within everyone's reach, because everyone has passions that push them in one direction or another.

Students who are disconnected from the training process are the product of a profound disconnect between education and these vocations. It is essential to rebuild these links so that any changes to be made for society start with the individuals who form part of it. Seen from another point of view, it is vital to consider the group and the environment in this search for individuality and genuineness to escape the all-too-common tendency to play individual rights off against collective rights.

4.2 The role of emotions

It is now commonly accepted that we can only learn if our emotions allow it. However, western culture has traditionally underestimated emotions as a source of knowledge and considered them inferior, far less important than ideas and abstract reasoning (Subirats, 2021). Some authors point to the need to avoid resorting to overly cognitivist and rational models and to approach feelings in a more genuine way: "Ever since we started talking about emotional intelligence and then later about emotional education, [...] emotional education has been applied on the basis of reason, whereas neuroscience has contributed significantly and tells us that emotions are felt. We don't think, we feel" (Timoneda, 2021).

Art, painting, literature, music, theatre, film, photography, sculpture, etc., play a central role when focusing on emotions. Riestra Puga (2020) **explains that artistic and creative processes represent a transversal educational tool that opens doors, not only to connect with emotions, but also to focus on other skills such as observation, reflection, imagination and the search for solutions:** "Creation connects us with ourselves and others in an experience that brings emotion and learning together. And that's exactly what education needs, more emotion, which is definitely the best stimulus to learning."

If students learn from emotion, they can acquire the tools they need to structure not only their knowledge, but also their life balance, and they enjoy themselves in the process: "Education based on emotions seeks wisdom linked to enjoying life to the fullest, in conjunction with the enjoyment that is achieved with the acquisition of learning" (De Alonso Paz, 2021). Indeed, the pursuit of this well-being is one of the priorities, along with human interaction, set out by UNESCO (2020) for the future of education.

5. The humanities today

Humanities, "made up of a heterogeneous set of knowledge" and disciplines (GUNi, 2019), provides us with tools to observe, analyse and interpret the context around us; it encourages us to explore ourselves through art, creation and emotions; and it enables us to communicate, collaborate and create networks for coexistence. Because the humanities are not always directly linked to productivity and the goals of a market that governs us, however, the field has been overlooked by higher education and education in general. Martha Nussbaum calls this phenomenon whereby the humanities and arts are disappearing "from both the curriculum and the hearts and minds of parents and children" a silent crisis of education and warns that "this passion for profit in the global market means that we run the risk of losing precious values for the future of democracy" (Nussbaum, 2011, p. 16). However, she points out that **both economic interests and the promotion of citizenship require the same skills, which are rooted in the humanities, so it is necessary to connect knowledge and forms of education "to promote a climate of responsible and attentive management and a culture of creative innovation" (Nussbaum, 2011, p. 26)**.

In reference to the report Change and Cohesion Towards 2030: Humanistic Initiatives from the Danish Association of Masters and PhDs, Myklebust (2021) stresses the importance of including humanities scholars in discussions on seven thematic areas: future climate solutions; culture and unity towards the grand challenges; satisfaction and technology in higher education; democratic values and digitalisation; family welfare and gender equality; better health communication and greater equality; and active intervention against religious polarisation. In addition, echoing the words of David Budtz Pedersen, Myklebust (2021) says, "Now is the time to convince policy-makers that the humanities are making important contributions to society, democracy and policy-making across complex challenges such as health, climate, security, education, digitalisation and democracy" and adds that "most public decision-makers are indoctrinated with a blind belief that the economy and the market are the most suitable tools for making prognoses for rational behaviour. But the truth is that democracy is a much stronger mechanism for creating sustainable and responsible changes".

In this context, it is necessary to study how the humanities can meet current needs, rather than clinging to them as if they were the saviour of all today's evils or hanging onto a nostalgic vision of what they used to be. It is necessary to interweave them with modern needs and, from there, reflect on the role they should play in higher education:

> We go beyond these two opposing extremes, for we are working from the idea that humanities are neither a residual heritage that needs to be protected, nor a drug or a remedy to counter the devastating effects of other areas of society. Quite the contrary, the humanities are part of making sense of human existence and our shared experience and, therefore, of the political and social lives of contemporary societies, within them, between them and in their relationship with the natural environment (GUNi, 2019).

In this context, it is important to explore what traditional elements of the humanities must be brought into today's classrooms and what new elements must be incorporated. The path of humanistic culture must not only not be lost; it must be restored and expanded so that traditional content and new content can travel the path together. Traditional content encompasses the classic literary and philosophical roots, passion for freedom and, at the same time, for social commitment, and strong ethical values and public-spiritedness. New content includes analysis of scientific progress from the Renaissance to the present day, relativistic and quantum physics, evolutionary biology and biomedicine, communications technology and the many fruitful accomplishments of science and technology; the importance of the linguistic turn in contemporary philosophy; and analysis of the great literary, visual arts and musical productions of today. The humanist attitude is not exclusive, but inclusive; it is not against progress, but views it with a critical eye and the ability to marvel[(2)]. In this regard, it is also important to emphasise the key role of technology in the humanities. The relationship between the digital transformation and the humanities is discussed in the chapter The digital-human future.

We must also look beyond the traditional, centuries-old humanism, which was patriarchal, Eurocentric and linked to Christian values. In fact, as GUNi (2019) explains, "Right now, the strongest philosophical, aesthetic, technological and other schools of thought have made a stand either for or against humanism. Hence the debates on trans-humanism, post-humanism, anti-humanism". In the same Higher Education in the World Report, Prieto and Prats (2019) state that there is a link between knowledge and the patriarchy, as the foundations of humanist notions emerged within the patriarchal framework. Therefore, the mainstream sciences, humanities and knowledge were defined from a male perspective.

However, "feminism and gender studies have now for decades been producing and contributing essential work for repairing the damage caused by humanistic patriarchy" (GUNi, 2019). This transformation process transcends debates concerning how many hours should be devoted to these subjects and the specific contexts in which they should be taught. It also transcends methodological discussions. The shift towards depatriarchalised knowledge, free from established patterns of power and hierarchy, requires a thorough reassessment and a shift in attitude towards the epistemological paradigm of science, humanities and, by extension, education (Prieto & Prats, 2019).

If one issue is clear in discussions revolving around the role that the humanities must play today, it is the need to incorporate these disciplines into the framework of transdisciplinary projects and programmes. In fact, European policies have further strengthened the commitment to interdisciplinarity and the social sciences and humanities. The reality is complex and there are no boundaries between disciplines. Addressing modern-day problems can only be done by humanities in dialogue with science and technology: "Specialistic studies can be a useful strategy to improve employability. However, in order to respond to complex social challenges and prepare students for complex professions, a solid generalistic background with a strong transversal presence of the humanities seems to be a better option", suggests Susanna Tesconi, an expert in the interaction between learning processes and technology and a professor at the UOC (GUNi, 2019). Maria Teresa Cruz, Associated Professor in the Communication Sciences Department of NOVA University of Lisbon spoke about an "interdisciplinary academy of the human" at the 2021 European Humanities Conference.

Another way to approach this issue is through knowledge ecosystems. This concept focuses on the fact that it

2. This excerpt has been adapted from an unpublished text by Joan Manuel del Pozo, professor emeritus of the UdG.

is not simply a matter of crossing boundaries between disciplines or juxtaposing and overlapping knowledge and methodologies. Rather, it is important to stop thinking in terms of knowledge areas and start thinking in terms of the problem; in other words, "looking at issues rather than looking from disciplines", as expressed by Xavier Prats, former Director-General of Education and Health at the European Commission, in an interview for Fixing the Future in December 2020. Only with this holistic, dynamic perspective, which in no way requires that the specific characteristics of each knowledge area be neglected, will we be able to respond to the challenges of the future.

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1.4 Knowledge. Putting research and innovation at the service of social challenges

1. Sustainability in research and innovation: from need to opportunity

Knowledge is emerging as the most crucial factor for progress, well-being and, at the same time, the competitiveness of our societies to the point that they are becoming so-called knowledge societies (Bindé, 2005). The meteoric pace of vaccine development in the context of the Covid-19 health crisis is a very recent example that demonstrates that knowledge, in the form of research and innovation, is a key component of progress. Moreover, the health crisis has shown that the means of solving these great challenges must involve responsibility, in a global sense, towards the planet and the people who inhabit it, and collaboration. In this regard, YERUN (2020) highlights the importance of extending the Covid-19 experience of collaborative research to other areas:

> Research strengths are currently scattered among countries and institutions. Centralising all efforts and research capacity is not an easy task, but it becomes crucial for increasing and speeding up research collaborations. That is the case with COVID-19 research that has witnessed the creation of specific platforms in which all available research outputs are put together. That should be extended to other research disciplines and areas (YERUN, 2020).

Higher education institutions are being called upon to play an essential role in this process, in the framework of stable and coordinated work with society, governments and industry. As pointed out by EUA (2021), "universities will play a leading role in innovation ecosystems. They will bring together stakeholders around a common vision, bridging different cultures spanning from academia, business and start-ups, to civil society and the social and cultural scene".

The theory of the triple helix formulated by Etzkowitz and Leydesdorf (1995) refers to the need for coordination between academia, industry and governments to achieve innovation. In this interaction, universities and knowledge creators, together with local, regional and national governments, are involved in the development of industrial policies (Galvao et al., 2019). The triple helix model has evolved over the last 10 years and given rise to the so-called quadruple and quintuple helixes, which present a broader, more inclusive vision. The former was expanded to include civil society and the media and, more recently, the latter incorporated the environment. As indicated by Galvao et al. (2019), the quintuple helix focuses on the essential evolution of society and the economy towards sustainable models from a social and environmental point of view; in other words, it is an "ecologically sensitive" model.

When we envisage a possible future, research and innovation must go hand in hand with sustainability and cooperation. But we must go further, since sustainability must be regarded not only as a need but, more importantly, as an opportunity for growth: "the natural environments of societies and economies must also be seen as driving the production of knowledge and innovation, thus defining opportunities for the knowledge economy" (Galvao et al. [2019], citing various authors). In the framework of progress and innovation ecosystems, universities must play a leading role to ensure an orderly transition towards these transformations.

Achieving all this involves flipping certain aspects of the traditional approach to knowledge and incorporating research and innovation. It is necessary, in the first instance, to build bold, stable bridges between science and society (Section 2). It is also necessary to put in place the means to transform knowledge into innovation (Section 3). Addressing future challenges requires entrepreneurial, transdisciplinary universities (Section 4). Moreover, sharing and cooperating in research and innovation, and opening them up to the world, is key (Section 5), as is attaching importance to all matters that go beyond traditional research through renewed assessment criteria in the academic field (Section 6).

2. Building bridges between science and society

The gap between scientific development and society has been a latent challenge for decades. Many voices are calling for society to become more involved in research and innovation; for social actors and civil society to become involved in the decisions that define the fields and direction of research and innovation for sustainable growth. Universities must play a fundamental role here, as highlighted by EUA (2021): "Europe's universities will make human-centred innovation their trademark, aiming to achieve sustainability through cooperative models."

Within this framework, Ferrer-Balas (2011), in reference to a proposal by Gibbons et al. (1994), made a distinction between Mode 1 science and Mode 2 science. Traditional or Mode 1 science is academic, investigator-initiated, discipline-based and underpinned by knowledge production. Meanwhile, Mode 2 science, which emerged in the mid-20th century, is context-driven and problem-focused. These problems are characterised by uncertainty and complexity, and require collaborative and transdisciplinary work. In this regard, Messerli et al. (2019) highlight that competition and meritocracy must be put aside to work in a cooperative way, and point out "the urgently needed shift from individual – and individualistic – research modes to cooperative transformation-oriented approaches".

Lafuente (2020) also discusses this topic in reference to the fact that Covid-19 has highlighted the need for a new social pact for science: "What society demanded of scientists [...] was no longer reliable knowledge in exchange for resources to ensure their independence of judgement. What society required for the new millennium was a declaration of their willingness to take charge of the world's problems." The work of scientists must serve to promote peace and the public good and redress asymmetries: As highlighted by the author, "The innocence party was over for scientists".

This desire has taken shape in several initiatives in recent years. In 2014, the Rome Declaration on Responsible Research and Innovation defined RRI as "the ongoing process of aligning research and innovation to the values, needs and expectations of society". It also stated that "RRI requires that all stakeholders including civil society are responsive to each other and take shared responsibility for the processes and outcomes of research and innovation" (GUNi, 2017). RRI has become a key concept in the international sphere, along with open science, citizen science, sustainable science, science with and for society (SwafS), participatory research and co-creation.

Closer integration between science and society and, more specifically, between the different stakeholders calls for reciprocal relationships in which the other's point of view is taken into account; shared values are, therefore, vital. In citing several authors, Werker (2020) explains that, in RRI, jointly acceptable solutions in research and innovation must be based on shared values:

> Developing shared values about the process and outcomes of research and innovation requires integration of the values of all relevant stakeholders [...]. While the values of stakeholders can substantially differ, shared values can only emerge if stakeholders eventually agree on them (Werker, 2020).

Another initiative that aims to raise awareness of the contribution of research and innovation to the challenges facing society today are so-called Missions, a new component of the Horizon Europe programme. As explained by Mazzucato (2018), "Mission-oriented policies can be defined as systemic public policies that draw on frontier knowledge to attain specific goals". According to the same author in a later publication, "Rather than focusing on purely technological problems, we can focus innovation efforts to solve societal challenges that involve technological change, institutional and behavioural change and regulatory change" (Mazzucato, 2019).

The manifesto *Knowledge, Action and Hope,* presented by the UNESCO Chair in Community Based Research and Social Responsibility in Higher Education (2021), makes numerous references to the creation of bridges between science and society. It advocates, for example, for "deepening our understanding of knowledge democracy as a fundamental framework for transformative change", as well as "increased opportunities for all students to be able to learn about democratic approaches to research in theory and in practice". Moreover, it supports the creation of structures and policies to incorporate community-based research as an integral part of academic careers.

It is also worth highlighting a series of movements that are helping change society's role in the field of innovation. Science Shops, for example, are defined by the International Science Shop Network (Living Knowledge, n.d.) as "small entities that carry out scientific research in a wide range of disciplines – usually free of charge – on behalf of citizens and local civil society". This network also explains that "the fact that Science Shops respond to civil society's needs for expertise and knowledge is a key element that distinguishes them from other knowledge transfer mechanisms". A second initiative is Fab Labs, which, "from community based labs to advanced research centers, [...] share the goal

of democratizing access to the tool for technical invention" (Fabfoundation, 2022). Meanwhile, the Maker Movement (Xataka, 2018), whose motto is "Do it yourself. Do It Together", is a movement that brings together people with diverse profiles who are interested in technology and open source.

3. Turning knowledge into innovation

Research is an activity that naturally drives innovation, since it involves new, more efficient solutions to social or business-related problems and demands. Within this framework, it is widely accepted that striking a balance between knowledge generation and innovation capacity is crucial, although transferring research results and knowledge to innovation and the development of responses to societal challenges is often complex. In contexts with a shortage of research, it is virtually impossible to find examples of knowledge transfer and innovation. However, in contexts such as Europe, where a large volume of research is available, the reality is that a balance has still not been struck between knowledge generation and innovation capacity.

In the Green Paper on Innovation, the European Commission encapsulates the concept of the European paradox, which reflects Europe's failure to transfer its leadership in research to innovation. Almost 30 years later, the European paradox has not been resolved and variations have emerged, including the European AI paradox, which refers to the fact that, although Europe continues to play a leading role in artificial intelligence on an academic level, none of the major AI companies is European, explains Almirall (2021).

Transfer and innovation lie at the core of current European policies in an effort to reverse this trend. In this regard, one of the primary goals of the European Research Area is to "transfer results to the economy to boost business investments and market uptake of research output, as well as foster EU competitiveness and leadership in the global technological setting" (European Commission, 2020).

In reference to implementing this desire for innovation, Almirall (2021) states that the connection between university teachers and companies is not enough; it is vital to create a series of incentives for applied research and invest in applied research centres in universities in contact with companies, European or international projects and the local ecosystem. Torrent-Sellens (2021) focuses on the incentives of academics to carry out transfer and entrepreneurial activities, the need to reduce the bureaucratic hurdles often involved in entrepreneurship, and the crossover between knowledge areas and actors within the system.

An example in this regard lies in the RUNIN project (The Role of Universities in Innovation and Regional Development [2022]), which focuses on training academics on how universities can contribute to "innovation and economic growth in their regions through research seeking to examine how universities fulfill their third mission in relation to regional industry and explore the range of university engagement with regional firms and institutions".

In addition, one of the new components of Horizon Europe, the EU research and innovation framework programme (2021-2027), is the European Innovation Council, which provides support for "innovations with potential breakthrough and disruptive nature with scale-up potential that may be too risky for private investors" (Directorate-General for Communication, n.d.). Almirall (2021) highlights the need to welcome these risky projects when he explains that, in relation to applied research centres, "it is difficult to run radical innovation projects and also long-term projects that fall outside the time frames set by industry". Thus, innovation agencies are seen as playing a vital role in leading projects that do not arise naturally in industry, but can have an impact on the desired future. This idea is also reflected by EUA (2021), which states that universities must also make room for "lateral thinkers, who test and develop new ideas that are not yet acknowledged by fellow researchers or by society at large".

In short, the knowledge economy has the potential to foster the continued creation of research and its transfer to innovation. To that end, industry and science policies must be aligned, so that the demand for knowledge drives research and research gives rise to innovation development.

4. The new university: entrepreneurial and transdisciplinary

"The role of the university has continued to evolve along with the underlying economic forces shaping economic growth and performance." According to Audretsch (2014), the university is one of society's most resilient institutions due to its "ability to both adhere to its traditional strengths as well as adapt to the needs and concerns of society". Within this framework, the author presents the concept of the "university for the entrepreneurial society", which emerged from the link between universities and companies, between research and innovation. A parallel concept would be, for example, "academic entrepreneurship", which seeks to define the new entrepreneurial dimension of universities (Galvao et al., 2019).

According to Audretsch (2014), with the emergence of the "entrepreneurial economy", where entrepreneurship is the driving force behind economic growth, "just undertaking scholarly research in basic disciplines did not suffice in generating sufficient knowledge to contribute to economic growth and performance". The result, in the first instance, was the "entrepreneurial university", which aimed to "create new interdisciplinary fields and research areas devoted to providing solutions to specific societal problems and challenges". In particular, the entrepreneurial university aims to create innovative companies and promote knowledge transfer from universities to companies in the form of patents and start-ups.

The entrepreneurial economy was followed by the entrepreneurial society: "While the entrepreneurial university has a mandate to facilitate the commercialization of university research and generate startups and new ventures, the role of the university in the entrepreneurial society is considerably broader and more fundamental – to provide thinking, leadership and activity to enhance entrepreneurship capital." What distinguishes the university in the entrepreneurial society from the entrepreneurial university is the scope of its mission, which is more global and inclusive.

Integrating universities into the entrepreneurial society requires, firstly, the involvement of the entire institution and, secondly, transversality. In this regard, Audretsch (2014) explains that "something of a dichotomy emerges for the entrepreneurial university with certain parts of the university contributing to the commercialization mission while other parts alienated or at least not participating in this mission". By contrast, with respect to the university's contribution to the entrepreneurial society, "many if not most aspects of the university contribute to the generation of entrepreneurship capital, if not explicitly then through an orientation enhancing and celebrating freedom of inquiry and creativity but also with an awareness these values have beyond the walls of the university".

Closely related to the idea of the entrepreneurial university is the concept of the transdisciplinary university. These two concepts have different perspectives and different mechanisms, but both seek transversality, cooperation and a global, inclusive vision of the world's problems with a view to finding solutions. Moreover, both strive for a profound transformation that must be progressively implemented in higher education and HEIs.

As Max-Neef (2005) explains, the structure of the vast majority of university faculties, departments and centres revolves around isolated disciplines. This encourages a single-discipline approach to training, especially at undergraduate level. Likewise, the concept he calls the "transdisciplinary university" does not exist; instead, the best-case scenario is that interdisciplinarity is expressed in isolated and/or marginal experiences and efforts, rather than in an comprehensive change in the university structure.

Max-Neef (2005) defines transdisciplinarity as a pyramid: at the base are empirical disciplines ("what exists") such as physics and sociology; immediately above is another group of disciplines that constitute the pragmatic level ("what we are capable of doing"), including engineering and agriculture; the third is the normative level ("what we want to do"), which includes disciplines such as politics and environmental design; finally, the top of the pyramid corresponds to a value level ("what we must do" or rather "how to do what we want to do") and is occupied by subjects such as philosophy and theology. In a simplified, practical application-based vision of transdisciplinarity that the author calls "weak transdisciplinarity", this is the result of coordination between all hierarchical levels.

The complexity involved in our relationship with the world requires complex and inclusive thought that only transdisciplinarity, understood here as "strong transdis-

ciplinarity", can help us achieve (Max-Neef, 2005). In this regard, transdisciplinarity is actually a new, systemic and holistic way of viewing the world. If we do not make this paradigm shift, departmental knowledge and fragmentary visions will continue to generate partial responses that end up damaging society and nature. Thus, effective change needs to come from the university itself through action and cooperation between academics from different disciplines towards the study of subjects in an integrated way (Max-Neef, 2005).

5. Opening up science and innovation

If we want a future society that is human, liveable and, ultimately, sustainable, we must think beyond global information and knowledge societies to become societies of shared knowledge (Bindé, 2005). Shared knowledge needs to play a key role in the development of research and innovation capacities in a world that must be egalitarian and respectful of the environment.

On this basis, open science was conceived and has evolved in recent years alongside open innovation, which helps exploit the results of the former with a view to creating socioeconomic value. Open science and innovation are gaining momentum due to their convergence with another global trend, the emergence of digital technologies (see the chapter The digital-human future), which are making mass participation and collaboration in innovation possible. As indicated by the European Commission (2016), "the speed and scale of digitalisation are [...] enabling new innovation processes and new ways of doing business, introducing new cross-sector value chains and infrastructures".

The basic principles of open science and innovation are broadly shared. They include open access to knowledge, access to shared research and innovation infrastructure, cooperation within the framework of knowledge ecosystems, and promotion of diversity to grow together and to grow better.

Open access to scientific knowledge (scientific publications, open research data, open source software and source code, and open hardware) and dissemination of scientific knowledge are two of the pillars of open science (UNESCO, 2021). Within this framework, the European Union and several national funding agencies have made open access a prerequisite for the scientific publications they finance. In addition, Horizon Europe also refers to its open science policy as mandatory open access to publications and the application of open science principles throughout the programme (Directorate-General for Communication, n.d.).

In *Universities without walls:* A vision for 2030, EUA highlights the need for HEIs to support non-commercial publishing systems by proposing the following scenario:

> Universities will support a diverse non-commercial publishing system and will, themselves, be directly involved in such a system, by promoting and supporting non-commercial and smaller publishing initiatives. Data and other outputs resulting from research will be made FAIR (Findable, Accessible, Interoperable, Reusable) (EUA, 2021).

It is also worth highlighting that open science has been incorporated into research practices, thereby encouraging a shift in the approach to research activity, from a desire for rapid and exclusive publication towards a tendency to share results and data in stages prior to the final publication (European Commission, 2016).

YERUN (2020) highlights the impetus given to shared knowledge in the context of the pandemic and stresses the need to extend this practice beyond Covid-19 research. The opportunities created by open science have been demonstrated and momentum towards this approach is already a reality. Institutions and policymakers need to provide resources and invest in training and the adoption of practices with a view to fully and effectively implementing it.

In terms of infrastructure, one of the current goals of the European Research Area is precisely to improve access to excellent facilities and infrastructure for researchers across the EU. In this regard, the European Commission (2020) describes the inequalities between member states in terms of research and innovation, which give rise to gaps in excellence, knowledge transfer and innovation that must be bridged.

Mariya Gabriel, Commissioner for Innovation, Research, Culture, Education and Youth at the European Commission, recently advocated for the importance of cooperation within the framework of the ERA:

> We live in times when scientific activities require faster and effective collaborations. We need to strengthen the European Research Area. An area embracing all of Europe, because knowledge has no territorial boundaries, because scientific knowledge grows with collaborations, because knowledge is trusted if there is open scrutiny of its quality (European Commission, 2020).

In this regard, the objective of open innovation is to allow all stakeholders in the innovation process to participate so that knowledge can enjoy effective freedom of movement and translate into products and services for new markets, thereby encouraging a culture of entrepreneurship (European Commission, 2016). It should be noted that the concept of open innovation is constantly evolving and is moving from linear, bilateral transactions and collaborations towards dynamic, networked, multi-collaborative innovation ecosystems. This means that a specific innovation can no longer be seen as the result of predefined and isolated innovation activities, but rather as the outcome of a complex co-creation process involving knowledge flows across the entire economic and social environment (European Commission, 2016).

All actors, whether public or private, whether in academia or business, whether public authorities or civil society, are called upon to participate in this process, with a constant focus on the needs of society and the world we inhabit. In this network, it is vital to create a citizen/user-centred approach, as "an invention becomes an innovation only if users become a part of the value creation process" (European Commission, 2016).

Another key issue in this path towards the development of shared knowledge systems is the focus on diversity, especially in terms of pluralism in geographical sites and modes of knowledge production as fundamental building blocks for inclusive societies (UNESCO Chair in Community Based Research and Social Responsibility in Higher Education, 2021). UNESCO (2021) points to the need to initiate dialogues to promote the inclusion of knowledge from traditionally excluded sectors such as indigenous knowledge.

The future must involve opening up science and innovation so that it takes place in an environment of cooperation and shared progress. And, in this framework, universities and higher education institutions can exercise power and play a unique role (Ayris, 2021).

6. Assessment: beyond the metrics

While assessment has been based increasingly on quantitative parameters, such as the number of publications, impact factor and global rankings (Hicks et al., 2015), indicators should never replace expert judgement and qualitative assessment. Rather, indicators should be used to support the assessment process, which must address aspects such as scientific integrity, creativity and the contribution to science and society. Given the increased power of data over the direction of science, it is necessary to stress that decisions must combine the robustness of statistics and metrics with qualitative attention to the objectives and nature of the research being assessed (Hicks et al., 2015).

In this regard, Khoo (2021) calls into question excellence as we understand it today in the academic field, since "excellence is over-reliant on global measurement, rankings and league tables which drive excellence towards zero-sum contests". Thus, it refers to the need for a broad, multidimensional approach to quality in higher education that encompasses issues such as "equity, purpose, inclusion, critical independence and creativity that are necessary for the production of scientific, cultural and public value".

Along with this desire to expand the viewing angle in research assessment, it is also necessary to include diversity in the mission, in addition to geographical and social diversity (Hicks et al. 2015). Scientists have different research missions; sometimes their goal is to push the boundaries of knowledge, while at other times their focus is on solving specific issues of the day or problems affecting modern-day society. Thus, according to the author, the assessment process should also consider merits relevant to policy, industry or the public. With respect to geographical and social diversity, in many parts of the world, research excellence is equated with English-language publication and the "pluralism and societal relevance tends to be suppressed to create papers of interest to the gatekeepers of high impact: English-language journals. [...] Metrics built on high-quality non-English literature would serve to identify and reward excellence in locally relevant research" (Hicks et al. 2015).

In reference to academic assessments in general, beyond research, the Association of Universities in

the Netherlands (VSNU, KNAW, NFU, NWO & ZonMw, 2019) highlights the one-sided focus on research performance, which frequently leads to the undervaluation of other key areas such as education, impact and leadership. This is partly due to the implicit and overly one-sided emphasis on traditional, quantifiable output indicators. In this context, it proposes that a new balance be struck when it comes to recognising and rewarding academics with a view to improving the quality of each of these key areas: education, research, impact, leadership and (for university medical centres) patient care. The assessment system must be adapted and improved in each of these areas and in the connections between them.

Along similar lines, Amat (2021) says that teachers' incentives must be improved through accreditation systems for teaching innovation and knowledge transfer, and these accreditations should have a clear impact on recruitment and promotion. According to the author, three avenues for recruiting teachers could coexist: the first based on research excellence, the second based on excellence in teaching innovation and the third based on excellence in knowledge transfer. In all cases, a good research profile would be required, but in each avenue, the excellence would be focused on one of the three dimensions.

Hicks et al. (2015) highlight the fact that abuse of research metrics has become too widespread to ignore and, in a way, is evolving from a means to a target. It is essential to reinstate the view of experts; in other words, qualitative criteria. Likewise, it is essential to expand the viewing angle in assessment processes to include diversity and all tasks that make HEIs indispensable institutions in addressing the problems facing humanity.

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1.5 The digital-human future. Constructing more inclusive and accessible universities

1. Towards a new paradigm

We are facing a paradigm shift in which digital technologies are gaining increasing importance in higher education, reshaping teaching methodologies and even the way we understand university training. As Govindarajan, Srivastava and Enache (2021) stated, the prevalent scenario in university education for centuries "required students to come together at a predetermined time and location to be taught at an instructor-led pace." Online educational alternatives, such as massive open online courses that take advantage of innovations in communication technologies, have changed this model. Consequently, digitalisation has called into question the space and time of training.

The European University Association (EUA) (2021) has described "universities without walls", in which "the virtual campus will make the university ubiquitous. It will be developed to improve access for all to participate in research and learning, enhance cooperation, and explore new, innovative ways of pursuing university missions." According to Govindarajan, Srivastava and Enache (2021), digital technologies "have matured to a point where they can cause disruptive changes to the age-old college education model."

The Covid-19 health crisis has accelerated this trend. The unexpected shift to online classes, which was not always sufficiently informed and prepared, was a leap of faith and a step forward. Millions of simultaneous experiments took place worldwide: "tectonic shifts in society and business occur when unexpected events force widespread, coordinated experimentation around a new idea," explained Govindarajan, Srivastava and Enache (2021). Many difficulties emerged, especially in the early stages of the pandemic, but the lessons learnt and experiences gained have clearly revealed the potential of technology in the classroom. According to the same authors, "college education that's known more for its rigidity and resistance to change received an unprecedented jolt, and the resulting experiment showed that not only are there alternative ways of teaching, but that in some ways, those alternatives are even better."

At the current time, sufficient maturity of digital technologies has coincided with their considerable momentum due to the health crisis. Digital technologies clearly have great potential in higher education. However, they must be put in the right place in this process of educational disruption. They must be considered a support, another piece in a large network that enables us to advance and construct the education that the world of today needs. In other words, they must be situated in the framework of what are known as digital ecosystems for learning and educational management: "we refer to equipping ourselves with the technological tools that enable us to support all the processes associated with the activity of an educational context" (Martí et al., 2018). In this framework, in September 2020, the European Commission presented the "Digital Education Action Plan" (2021–2027) with the main objective of "fostering the development of a high-performing digital education ecosystem" (European Commission, 2020).

Section 2 below presents digital technologies not as an end in themselves but as a means to construct a universal, inclusive, efficient education. Section 3 expands on some of the topics from Section 2 and discusses online, face-to-face and blended models. Section 4 focuses on artificial intelligence and digital humanism, and the relationship that is established between them in educational debates, where it seems clear that the centre of all changes should not be the desire for innovation and the possibilities of technology per se, but humanity's needs in relation to the planet on which we live. The last section, Section 5, discusses digital citizenship education as a right for all and a priority of education systems worldwide.

2. Digital technologies as a medium

"Online education" and its variants, including "online instruction", "online teaching", "distance education" and "distance learning", are concepts that cover a wide range of phenomena. Their definition depends on their use in each context. They could refer to a traditional distance education using new technologies or to e-learning with a strong technology-based approach; they could involve synchronous and asynchronous solutions; or they could be understood as a simple replica of classroom lectures, usually based on video lectures, as a PDF delivery model or as an accessible repository of documents (Sangrà, 2021). Cohn (2021) refers to this variability and the resulting confusion: "the term 'hybrid' especially continues to confuse in light of the myriad options that colleges and universities are offering students for the time and location of their classes."

In this sea of technological possibilities, what should be determined is where we are going and how technologies can help us to get there. **Often, the focus of debate is the technology, as if digitalisation were an aim in itself. However, the main issue to discuss is what education model we construct with the available technology to reach students, and what we want to obtain** (Freeland, 2021).

Three aspects are at the centre of many of the debates on this issue. The first is how digital technologies can help to reduce the costs of education and reach the maximum number of people. The second is how digital technologies can help to make higher education more flexible to adapt it to the different needs of students. The third is how digital technologies can help to construct good learning models for the world of today.

Regarding the first aspect, Govindarajan, Srivastava and Enache (2021) propose three strategies that are clearly differentiated in economic terms. Higher education institutions must choose from them according to their objectives. The first is "an augmented, immersive residential model, in which students live on campus and interact with students and teachers in person." This model embraces a very specific way of understanding education and has a series of advantages, but it is expensive: "it works well for top-tier schools that enjoy brand recognition and have access to rich donors, world-class faculty, prestigious employers, and influential alumni." The second strategy is "a hybrid model based on the idea that universities and students have limited resources." In this proposal, the key is to divide resources optimally between "face-to-face interactions, which impose the highest cost on students and universities, and asynchronous virtual learning, which imposes lower costs. Ideally, universities should conduct only those activities on campus that [...] are harder to do remotely." The third strategy is "a fully online model that offers quality education to strictly virtual audiences."

This wide range of options means that a larger, more diverse section of the population can be accommodated. However, we should be cautious and attentive, as the potential of digital ecosystems for learning could become a kind of Trojan horse, bringing new segregation and worsening existing divides. The rise of digital technologies that has occurred in recent years in different sectors, and the strong push that they received during the pandemic now provide us with an excellent opportunity to study in depth questions like these, in the framework of an innovative pedagogical model, to achieve a more universal, inclusive higher education.

Flexibility in higher education is crucial in a world such as that of today, where studies and work are combined, where lifelong learning is already imperative (see the chapter The future of work), and in which the profiles and circumstances of students are highly varied. This required flexibility is another area in which technology could play a notable role. Eringfeld (2020) indicated that "by combining virtual with face-to-face education, universities will be able to accommodate the diverse needs of students in safe and flexible ways." Similarly, Cohn (2021) noted the importance of the current time in this respect: "we have an opportunity to rethink not merely how to leverage online and hybrid learning to deliver content, but, more important, how to use the faculty's growing expertise with technology to make teaching and learning more accessible for everyone."

Cohn (2021) used an example to explain how students could be offered different ways to approach contents: "short prerecorded lecture videos allow students to watch at regular speed or slowed down; they can listen or turn on captions to read along; or they can read the transcript of the video and not engage with the audio or visual elements at all." These options benefit, for example, students with functional diversity or those who work full-time and can only take classes asynchronously. In addition, the author explained that some students learn better when they can go at their own pace. The aim is to take "the diversity of learners into consideration up front as we design our courses."

Flexibility is very closely linked to another of the characteristics that is sought in the new higher education models: personalisation. In fact, as Martí stated (2021), "the gradual reduction in face-to-face activities due to the blended paradigm must, paradoxically, also permit ever increasing personalisation." In turn, Taylor and Burquel (2021) noted that digital technologies and new educational models must enable us "to adapt to independent learning and develop personalised learning, allowing the students much more flexibility in their learning paths." However, personalisation in its strictest sense requires the support of artificial intelligence tools and these are still not sufficiently developed to be implemented comprehensively (see Section 4).

A concept that seems more appropriate in these contexts is that of "self-management of learning". This occurs when, as a result of technologies and the flexibility that they permit, we can decide at what pace to learn and when we do activities.

Regarding new models of learning, which is the third aspect of the debate, more than simply investing in infrastructure and superimposing new tools over an education system that is sometimes outdated (Riera, 2020), we must consider how tools can be used "to foster meaningful learning in e-learning environments, designing new pedagogical models and learning strategies" (Taylor and Burquel, 2021). Altbach and de Wit (2020) also confirmed that what is needed is to take advantage of these tools to enhance the quality and sophistication of courses and programmes by integrating the online dimension. However, we should not expect a massive, hurried revolution, as many inaccurately predicted with massive open online courses (MOOCs).

3. Complementarity between online and face-to-face modes in new learning scenarios

In recent years, and particularly since the outbreak of the pandemic, online learning models have been increasingly present in the higher education area. Online education has some clear advantages, but the value of face-to-face activities is notable. It is increasingly clear that face-to-face and online activities will coexist. This coexistence can be focused on meeting the needs of each training process and the learning objectives. Nevertheless, given that face-to-face activities have added value and added costs, a physical-digital segregation could emerge in higher education, in which face-to-face students would benefit from the experience of social interaction on campuses, while digital students would be deprived of this advantage.

According to Govindarajan, Srivastava and Enache (2021), "lectures that require little human interaction must be digitized. Students can watch multimedia presentations using immersive interactive technologies at their own pace. [...] For such courses, technology platforms can deliver content to large audiences at low cost, without sacrificing one of the important benefits of the face-to-face classroom – the social experience – because there's hardly any in these basic-level courses." In contrast, according to Taylor and Burquel (2021), face-to-face mode is more suitable for active problem-based learning.

UNESCO (2020) has highlighted the importance of schools as a space for socialisation and learning about collective life, where face-to-face activities are vital and irreplaceable. However, it also noted the importance of bringing together everything that we have learnt to be able to progress in the future: "though the school space remains fundamental, it needs to be transformed and augmented by a much broader space for learning." In turn, Innerarity (2021) explained the importance of students' presence in learning processes, and differentiated this from the mere transmission of information where the space is not as important:

> The idea of the irrelevance of places was associated with the information society, but the knowledge society has a more intense relation with space and presence. The conditions of teaching are not the same as those of learning. Information is ubiquitous. However, most educational experiences require, in contrast, a specific place. Information, which is universally accessible, must be distinguished from experiences that require personal interaction" (Innerarity, 2021).

In addition, some authors argue that the channel is not the most important factor. What is really vital is the opportunity to interact, whether face-to-face or online, synchronously or asynchronously. Cohn (2021) gathered data from an Educause study and stated that "[student's] most-positive experiences depended more on the number of opportunities for student-instructor interaction than on the type of learning environment itself. How instructors and students organized and spent class time, and the amount of feedback and direct interaction, mattered more than the use of technology."

Everything seems to indicate that the nature and structure of many universities will be hybrid and designed with a holistic approach to be able to accommodate the various learning needs of society, as described by the EUA (2021):

> The physical campus will continue to be crucial as a place for social interaction and dialogue: a place that will host encounters that challenge and inspire, but will also offer quiet spaces for focused learning and research. The virtual campus will make the university ubiquitous. It will be developed to improve access for all to participate in research and learning, enhance cooperation, and explore new, innovative ways of pursuing university missions (EUA, 2021).

4. Artificial intelligence and digital humanism on the discussion table

Artificial intelligence is gaining ground in the higher education area. According to Rouhiainen (2019), the support of systems based on artificial intelligence could be of great help to reduce repetitive and routine tasks. This would give teachers more time to attend to students, train and research. Furthermore, "AI-based learning systems would be able to give professors useful information about their students' learning styles, abilities, and progress, and provide suggestions for how to customize their teaching methods to students' individual needs." However, artificial intelligence's entry into higher education is still very subtle. Consequently, for artificial intelligence to be implemented on a large scale a lot of research is still needed into this type of tools (Rouhiainen, 2019).

The implementation of artificial intelligence in higher education institutions is not without controversy. For certain artificial intelligence systems to function well, data are required, big data extracted from students' activities, and this must be managed in a way that is appropriate and ethical. Prats (2020) highlighted the risk of technology in terms of determinism: "a computer knows you so well, you can personalize education so much that you have the risk that people will take away the liberty of improving." Finally, some have clearly warned us that technological development could go too far: "brutal technological development without control could be like a steamroller that crushes our lives and even our own nature. We should think about this, as some humanists do" (Fanjul, 2017).

The benefits and opportunities of artificial intelligence are clear, as are the risks. In the face of this situation, it seems that the best solution is to find a good meeting point between taking advantage of artificial intelligence, and more generally digitalisation, and strengthening everything that makes us human: "There will never be a time when humans aren't necessary for the tasks related to education. For example, teachers will always play a crucial role in our society, as we must never underestimate the value of human interaction and critical thinking in the field of education" (Rouhiainen, 2019). Taylor and Burquel (2021) stated that "the Fourth Industrial Revolution is bringing fast technology-driven change, integrating technology and people, the physical and the digital, into new approaches, services and products to 'augment intelligence'."

Fanjul (2017), using the words of philosopher Marina Garcés, defended the search for this meeting point by establishing "a new partnership between sciences and humanities, a partnership to reconsider what we expect from technological development, what we want to become." In fact, as indicated by the same author, technological development is strongly associated with certain branches of the humanities, particularly the most philosophical. Similarly, using the words of science and technology philosopher David Casacuberta, he stated that "many technological developments first emerged in the mind of philosophers to then be developed by engineers" (see the chapter Citizens).

In fact, many have suggested that a meeting point should be found between digitalisation and that which makes us human. Many have expressed this idea in another way, from the perspective of the need to put people, human life, at the centre of technological development, always in relation to the planet on which we live. This was explained by Trias de Bes (2020): "digital humanism is a trend that shows that digitalisation is not at the service of technology, but of humans. I sincerely believe that if we are going to accelerate the digitalisation of citizens' behaviour and habits, the companies and suppliers of technology that do this best will be those that design a digital future with the individual as the starting point." Plana (2020) explained the difference between understanding digitalisation as a noun – the core, "the necessary subject of all actions", the final objective – or as an adjective – "the descriptive complement that adds value", the means. Plana concluded that "a classic subject should be put at the centre: humanism, and everything should pivot around people."

5. Digital citizenship education: a right and a priority

According to the Council of Europe's definition (2021), "Digital Citizenship Education is the empowerment of children through education or the acquisition of competences for learning and active participation in digital society." Considering this definition, education must gain a new dimension that prepares children and subsequently young people and society in general to participate actively and fairly in the digital society, exercise their rights and responsibilities online, and promote and protect democracy and human rights. Taylor and Burquel (2021) also noted the importance of gaining digital competences, in this case, for growth and professional development: "graduates need to have the skills to live and operate in a technology-led world and also to understand how to leverage the potential of technology for new business development."

Digital citizenship education must be a priority of education worldwide. This was stated by the Council of Europe (2021) and explained by UNESCO (2015): "educators need to better prepare new generations of 'digital natives' to deal with the ethical and social dimensions of not only existing digital technologies but also those yet to be invented." It is essential that this training is a process that develops throughout life, is cross-cutting, continuous and efficient (Council of Europe, 2021). Finally, it is vital to train students to get the most out of the digital world's benefits and to be prepared for the potential hazards that it involves.

Although it is generally accepted that the use of digital technologies is a way to make higher education more inclusive and universal (Section 2), technology can also lead to exclusion: "technology is increasing inequality in HE (for those who don't have access) not only between countries, but also within countries." This leads to new forms of illiteracy: technological and digital illiteracy (GUNi, 2019).

One of the causes of inequality is that internet connections, electricity networks and access to computers and smart phones are still lacking in many countries and regions (Altback and de Wit, 2020). Furthermore, for digital technologies to really reach everyone, "open educational resources must be prioritized; public education cannot be dependent on digital platforms provided by private companies" (UNESCO, 2020). More specifically, UNESCO demands "global collaboration among governments, philanthropy, and non-profit organizations to develop and distribute open educational resources and open platforms, recognizing that much of what is currently provided by private companies should become a public undertaking where advancing the interests and capabilities of learners is the sole purpose." These issues are discussed in the chapter Knowledge, focused on research and innovation.

However, it should be noted that access to technology and information seems easier to resolve than training in skills: "with the development of relatively inexpensive technology, the 'digital gap' is more likely to be a gap in skills required to make advanced use of the technology than access to technology per se" (Council of Europe, 2021) (see the chapter Impact of Covid-19 in Higher Education). Similarly, Tello Leal (2007) distinguishes between the digital divide and the cognitive divide. The cognitive divide is much more worrying and the real challenge, as it "accumulates the effects of the various divides observed in the main areas of knowledge, access to information, education, scientific research, cultural and linguistic diversity." It is the main challenge to construct knowledge societies. Although access to information is essential, the most important step is to transfer information into knowledge:

> Even if resources are invested to expand the infrastructure for accessing the internet, a wired society in which conditions of connectivity exist is not the same as a society that is prepared to access, assess and apply the information. The aspiration to attain a knowledge society must involve people having real access to information in addition to being able to access the internet. They must know what to do with this information and be able to convert it into knowledge, and the knowledge into tangible benefits" (Tello Leal, 2007).

The Ferrer i Guàrdia Foundation (2020) also expressed this idea "[social inclusion] is achieved through people's capacity to get closer to technology and benefit from it in a way that goes beyond the digital sphere and has an impact on opportunities to improve living conditions." Clearly, the opportunity to access knowledge does not eliminate the differences in knowledge between individuals and regions. In other words, the cognitive divide will not disappear by solving the problem of the digital divide (Tello Leal, 2007). A broader approach to the problem is required, and education plays an essential role in this.

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1.6 Sustainability. Reinventing universities for a sustainable future

1. Sustainability: the unavoidable responsibility of education

Climate emergency, extraction and production systems that disregard the planet's biophysical limits, global healthcare crises and growing social inequalities within and between countries: these concerns are repeated tirelessly and call for a profound, systemic paradigm shift, if we genuinely want to think of a future for humanity on Earth. Indeed, the sense of urgency to bring about such a transformation has only grown stronger during the Covid-19 pandemic, which has made clear and, in most cases, sped up existing disparities and imbalances.

In *The Sustainable Development Goals Report 2021,* the United Nations (UN) lays out an array of facts and figures that can leave nobody indifferent. In 2020, the global rate of extreme poverty rose for the first time in over twenty years. At the same time, the climate emergency worsened: the concentration of greenhouse gases keeps going up; the average temperature has now climbed to roughly 1.2°C above pre-industrial levels; and the impacts of climate change are increasingly plain to see. Moreover, as UN Secretary-General António Guterres puts it in his foreword to the 2021 report, "[t]here is a risk of a generational catastrophe regarding schooling, where an additional 101 million children have fallen below the minimum reading proficiency level, potentially wiping out two decades of education gains".

The education that Guterres now sees at risk includes an unavoidable commitment to sustainable development. That is, education must promote "individual behavioural change for sustainable development, equality and respect for human rights as well as fundamental structural and cultural changes at the systemic level of economies and societies, and also [promote] the required political action to bring about these changes" (UNESCO, 2021). Ultimately, **education must be the guiding and driving force to ensure that economic and social development takes place within the planet's limits**[1] **and with respect for human rights**. Accordingly, it follows that the concept of sustainability must respond not only to environmental issues, but also to social and economic issues, and that the links between these areas need to guide the entire educational process.

The 2030 Agenda lays out a common framework for the transition toward a future that must be sustainable if it is to exist at all. Under the umbrella of the 2030 Agenda, Education for Sustainable Development (ESD) then sets out the more specific framework for education, with each stage in the educational process marked by its own distinctive features and particular missions. For instance, higher education, as the final stage for many young people, opens up doors onto their professional future and their future as citizens. As a result, higher education has enormous transformative power.

Within this context, Section 2 of the present paper analyses the road that has led to the 2030 Agenda and reflects on higher education's potential to make change happen. What does the change need to be? What is required to bring it about? Section 3 then goes on to offer answers to these questions before Section 4 concludes by applying environmental, social and economic perspectives to higher education institutions (HEIs).

2. The role of higher education in the 2030 Agenda

The 2030 Agenda has been put together to furnish a common framework and implementation tools to agents engaged in sustainable development. Section 2.1 below includes a brief chronological overview of multilateral policies relating to the environment and, subsequently, to sustainable development right up until the approval of the 2030 Agenda. It also sets out an analysis of the shortcomings of the 2030 Agenda as a global roadmap. Section 2.2 then applies these premises to higher education, one of the key agents in the transformation toward a future in balance with the environment and with equality for all of the planet's inhabitants.

2.1 The road toward the 2030 Agenda (and how far remains to go)

The approval of the 2030 Agenda in 2015 was the culmination of a long journey that started in 1972 at the UN Conference on the Environment in Stockholm[2].

1. See https://www.stockholmresilience.org/research/planetary-boundaries.html

2. Some information for the chronology comes from https://www.un.org/en/conferences/environment.

For the first time, the climate emergency had reached the political arena and was now the focus of the world's attention. A few months beforehand, the Club of Rome had published a report entitled The Limits to Growth, the outcome of a study conducted by 17 researchers into the exponential economic and population growth taking place on a planet with limited resources.

Over ten years later, in 1983, the UN General Assembly set up the World Commission on Environment and Development (WCED), which became known as the Brundtland Commission after the name of the commission's chair, former Norwegian prime minister Gro Harlem Brundtland. After four years of work, the commission brought out its report Our Common Future, in which it defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987). The Brundtland Report, as it was called, took up the spirit of the Stockholm conference, putting the environment back on the political agenda and pinpointing the need to tackle the environment and development jointly.

The efforts of the Brundtland Commission laid the groundwork for the first UN Conference on Environment and Development (UNCED), or Earth Summit, in Rio de Janeiro in 1992. The Rio conference put on the table the interdependence of the social, economic and environmental spheres, and raised the need for a new way to look at how we produce, live and work in order to bring these spheres into balance and make them sustainable. At the time, this was a truly revolutionary idea. The Rio conference also saw the crafting of the first Agenda for Environment and Development, or Agenda 21, which laid out recommendations ranging from new educational methodologies to proposals for the preservation of natural resources, by way of alternative economic models.

In 2000, the third millennium kicked off with the Millennium Summit at UN headquarters in New York City. The summit culminated in the adoption of the Millennium Development Goals (MDGs)[3], which set 2015 as the deadline for their achievement. The MDGs represented an unprecedented push in the fight against poverty and the pursuit of other development goals, such as the prevention of life-threatening diseases and primary education for all. Indeed, the MDGs have been described as a human development agenda because that was their primary focus.

In 2012, the UN Conference on Sustainable Development (UNCSD), which is also known as Rio+20, was convened as a twenty-year follow-up to the original Earth Summit in Rio. The Rio+20 participants came to an agreement to launch a process intended to produce a list of Sustainable Development Goals (SDGs) that would carry on the MDGs originally set for 2015. After a process of multilateral negotiations, the UN General Assembly approved a resolution on 25 September 2015. It was entitled Transforming Our World: The 2030 Agenda for Sustainable Development and it established 17 goals and 169 targets. Importantly, the approval of the 2030 Agenda, as it has become known for short, happened only a few months before the signing of another historic accord: the Paris Agreement on Climate Change in the context of COP21.

The 2030 Agenda, the process of its construction and its final outcome, have been the subject of much analysis and debate. Martínez Martínez & Martínez Osés (2016) describe it as "an aggregation of visions and interests [and means of implementation] that was the result of power asymmetries". For his part, Gómez Gil (2018) focuses on the idealistic, visionary nature of some of the goals, the feasibility issues of the approved indicators, the complex architecture, and the technical limitations and inconsistencies. On the other hand, the philosopher and activist Jorge Riechmann made some remarks in Territoris.cat (2020) to the effect that the SDGs "would have been useful thirty years ago, but now incremental changes and gradual pathways are of no use. We have let decades of denialism and inaction pass by, so that now the prospects are bleak and sombre."

Several authors criticise the 2030 Agenda for its lack of clear, direct accountability. For instance, Gómez Gil (2018) characterises the SDGs as "empty rhetoric and deliberate ambiguity, which call for sweeping worldwide changes through concerted international action that does not appear to be part of any current political priorities". In the same vein, Martínez Martínez & Martínez Osés (2016) emphasise "the agreements' lack of any binding and prescriptive character [, which] made it possible to take up certain demands of transnational groups without giving rise to direct responsibilities for any given actor". For instance, the 2030 Agenda calls for a global partnership, but it distinguishes neither

3. See https://www.un.org/millenniumgoals/

who is responsible nor what real possibilities may exist to bring about change. As the two authors note, "the final approved text does not constitute an 'intergovernmental consensus' in the strict sense, but is simply a wide assortment of issues, insights and proposals that coexist in a declaration whose character is more descriptive than prescriptive in the way of solutions".

The new global roadmap for sustainability that is defined by the 2030 Agenda does go beyond the UN development agenda in effect until 2015. According to Martínez Martínez & Martínez Osés (2016), "the goals are expanded, new steps are taken in the direction of a universal, multidimensional logic of development, and relevant elements are introduced for the governance of development". As to the aim of universality, Gómez Gil (2018) points out that "the MDGs applied only to impoverished countries, taking a limited view of development, far from a multidimensional understanding of development. [By contrast, the SDGs] are a mirror through which all nations see their own policies and performance reflected back at them."

Despite these advances, however, Gómez Gil (2018) stresses that there has not been a smooth transition from the MDGs to the SDGs and old problems of compliance have not gone away. Specifically, the SDGs are the heirs of commitments and agreements embedded in the MDGs "but without having gone through a thorough, comprehensive evaluation of the political and technical fulfilment of the earlier agreements" with the result that there is a lack of "exact scientific evidence to reorient global development policies appropriately". Closely connected to this issue with the SDGs, Gómez Gil adds that "many of the goals and substantive targets come from international agreements, summits and conferences that were held years ago and then systematically reneged on".

Lastly, Martínez Martínez & Martínez Osés (2016) stress the unfinished nature of the 2030 Agenda: "the idea of the agenda as a closed, consensual, accepted agreement carries major risks, given that the process of defining the goals and targets has not been completed, nor will the achieved result have to be applied in the same way in every signatory country. [...] Each country must now define how to adapt the 2030 Agenda to its national reality, that is, how to interpret the SDGs *politically*". Concurring with this view is Gómez Gil (2018) who says, looking at the next steps, that "to make significant advances, the SDGs require clear decisions and precise political commitments to transform empty rhetoric and hollow words of no value into effective, transformational measures to improve our afflicted planet and the living conditions of its inhabitants".

2.2 The unique potential of higher education to forge change

We live at a defining moment for the future of humanity, in a new era when human activity affects the very dynamics of the planet on which we live. Sutoris (2021) notes that education has never before played such a critical in the future of humanity and the species as we live in an era, Anthropocene, "marked by humankind's unprecedented control over the natural environment". Indeed, **education must shoulder part of the responsibility for the new paradigm, which challenges even the most fundamental definition and goals of the educational process**.

However, this is not news. For some time, efforts have proceeded apace. In the context of the MDGs, for instance, the UN Decade of Education for Sustainable Development (DESD; 2005-2014)[4] set a goal to integrate the principles, values and practices of sustainable development in all aspects of education in order to endow education with the knowledge, competences and attitudes needed to become a change agent.

Subsequently, on 21 May 2015, the World Education Forum met in Incheon (WEF 2015) and adopted the Incheon Declaration for Education 2030, which set out a new vision of education for the next 15 years under the framework of the 2030 Agenda: "our vision is to transform lives through education, recognising the important role of education as a main driver of development and in achieving the other proposed SDGs" (UNESCO, 2015b).

More specifically, Education for Sustainable Development (ESD)5 is an integral part of the 2030 Agenda, particularly of SDG 4.7[5]

However, it is also a key element in the achievement of all the other goals. In this context, the ESD for 2030

4. See https://en.unesco.org/themes/education-sustainable-development/what-is-esd/un-decade-of-esd
5. ¨By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development."

roadmap (UNESCO, 2020), the framework for the current decade of Education for Sustainable Development, envisions the urgent sustainability challenges and points out "the implementation of the new Education for Sustainable Development: Towards Achieving the SDGs [ESD for 2030] framework, which was adopted with the aim of increasing the contribution of education to building a more just and sustainable world". Indeed, the roadmap outlines activities in five priority action areas: advancing policy, transforming learning environments, building capacities of educators, empowering youth and accelerating local level actions. Moreover, the roadmap has underscored ESD's key role in the successful achievement of the 17 SDGs and the major individual and societal transformation required to address the urgent challenges of sustainability.

The ESD for 2030 framework was presented to the UNESCO World Conference on Education for Sustainable Development 2021 in Berlin, where the Berlin Declaration on Education for Sustainable Development (UNESCO, 2021) was adopted. "In this Declaration we acknowledge the power of education to turn things around", said Stefania Giannini, UNESCO Assistant Director-General for Education, in her address at the conference[6]. The adoption of the Berlin Declaration will give additional impetus to the application of the ESD for 2030 roadmap.

Higher education has a great responsibility under the new paradigm. Not only does it open doors into the world of work, but for many citizens it also prepares them for the future in the broadest sense. That is, these citizens will necessarily come face to face with a changing reality in which the change is, in reality, imperative and in their hands. As former UNESCO Director-General Federico Mayor Zaragoza said to GUNi (2019): "universities must be at the forefront of the radical and urgent changes that are needed to put the SDGs and the Paris Agreement on Climate Change into practice".

Within the educational process, therefore, we observe that **higher education holds a key position in time, if we understand it as a part of stage that will extend throughout life; and it also holds a key position in space, by virtue of being situated between the local community and the international context**. GUNi (2017), in its aptly entitled report Towards a Socially Responsible University: Balancing the Global with the Local, addresses these very issues: "HEIs can be identified as key players from both perspectives and, thus, have the singular responsibility of helping to provide appropriate and adequate responses to both legitimate needs and interests" in the global arena and in the development and competitiveness of their societies.

Higher education also has great potential in the change process because of its link to knowledge. Its unique role in the production and transmission of knowledge gives it a tremendous capacity for growth. This unique quality, together with its key position between local and global and the fact that is the doorway to employment for many, turns higher education into the guiding and driving force for all other change agents as well.

Taking up this perspective and commitment, higher education is now engaged in a host of actions in relation to the SDGs. In March 2021, the rectors of 56 universities from 30 countries signed the Joint Statement of Global University Leaders on the 2030 Agenda for Sustainable Development, in the presence of UN members, to declare their aim of working together to achieve the SDGs. This marks the first time that leading universities from six continents have undertaken a joint commitment to the SDGs and they did so, specifically, in five key areas: implementing the concept of sustainable development across their activities and operations; improving the sustainable development competence of students, faculty and staff; supporting a wider spectrum of scientific research, including blue-sky discovery and transdisciplinary research, in response to global challenges; working with global partners to provide innovative solutions and leveraging technology; and upholding open science to facilitate constructive cross-border collaboration to solve specific problems (O'Malley, 2021).

As the International Association of Universities (IAU) (2020) put it, **the impact of the SDGs on HEIs is twofold, since higher education is both a target (4.3) and an enabling factor**. On one hand, the 2030 Agenda must transform how HEIs function in teaching and research, while on the other hand, HEIs must contribute actively to sustainable development through the links that they forge with their local community and the international arena:

6. Wrap-up video with some conference highlights: <https://www.youtube.com/watch?v=wDpBYUG_Zr0>

> On the one hand, the SDGs are transforming the way higher education institutions function. This includes for example teaching about them, specifically doing research or in general orienting the institution along the 2030 Agenda. [...] On the other hand, HEIs are actively contributing to the achievement of the global goals, again through teaching, research, community engagement and campus initiatives. What is more, the sector critically engages with the goals set in the 2030 Agenda, questions them, revises them and in many cases translates them to the local level. Many academics and scientists are in dialogue with national governments, UN agencies and other policymakers, thus actively engaging themselves in the science–policy interface (IAU, 2020).

One noteworthy initiative was the publication in 2017 of a guide entitled Getting started with the SDGs in universities: A guide for universities, higher education institutions, and the academic sector, which was put together by a group of universities in Australia and the Pacific that were members of the Sustainable Development Solutions Network (SDSN). As the guide's authors note, "universities, with their broad remit around the creation and dissemination of knowledge and their unique position within society, have a critical role to play in the achievement of the SDGs. Arguably none of the SDGs will be achieved without this sector" (SDSN Australia/Pacific, 2017). On the assumption that every higher education institution will approach the SDGs differently, the guide offers tools that can be adapted to different contexts. In 2021, the SDSN in Spain published an updated version of the guide entitled Accelerating Education for the SDGs in Universities: A guide for universities, colleges, and tertiary and higher education institutions, "[which] aims to expand, update and refine the information provided in the previous guide based on new resources, tools, thinking, and learnings from universities working to implement ESDGs, to consider what ESDGs mean for universities" (SDSN, 2020).

In the same vein, GUNi has adopted a strategic line of action revolving around the 2030 Agenda and the SDGs that focuses on partnerships, knowledge and research. Specifically, GUNi has organised two international conferences (the International Conference on Sustainable Development Goals: Actors and Implementation in 2017; and the International Conference on Sustainable Development Goals and Higher Education in 2020), and it has launched the Group of Experts on SDGs and Higher Education. GUNi has also produced publications and reports, most notably Approaches to SDG 17 Partnerships for the Sustainable Development Goals (SDGs); Sustainable Development Goals: Actors and Implementation, a Report from the International Conference; and Implementing the 2030 Agenda at Higher Education Institutions: Challenges and Responses.

Moreover, it is well known that universities keep close track of their activities by means of evaluation and monitoring, and the area of sustainability is no different. Since 2010, the University of Indonesia has published an annual GreenMetric ranking, which assesses universities around the world in terms of the extent of their engagement with sustainability. The ranking's criteria fall into six categories, specifically relating to campus design and infrastructure, energy consumption and carbon footprint, waste management, water usage, transport, and the incorporation of sustainability in teaching and research. More recently, the second edition of the Times Higher Education (THE) Impact Rankings appeared in 2020. The Impact Rankings, which seek to assess universities in terms of their degree of commitment to the SDGs, takes a more global approach to sustainability, evaluating universities on three dimensions: the social, the environmental and the economic. According to Miñano, Benayas & Mataix (2021), these rankings do reflect genuine progress, but they are not above criticism.

Higher education has witnessed a host of proposals for the implementation of sustainable development. Still, many voices stress that there remains much to do before HEIs offer a favourable setting for sustainability. The IAU (2020), for example, notes that "the question about how universities around the world are translating those ideas into action remains", adding that since the 2030 Agenda was written for governments, "it is hence not the task of higher education to implement the SDGs, but rather to engage with them". For his part, Wals (2020) eloquently points out the "education has been hijacked by (short-term) corporate interests and a 'neo-liberal' agenda that is not concerned with developing an ethic of care, solidarity, sharing, mindfulness and sensitivity towards the other, the far away and the unknown". Clearly, it is necessary to keep pressing forward and lay the groundwork for change in HEIs so that it is both robust and binding.

3. Foundations for change

As Tilbury (2011) says, "sustainability is more a journey than a checklist". **The implementation of sustainability in higher education necessarily entails profound changes that take time and a determined transformation that reaches every part of HEIs**. In this respect, several authors make proposals that revolve around (i) the idea of connection or synergy, that is, connecting with the environment and with people near and far, connecting areas of knowledge with one another, and connecting higher education institutions both inwardly and outwardly, while a host of writers mention (ii) the need to change how we approach sustainability, that is, by using critical thinking, engaging not only with fear but also with hope, and employing self-restraint while, at the same time, taking action.

(I) **Synergies, broadly understood, are essential to create the necessary conditions for a higher education in support of sustainability**. Wals (2020), for instance, speaks of the need for a "relational pedagogy" that would create opportunities for connection, more specifically, to "connect to the local environment and the way it relates to the wider world, connect to other species and non-living matter in a deeper and more caring way, and connect to other humans, also those not in sight, those thinking differently, having different socio-economic, cultural, etc. backgrounds". Ferrer-Balas (2011) similarly underscores the importance of fostering contact between different cultural milieus, especially those that are more compatible with the principles of sustainability, such as Buddhist culture.

In addition, synergies need to be generated between branches of knowledge, and between sustainability itself and other disciplines. This is not yet always the case. For instance, GUNi (2019b) highlights a "lack of coordination and interdisciplinary work" and, therefore, "the need to break down silos and work across disciplines and faculties". Similarly, Grancitelli et al. (2020) note that "even now that we have crossed planetary boundaries and life on the planet is rapidly going extinct, the university still treats sustainability as a separate discipline or as an 'add-on' to the standard package meant to sustain our competitiveness by advancing green technologies".

There is also a great need not only for interaction among the different members, departments and areas of higher education, but also for interaction between the foregoing groups and outside agents. As GUNi (2019b) has put it, "most of the higher education community involved in such topics agree that the main objective for HEIs in the implementation of sustainable development should be its holistic integration in their systems". More specifically, "in many cases, [...] either there is a leadership that is convinced of the need to embed sustainable development but finds it very difficult to reach academics, service staff and students and make cultural change possible, or we find strong bottom-up approaches coming from enthusiasts that lack clear support from leadership". Also, the interaction between HEIs and society is imperative and it is even more crucial to foster a systematic vision that includes every agent involved in the change process. In this respect, Ferrer-Balas (2011) speaks of "thoughtful transition". Clearly, the university must change; however, Ferrer-Balas goes on to say that "it would be quite naive to see it as a two-step change: first, the universities change, and then they support society to change. Rather, it must be viewed as a co-evolution of systems".

(ii) As noted above, another frequently mentioned issue is the need to change how we approach sustainability. Recalling the famous words of Einstein, we cannot solve our problems with the same thinking we used to create them. If they are to be fixed, "young people need to be given the space to ask bold and disruptive questions about why things are the way they are, to learn how things can be changed but also what keeps them from changing" (Wals, 2020). In other words, we must strengthen critical thinking and make spaces for reflection. Importantly, in such spaces, it is also indispensable to find an appropriate way to manage fear and hope in the face of an uncertain future. Grancitelli et al. (2020) put it like this:

> Our inspiration came from Martin Luther King: had he proclaimed "I have a nightmare," he would never have mobilised the critical mass to uproot entrenched racism. Young people today cannot imagine a world without, say, fossil fuels, even if they know CO2 emissions are killing us. They fear the loss of familiar lifestyles for lack of a 'dream' about a better future. So dealing with these fears and hopes is a crucial ingredient of education for a sustainable future (Grancitelli et al., 2020).

In addition, we need to change our deeply entrenched mindset and behaviour toward the world: "scaling-down and pulling-back rather than designing our way out of

problems" (Grancitelli et al., 2020). In the case of the climate crisis, it has become clear that human beings cannot solve the problems basically through technology, taxes and legislation. According to the authors, what is necessary is "self-restraint in human behaviour".

Perhaps the most commonly repeated point is that we must get beyond knowledge and commitment, that is, we must take action. It is necessary to live sustainability as an experience, not merely in academic terms (Castells, 2021). But what has to be done so that today's young people become citizens committed to sustainability? According to Grancitelli et al. (2020), "if you look at our university education, the answer seems to be that you have to learn 'facts and figures' about issues like climate change or pollution, and once you know what is wrong, you will do the right thing. Of course, that's not how it works." Young people are well informed about the climate crisis and, indeed, many of them take to the streets to demand action (see Section 4.1). However, the authors add that "asking the government to save the planet is one thing. Changing your outlook on life is another. And that is not what you learn in the groves of academe."

Failure to take action can have serious consequences. As Wals (2020) warns, "when there is a disconnect between what a school does and what it tries to teach in these areas, there is a hidden curriculum of unsustainability at work that can do more harm than good". When education focuses only on knowledge and commitment and does not make action possible, Wals concludes, "it can easily become doom-and-gloom education or education that prepares for the 'end of the world' which likely will cultivate hopelessness, apathy and even depression".

In short, many voices speak about how to make change happen that is both profound and real, and they have pointed to **two key ideas that form the basis of HEIs' transformation toward sustainability: connecting milieus, people and institutions; and daring together to change how we approach sustainability**. Of course, we already know what this means: we must now take hold of the reins of tomorrow, if we really want tomorrow to be possible.

4. Environmental, social and economic sustainability in higher education

As GUNi (2019b) notes, HEIs have been working on sustainable development and related issues since well before the adoption of the 2030 Agenda. Until recently, though, much of the emphasis had been placed on a narrow approach to sustainability: the environment. However, the approach has broadened in recent years to include all aspects of life. More importantly, the 2030 Agenda has triggered renewed interest among different parties and once again put the spotlight on topics that in some cases were regarded as secondary.

To make Education for Sustainable Development into a reality, it is imperative to address sustainability not only from an environmental perspective, but also from the social and economic perspectives. The following sections lay out the implications of all three perspectives for higher education. Specifically, Section 4.1 links higher education and climate change, while Section 4.2 adopts a social perspective to treat higher education as a common good and Section 4.3 looks at education for economic well-being.

4.1 Adaptation and transformation: higher education and climate change

UNESCO (2015) has stated that "education plays a paramount role in raising awareness and promoting behavioural change for both climate change mitigation and adaptation". This is indeed what is set out in SDG 13.3[7]. The role of higher education in sustainable development is key, not only with regard to the transmission of knowledge on the subject and the raising of awareness and commitment, but also in the case of action. In other words, **higher education must work with other change agents to mitigate the effects of climate change and create the means by which we can adapt to new environmental conditions**.

According to Facer (2020), higher education institutions have the chance to become core actors in the transition toward sustainable models. As she puts it, "climate change is not a scientific and technical matter alone, but is driven by a set of underpinning issues relating to economics, social inequalities, how we produce knowledge and ideas of what it means to be human". Thus, higher education can make major contributions not only through research into the scientific and technical aspects of climate change, but also by dealing with all of the underlying issues transversally within the institution. Facer (2020) clusters these underlying issues into four specific areas for action: 1) redesigning the day-to-day operations of universities and colleges to reduce emissions, nurture biodiversity and adapt to the impacts of a changing climate; 2) reinvigorating the civic role of institutions to build ecologically and socially resilient communities; 3) reshaping the knowledge structures of the university to address the interdisciplinary complexity of climate change; and 4) refocusing the educational mission of the institution to support students to develop the emotional, intellectual and practical capacities to live well with each other and with the planet in the era of climate change.

Against this backdrop, various initiatives now enable universities to propose and pursue innovative projects to address the challenges of the 2030 Agenda at the scale that pertains to them (Miñano, Benayas & Mataix, 2021). The overall aim is to transform HEIs into living laboratories and then implement any changes more broadly afterwards. In the same vein, Arjen Wals gave a lecture for the Baltic University Programme in December 2020[8] in which he laid out the role of universities in co-creating transitions toward sustainability: first, it is possible to create small niches of action, which can be student actions or courses on sustainability; second, it is necessary to develop whole programmes or projects; third, the local environment becomes a resource for education. The incorporation of the local environment in the transformation of the university can be understood as a first step toward the transfer of HEI changes to society.

In the same context, we must not forget the current role of young people in addressing the planet's challenges. Drawing on the words of Dana Fisher, a sociologist at the University of Maryland who studies activism, Marris (2019) explains that "young people have been talking about climate change for decades. But the latest generation of protestors is louder and more coordinated than its predecessors. [...] The movement's visibility on social media and in the press has created a feedback loop. Young people are getting so much attention that it draws more young people into the movement." Indeed, **the environmental awareness of young people entering higher education institutions is much greater than it used to be, and this is an aspect that HEIs must take on board in order to move forward decisively**.

4.2 Higher education as a common good

The knowledge society has led to a growing acceptance that university training is necessary to obtain high-quality, value-added jobs, and this realisation is indeed reflected in a sustained increase in higher education. Indeed, it has prompted a rise in higher education around the world. Nonetheless, UNESCO has pointed out in the concept note for the World Higher Education Conference (WHEC 2022) that "despite these improvements, huge disparities within and across countries and regions remain, and social origin continues to be the main factor that influences participation in higher education"[9].

While the right to education is commonly accepted for primary and secondary schooling, no universal agreement exists on higher education. In this vein, SDG 4 sets out for the first time that "the scope of education is conceived of not merely as universal, but also as transversal, as something that is pursued throughout people's lives. For this reason, the targets now include the achievement of inclusive, equitable access to a higher education that must be one of quality" (Martínez-Samper & Vilalta, 2021). Along the same lines, **a recent report entitled Reimagining our futures together (UNESCO, 2021b) seeks to build a new social contract to reinforce this idea and expand the right to education so as to include access to information and the right to opportunities to make contributions to the knowledge commons, the accumulated and ever-changing resources of our collective knowledge**.

SDG 4 also focuses on the presence of women and other groups that have traditionally been more excluded from education. The aim is to "eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations". Likewi-

7. "Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning."

8. Lecture available at <https://www.youtube.com/watch?v=0fWIJHhULtY>.

9. See https://en.unesco.org/sites/default/files/whec2022-concept-note-en.pdf

se, the Incheon Declaration also addresses the issue of gender: "We recognise the importance of gender equality in achieving the right to education for all. We are therefore committed to supporting gender-sensitive policies, planning and learning environments; mainstreaming gender issues in teacher training and curricula; and eliminating gender-based discrimination and violence in schools" (UNESCO, 2015b).

Since the late nineteen-seventies, gender issues have gone through changes in higher education. While there used to be a notable underrepresentation of women, now the level of schooling for women has risen and they have a greater likelihood of completing their studies than men do (UNESCO-IESALC, 2021). This phenomenon has come to be called the "female advantage". The 2021 UNESCO-IESALC report asks whether the "female advantage" has really put an end to gender inequalities, since the issue of women's role in higher education does not appear to have been entirely resolved:

> Regardless of these somewhat encouraging statistics on women participation in higher education, concerns about the issue of gender equality in the tertiary education system have been growing over the last decade. A valid assumption is that women, after they graduate, are also able to proceed and study for higher degrees that would enable them to occupy most academic positions in universities, be involved in relevant research, take on leadership roles, and even earn competitive and comparable wages. Yet, [...] this has not been the case (UNESCO-IESALC, 2021).

According to the report, there is a clear increase in women's access to higher education, but they continue to face obstacles when they seek, for example, to take part in important research, move forward in their academic and scientific careers, or take up leadership roles (see chapter The future of work).

Another recurring debate linked to education as a common good focuses on the issue of who funds higher education. Castells (2021) speaks of a gradual reduction in public prices tending toward free higher education. That said, even in the case of greater public funding, it must be borne in mind that differences between countries will continue to exist. One possible solution is a "Global Learning Fund", which would oblige "economically richer countries and global businesses to contribute a portion of their profits to subsidise higher education across regions" (UNESCO-IESALC, 2021b). Harris (2021) addresses this matter in the specific case of the US, where work proceeds on a national free college and where "the idea of a large, federal free-college program [...] has more and more credibility. [...] The stars seem aligned to make some form of national free college a reality. The more evidence we see, the more that would seem to be a step forward."

If we widen the field of vision, we can see that **the issue of the common good transcends education to encompass knowledge itself. As UNESCO (2015) puts it, discussions over education must go beyond the acquisition, validation and use of knowledge. They must also tackle fundamental problems linked to the creation and control of knowledge**. According to UNESCO, "the knowledge commons is gradually being privatised through law and, more specifically, through the Intellectual Property Rights regime, which dominates knowledge production". Yet UNESCO has come to the conclusion that knowledge is the common heritage of humanity and, as such, must be regarded, like education, as a global common good. In this vein, the new social contract for education calls for the inclusion of "a society-wide commitment to include everyone in public discussions about education. This emphasis on participation is what strengthens education as a common good" (UNESCO, 2021b).

There appears to be a clear need to treat both education and knowledge as common goods. Nonetheless, there is an all-too-familiar gap between regulations and discourse on one hand and implementation on the other hand, and gender issues are one of the key elements of discrimination. The dominance of stakeholder groups remains too great (UNESCO, 2015). Beyond calls to enact these rights, therefore, it comes down to everyone working together.

4.3 Education for economic progress and well-being

Jorge Riechmann (2020) notes that "climate change is the symptom, but the disease is capitalism". The economic model that guides the world today, many argue, is what needs most urgently to be overhauled. In such a context, what role does higher education have to play? Riechmann (Territoris.cat, 2020) makes the critique that "faculties of economics everywhere are [privileging] the business school model over economic models committed to the survival of living species, including human beings".

Denying the gravity of the situation and trusting that it will get fixed without challenging capitalism, in Riechmann's view, is not working. Moreover, he adds, green capitalism and the green new deal are oxymorons (Territoris.cat, 2020) as we live in a planet of limited resources economically controlled by the self-expanding dynamic of capital accumulation, also inherent in its "green" versions. Therefore, Riechmann (2020) defends the need of "an emergency contraction".

Despite our awareness that the goal is very tough to achieve, Riechmann proposes that we keep doing things in the meantime: "Think about how to organise collectively, not individually, in your daily lives and things closer to home in order to feed yourselves, move about, live in the most sustainable way possible. At the same time, also think about how to fight politically in response to major challenges like mobility, the energy model, a global agroecological programme ...". In this process, higher education will have an essential role to play. There is a need to support students and the broader society in the transition toward new models and approaches so that, drawing again on Riechmann, "when the signs of major disaster become apparent to the vast majority of the population, we will have enough room to make the best possible response" (Riechmann, 2020).

Facer (2021), for her part, puts forward a number of proposals for education aimed at economic well-being, revolving around the idea of employability (see chapter The future of work):

> For many around the world, having a job in the formal economy has long been seen as a fantasy; their financial income comes primarily from informal work, the grey economy and precarious employment. For many others, the Covid-19 pandemic as well as the 2008 financial crisis made starkly visible the fact that jobs in themselves are not enough to provide economic security. Under these conditions the other ways in which people create security for themselves – the care and material resources of the household, the resources of the commons and the underpinning infrastructures of the State – become clearly apparent, alongside their fragilities (Facer, 2021).

Against this backdrop, Facer notes that "education needs to attend not only to students' capacities to participate in meaningful work in the formal economy, but also to their capacities to create ecologically resilient and caring households, [...] to sustain and defend viable states and to contribute to the maintenance of common goods". Thus, it is necessary to focus on the whole person and his or her context.

More specifically, Facer (2021) picks up on proposals from the economist Kate Raworth to explain that "economic well-being depends upon [...] provisioning practices": (1) paid work in the marketplace in exchange for money, but also access to goods and services provided by (2) households, by (3) the commons and by (4) the state. With respect to the second aspect, which entails "creating conditions in which households can provide or access care and develop food supplies that are resilient to marketplace shocks", Facer (2021) stresses that under no circumstances can it involve "removing women and girls from their rights to participate in and contribute to the wider community".

To sum up, in keeping with education for economic well-being put forward by Facer (2021) and proposals from Riechmann to change the economic model, it is necessary to furnish students with opportunities to rethink how the economy currently operates in order to come up with a model that will actually be sustainable.

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1.7 Internationalization. Reinforcing partnerships to attain common goals

As mentioned in the introduction to this report, higher education institutions (HEIs) face important societal demands. The Covid-19 pandemic has increased the pressure exerted on them, and the last two years have resulted in an authentic tour de force for students, academics and staff. Among other issues, the impracticality of face-to-face education and limitations in international mobility posed tough challenges that required new ways of thinking and acting to be successfully overcome. Some of these challenges have had a particular effect on the internationalisation strategies pursued by HEIs, which in recent years have acquired more relevance in university structures.

This chapter attempts to provide a brief analysis of current trends in HEIs' internationalisation, identifying common issues and proposing some potential lines of action. It aims to identify the potential role of internationalisation policies in the post-pandemic scenario facing universities, and in particular the power of HEI networks, alliances and other collaborative settings to tackle urgent global issues.

1. World context, global trends and their impact on HEIs

If there were still some doubts about the reality and scope of globalisation, the Covid-19 pandemic has shown how interconnected the world really is. Recent events inescapably created an opportunity to confirm not only the existence of very tangible global problems, but also the fact that global problems can only be solved through global solutions. The climate emergency, the consequences of the pandemic, and the socio-economic transformations which, among other consequences, have resulted in an unacceptable increase in massive inequalities, requires a coordinated, decisive and global intervention.

Higher education institutions cannot overlook the crucial challenges that the world currently faces, as these changes jeopardise not only the perspectives and wellbeing of future generations but those of current generations too. To better serve their communities, HEIs need to address global issues. But in addressing global problems it is crucial not to overlook the particularities and conditioning features of their own community. It is important to remember this double linkage of HEIs: they are fully embedded in their local communities and at the same time integrated in a broader global scenario; both local and global trends affect and amplify not only their performance and results but also their main mission (GUNI, 2017).

There are multiple areas of action in which HEIs can make a unique contribution to the solution of global problems. Authors like Slaughter (2017) specifically include universities in the group of players that are "(...) making a real impact in discovering, formulating and implementing solutions to global problems". Along with governments, "[l]arge foundations, universities and civic organisations of all kinds are on the ground trying to tackle what used to be known as "development issues" or international problems such as climate change and global health" (Slaughter, 2017, p. 20).

These lines of action require HEIs to be orientated towards collaboration and association with other agents, and HEIs' internationalisation policies and practices can play a crucial role in making this possible. Probably the most salient issue is the urgent necessity to rethink and reframe the current world-competition paradigm and to analyse the feasibility of collaborative models at national and international level. This would represent a complete change in the way HEIs' internationalisation policies are usually understood. Let us consider, for example, the current influence of global technology corporations, which in some cases threaten basic rights like active citizenship, the right to privacy and the concomitant undermining of democracy (See Veliz, 2020; Lanier, 2013). Most higher education institutions are nodes of multi-level networks that create and disseminate high-quality knowledge. They are organised into alliances and other collaborative models, with the participation of relevant social players. Under certain conditions, HEI networks could play a crucial role in counterbalancing the weight that global technology corporations currently have in the creation of cutting-edge technologies. (For notions of nodes and networks, see Benkler, 2006 and 2011; for the role that transnational and global networks can play in the current global scenario, which includes a specific role for HEIs, see Slaughter, 2004 and 2017).

1.1 The evolution of HEIs' internationalisation strategies to navigate an interconnected world

When addressing HEIs' internationalisation strategies, it is important to keep in mind that, besides the relevance of a university's autonomy, these strategies are fully imbricated in a wider geopolitical scenario and a particular cultural community that universities cannot ignore.

As is well known, since their origins universities have conceived themselves as part of an interconnected, albeit geographically and culturally limited, world. As Guri-Rosemblit (2015) stated, Western medieval universities had been built on the foundations of a common language – Latin - and a vocation of explaining universal matters. The main concept of international academic mobility, understood as scholars and students attending different universities, as well as the international recognition of university credentials, can be traced back to the 14th century[1].

This original universal-oriented ethos was diluted by the rise of contemporary nations and their national academies. As mentioned by de Wit et al (2015), in the 17th and 18th centuries universities became an instrument to support national interests. At the same time, Latin was replaced by national languages as the teaching language, and universities turned into national-centred institutions. This process intensified throughout the 19th century and the early part of the 20th, when preparing national elites for governmental and liberal professions became a central goal for universities. In this context, HEIs aligned their goals and mission with national aspirations, and the concept of serving the country was added to their core values. A second concept arose at that time: the ideal of competition. Originally linked to a broader sense of national intellectual sovereignty and rivalry among countries, since then the concept of competition between universities has been integrated into the dominant narrative as a positive and unavoidable component of HEI quality.

After World War I, and especially after World War II, the idea that universities needed to cultivate an international culture reappeared. Post-war geopolitical relations between Europe and the United States were determinant in the way international university relations were conceived. Cultural diplomacy and language learning, protected under the umbrella of the American cultural scheme known as "Study Abroad", were presented as tools to extend the influence of North American politics in the Western world.[2] As Reilly and Senders (2018) pointed out:

> Post-war geopolitics provided an instrumental motive for learning about other countries and cultures: winning the Cold War. The US government began to view cross-cultural knowledge as a necessary ingredient in the successful application of power (hard or soft) in the international arena, embedded in a wider intellectual project that was a boon to the national interest (p. 244-245)[3].

Even though this re-enactment of university internationalisation was moulded to respond to the situation in the US, it has exerted a strong influence on the way other HEIs around the globe have shaped their own internationalisation strategies. Among other examples, this influence can be observed in the development of the European model of university internationalisation. Guri-Rosemblit (2015) highlights three main moments in that process: the establishment of the Erasmus Programme in 1987, the enactment of the European Higher Education Area, popularly known as the Bologna Process, in 1999, and the adoption of the Lisbon Strategy/Europe 2020, in 2000. All three follow a model of promotion of students' and scholars' mobility among European HEIs. For decades, the level of internationalisation of a university has been measured by its national composition (percentage of students and scholars from other countries against the total number of national students and scholars) and bilateral agreements to promote mobility and exchanges between universities have been the preferred mechanism used to pursue it.

A qualitatively different approach can be detected in the fourth and fifth moments: the promotion of internationalisation at home and grounded internationalisation practices; and the enactment of the European Universities Initiative.

1. For a historical review of the concept of university internationalisation in Europe please see Guri-Rosenblit (2015) and de Wit et al. (2015).
2. The dominant practice has been the establishment of agreements between universities that allowed them to send North American students to attend European universities for a term or a year. Credits gained during the stay are recognised as part of the curriculum, even when the focus of the activity is placed not on the academic content but the overall cultural and personal experience of the student during their time abroad. For a history and evolution of the Study Abroad industry in the U.S., see Hoffa (2007).
3. Although when the exchange mode has been promoted, the dominant way in which tens of thousands of North American university students spend a term abroad every year is a commodified one. The most extended practice in Study Abroad is for the sender university (or a third-party provider) to purchase from the host university several credits and other services for their students. Cultural and academic exchange becomes a commercial experience, in which one party buys and the other sells.

Authors like Crowther et al (2001), Knight (2004), Hudzik (2011), Leaks (2015), Beleen and Jones (2015) and or De Wit (2011) have summarised and theorised the main features of the internationalisation at home proposal. It consists of a set of policies and practices aimed at promoting and enhancing the international spirit of an institution through activities that do not involve international mobility. The main goal is to broaden the understanding of what counts as HEI internationalisation, and it is based on the necessity of promoting a more sustainable and cultural and socially inclusive approach to it. Beleen and Jones (2015) define internationalisation at home as ""(...) the purposeful integration of international and intercultural dimensions into the formal and informal curriculum for all students within domestic learning environments." (p. 69)

As Beleen and Jones (2015) pointed out, there are two other intertwined concepts of internationalisation at home: comprehensive or grounded internationalisation, and internationalisation of the curriculum. To define comprehensive internationalisation, they proposed using Hudzik's (2011) definition: "(...) a commitment, confirmed through action, to infuse international and comparative perspectives throughout the teaching, research and service missions of higher education" (p. 60). Hudzik added that the concept of comprehensive internationalisation "(...) shapes institutional ethos and values and touches the entire higher education enterprise. (...) Comprehensive internationalisation not only impacts all of campus life but the institution's external frames of reference, partnerships and relations" (2015, p. 60).

Regarding internationalisation of the curriculum, Beleen and Jones (2015) suggested using Leaks' (2015) definition: "[i]nternationalisation of the curriculum is the incorporation of international, intercultural and/or global dimensions into the content of the curriculum as well as the learning outcomes, assessment tasks, teaching methods and support services of a programme of study". (p. 61)

All three concepts acknowledge the pertinence of multicultural dimensions and global focus in the making of relevant HEI policies. However, in this field, effectively going from theory to practice is a complex endeavour that implies a certain level of institutional transformation at internal and external level. How HEIs respond to challenges depends on their characteristics, institutional culture, model of governance, geopolitical location, and national and regional backgrounds.

The fifth moment came with the launch of the European Universities Initiative in 2019, which promoted large transnational, long-term European university alliances (see European Commission, 2019a). The European Commission envisioned the permanent alliance of European HEIs as a key factor in the construction and strengthening of a European knowledge society (see European Commission, 2019b). This initiative, at least partially, breaks up the logic of HEIs' individual competition for resources and students, and instead promotes a collaboration framework. It is also important to mention that, albeit with limitations, their proposal includes some forms of collaboration with non-European HEIs. But the main interpretation of what a global knowledge society is, at least according to the official documents released to support the project (see Council of the European Union, 2021) seems to be narrow. Beyond the call to address global problems and include global players in the discussion, the official European conception of a knowledge society is not truly global but regional. It does not advocate tackling the obstacles that prevent the construction of a global academia, which would be a very powerful catalyst in the creation of a global knowledge society. Instead, it promotes a model of competition between networks of European universities, hoping that this will generate a natural process of distillation and institutional enhancement to place European academia in a better position in the global academic scenario.

As mentioned at the beginning of this section, understanding university internationalisation strategies means opening up the scope and paying attention to a broader geopolitical context. It is interesting to note that, on occasions, HEIs based in developed countries tend to follow a two-tiered model for agreements on exchanges, collaborations and alliances, according to the country, region or perceived prestige of the counterpart. In that sense, the terms of agreements with peer institutions located in developing countries sometimes mimic those of cooperation for development, in which one party has the resources and sets the main terms and the other party accepts it, under certain conditions that they are not allowed to change. As in other aspects of globalisation and the knowledge society, resources matter, and the wide gap in HEIs' finances makes it extremely difficult to level the playing field for

all participants in this game. As Jones and de Wit (2014) stated, internationalisation is still understood in terms of a Westernized, Anglo-Saxon and English-speaking paradigm, even when there are sound arguments advocating for a new model of HEI internationalisation. That new model needs to be based on a wider and smarter understanding of the powerful role that HEIs from developing countries can play in the resolution of global issues. This perspective must be effectively applied to the setting and the structure of international alliances, networks or other mechanisms of HEI association, to promote a more democratic, culturally diverse and inclusive scenario.

However, current prevailing internationalisation strategies, with a few exceptions, still follow a centre-periphery and competition model. Among other factors, as we mentioned in section 1.1, university rankings and other competitive settings have contributed to the establishment of HEI hierarchies that usually penalise institutions in developing countries. Unfortunately, a ranking position results in a "Matthew Effect", in which the richer and best-positioned universities get more resources, and the poorer and worst-positioned get less[4].

This conception of centre-periphery and national competition can even be detected in internationalisation practices not exclusively based on the international physical mobility of students and staff but on what has been called comprehensive internationalisation, internationalisation at home, or internationalisation of the curriculum. As Leask (2015) pointed out:

> "Debates about internationalisation often evoke nationalist reactions akin to those against colonialism, as scholars search for alternative and legitimate knowledge regimes and paradigms. One of the challenges facing higher education institutions in the developing world that are seeking to internationalise is to resolve the tension between the competing needs of local versus global development, achieving an appropriate balance between developing the skills, knowledge and mind-sets needed to support national development and those required for the successful participation of individuals and the country in a globalised world." (p. 21)

4. This effect can be observed, for example, in the results of calls for highly competitive research grants, in which those usually considered to be world-class universities get the best results every single time. See Bol et al (2018).

2. From internationalisation as competition to internationalisation as global collaboration

The current trends in HEIs' internationalisation strategies usually imply a combination of policies and practices from all the above moments. Elements of academic diplomacy, language learning and exposure to different cultures through the exchange of students and staff coexist with initiatives to make curricula internationally and globally oriented, as well as promoting collaboration and alliances with other HEIs. The weight of each of the initiatives in each university's strategy will vary according to factors such as the institutional culture, the institution's degree of autonomy, its financial capacity, its relationship with the local community, etc. These tools can enable the implementation of new internationalisation models to help universities fulfil their social function, moving from the international competition paradigm to a global collaborative paradigm. The task is not easy, even when among universities from all around the world there is strong consensus on its relevance and urgency. As stated by GUNI (2021):

> "[i]n recent years, we have witnessed an unprecedented need and willingness to connect and cooperate. However, we have also seen narrow-minded conceptions, based on nationalism and "we first" policies. We believe the context requires us to think about and develop new visions for higher education and its institutions, missions and values with regard to the public good and social responsibility." (p. 6)

The chapters in this report show the ways in which HEIs are immersed in an entangled setting. The idea of collaborative networks can be very helpful on this point, in particular when paired with other initiatives, like the active promotion of institutional diversity, the internationalisation of the curriculum, collaborative actions with local players, and a commitment to more sustainable and equal access to international exchanges. Integrating into networks allows HEIs to improve their performance and amplify their impact without compromising on their autonomy or identity. Although there are strong and well-established obstacles that could prevent this change of orientation, there are also enablers that could pave the way for it.

A well-functioning network is one in which different players have different roles and collaborate with each other for a common purpose under a win-win logic. Some players may win more than others. But those who win more are precisely those who are more and better connected, those that take more advantage of a cooperative scheme, and not those who decide to free-ride or compete unilaterally. Networks, of course, can and do compete among each other. But those that are internally more closely connected and cooperative will be externally more competitive (see Benkler, 2006 and Slaughter, 2017). Additionally, successful networks are those that are able to collaborate with some external players other than HEIs, such as governments, corporations and civil society organisations. Benkler (2006) identified three dimensions in which a network positively impacts on its participants:

> (1) it improves their capacity to do more for and by themselves; (2) it enhances their capacity to do more in loose commonality with others, without being constrained by having to organise their relationship through a price system or in traditional hierarchical models of social and economic organisation; and (3) it improves the capacity of individuals to do more in formal organisations that operate outside the market sphere (p. 8).

Among the obstacles: some of the actions that could contribute to change are beyond HEIs' capacities, others could be held back by faculty due to being perceived as a threat to institutional core values, like autonomy, and, as usual, there is a widespread lack of resources that undermines change and demoralises academic and non-academic staff. The list of enablers includes: the view, shared by HEIs located in different regions and countries, that collaboration, diversity and community engagement are key assets to the present and future of institutions; the successful experience of exchanges and other policies and practices for internationalisation, showing the benefits of opening up institutional boundaries; and the support of already existing networks and associations, like GUNI itself, that promote the creation of institutional learning communities.

The idea of HEI networks and alliances builds on the most important and radical value in human societies: the value of cooperation or collaboration. Networks of universities can and must therefore create collaborative schemes of interaction and interdependence among them that are necessary not only to strengthen the individual members of the network but also the global common good, articulating the enormous potential of universities' global collective intelligence at the service of this global common good.

To contribute to an action-oriented collective discussion, we would like to propose some indicators that could help us to picture the complexity faced by any HEI when undertaking the endeavour of collaborating and coordinating policies and practices with other institutions at local or international level.

We have identified six indicators that could help in mapping the strategic position of a university when addressing a collaboration scenario. We believe that one of the factors that might contribute to facilitating integration in collaborative endeavours is to understand the traits that partly shape HEIs' institutional identity. Please note that these indicators are conceived as a self-assessment tool that could help universities to visualize their position in relation to potential integration in coordinated actions with other players. None of the indicators are good or bad per se, they just represent the situation and could help to identify obstacles and enablers, as well as determining areas in which the university has room for manoeuvre and areas in which the decision is beyond its scope. It could also be helpful to identify partners, based on similar or complementary characteristics.

Even when the indicators are not dichotomic or continuous, it is easier to understand them if they are presented in pairs. The pairs are competitiveness/collaboration, divergence/integration and singularity/homogeneity.

The first pair, **competitiveness/collaboration**, attempts to capture the institutional disposition and mental framework of an HEI towards zero-sum (competitive) and collaborative (win-win) approaches. Variables like participation and position achieved in international rankings, competition for external grants and other resources, as well as the preference for meritocratic and individual results-oriented procedures in the award of scholarships and rewards to students and academic staff are examples of how relevant and integrated into the institutional culture competitiveness is. However, participation in open-science projects, sharing of facilities and resources with other institutions, promotion

of collective problem-solving procedures, participation in collaborative projects with the community, NGOs and other non-academic players, and participation in networks or alliances work as a proxy for the prominence of collaborative approaches.

The second pair, **divergence/integration**, focuses on how idiosyncratic or homogenised academic procedures and regulations are. To build the divergence indicator, it might be useful to pay attention to variables like the difficulty or ease of recognising credits attained in other institutions (national or international), the length of offered degrees, and grading systems. Integration could be measured by considering policies regarding the exchange of students, faculty and staff, bilateral or multilateral agreements with other HEIs, as well as joint or double degrees.

The third pair, **singularity/homogeneity**, concentrates on the characteristics of the academic offering, paying attention to its unique or common traits. Looking at the singularity indicator, we could consider variables like the presence of a teaching offering in native languages, the uniqueness of an academic offering or teaching and learning methods.

Area	Indicador	Expressed as
Mental framework	Competitiveness	Ranking position and performance measurement are focal points in the university's strategy.
	Collaboration	Collaborative endeavours and local and international partnerships are focal points in the university's strategy
Procedures	Divergence	Internal procedures and requirements, like access, grading and credit recognition follow an ad-hoc pattern
	Integration	Procedures to promote the exchange and circulation of students and staff are flexible and accessible
Academic offering	Singularity	The academic offering is specific and unique, with the presence of one-of-a-kind degrees or faculty
	Homogeneity	The academic offering and contents follow an internationally standardised approach

The proposed indicators are not dichotomic or continuous. Every university necessarily has all six components, at different levels and in different configurations, and they may be expressed in different institutional areas. Any accurate and action-oriented analysis of their strategic situation and the potential room for change must take many variables and particularities into account. It is imperative to avoid the one-size-fits-all approach that characterises some styles of policy recommendations, because these changes are not peripheral; on the contrary, they will probably affect universities' central components and structures.

Final remarks

HEIs are asked to open their institutional boundaries and establish effective channels of collaboration with other organisations. This requirement poses new challenges in terms of university performance, finances and governance. As Carvalho (2021) mentioned, these are not new requirements, but in the last decade have been crystallised and consolidated as part of universities' core functions. She warned against dichotomic interpretations of the policies and practices established by HEIs in that context, as they are usually too pessimistic or too optimistic, and proposed bringing back into the discussion the relevance of institutional, social and political particularities. This recommendation is particularly appropriate for analysing internationalisation policies and practices.

HEIs' internationalisation is an ongoing innovative endeavour that is expressed in different ways. It has the potential to make a crucial contribution to institutional transformation and to create a more inclusive and sustainable world, reinforcing the ideal of global citizenship. Internationalisation can also redesign the boundaries of academic communities, making them more open and inclusive, and reinforcing their commitment to the pursuit of knowledge and the common good. However, its actions must be aligned and supported by the whole institution. HEIs' internationalisation policies and practices may act as catalysers of internal change but cannot act separately from the rest of the institution to which they belong. They can function as a laboratory for innovative practices, but if they really want to promote change, their actions should not contradict the core values of the institutional culture.

The guiding principles of this chapter are extremely respectful of the unique cultural and social character of HEIs. As Page (2007) stated, in a knowledge society diversity is a value per se. Respecting and promoting HEIs' institutional identity and particularities is a necessary prerequisite of any collaborative intervention. In that sense, the challenge for higher education institutions committed to significant change is to find a balance between competitiveness and collaboration, between divergence and integration, and between singularity and homogeneity, in order to better serve their institutional values and mission. Even when there is no single or simple solution, it could be helpful to think of strategies that combine institutional flexibility, openness and a commitment to transparency, and the courage to innovate.

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1.8 Governance and professionals. Building resilient, innovative and socially committed institutions

1. Introduction

As the contributions in this report show, Higher Education Institutions all around the globe are at a critical turning point. Among other factors, extraordinary internal and external demands, structural financial troubles, large demographic changes, global challenges and emergencies bring global and HEI governance into the centre of the picture.

In the field of public and private management, recent and not so recent literature has tried to answer the question of how to adapt classic principles and guidelines of governance and management to exceptional situations, times of crises and emergencies (i.e., Comfort 2007, Crandall et al. 2013). In this sense, HEIs face certain specific challenges and possess some features that make them special. Aas Shattock (2014) states, "(...) in the modern world, university governance structures are in a constant transition and adaptation process to respond to external pressures in a way we have not seen before". Institutional autonomy, financial independence, sufficient and stable funding, decision-making capacity, self-government, and internal leadership are some of the elements that form the basis of university governance. These elements, which had been redefined in the last two decades, are deeply affected by the complex relationship that universities maintain with their corresponding governmental bodies, whether at the regional, national or supranational level. A variable interplay between internal governance and power elements, external constraints, and a general narrative of promoting competitiveness and incorporating market elements, have forced HEIs to undertake profound changes in their governance systems.

This chapter explores how different models of HEI governance can contribute to fulfilling their commitment toward serving their communities as well as the global public interest. An unavoidable question that demands our full attention is the role that higher education institutions' governance need to play to honour its commitment towards a fairer and more sustainable society. Public universities are a pole and a privileged engine for innovation and social change, and the construction and dissemination of knowledge. For universities to fulfil this role, it is essential to find governance models that allow the best articulation of the institution's interests with the needs of its community and the global society in which they are immersed. The human factor is undoubtedly the most decisive factor for any higher education institution. Having qualified teaching, research and management staff committed to university activity is key to building resilient, innovative and socially committed institutions. The final section of this chapter addresses the challenges for HEI professionals and the reshaping of profiles in a changing world.

All in all, it should be made clear that **it is not a matter of finding a single governance model and replicating it, nor a single professional profile; quite on the contrary. Particularly in complex issues like this, it is essential to think of flexible models and profiles that can incorporate cultural, national, organizational, and the institution's own academic cultures and specificities**.

2. What is the governance of higher education institutions?

The notion of "governance of higher education institutions" should be regarded as self-evident by everyone involved in this sector. However, it is not so simple. As it happens, there is not a unique, broadly accepted definition of university governance. But, besides differences and nuances, all definitions of the concept focus on some common elements:

A) **Decision-making:** Who makes decisions about the internal government of the university and how they are made?

B) **Election:** How are authorities elected (even if there is some ambiguity about who counts as "an authority")?

C) **Autonomy:** What is the institution's degree of autonomy with respect to the corresponding national, regional or supranational governments?

D) **Stakeholders:** What is the role of other relevant stakeholders, such as students, unions, donors, and others, in the university's decision-making processes?

E) **HEI interaction:** How does the university interact with other universities and research centres, especially those with which they have partnerships, alliances, or networks?

F) **Openness:** What relations does the university maintain with other sectors of society, such as NGOs, civil society leaders and movements, neighbours, etc.?

G) **Funding:** What factors affect its capacity to have sufficient funds to develop its objectives.

The OECD (2003) defines HEI governance as:

> (...) a complex web including the legislative framework, the characteristics of the institutions and how they relate to the whole system, how money is allocated to institutions and how they are accountable for the way it is spent, as well as less formal structures and relationships which steer and influence behaviour. (OECD, 2003, p. 61)

In the same vein, the Oxford White Paper on University Governance (2006) states that university governance implies not only institutional decision-making processes but also the procedures, actions, and practices implemented to achieve those decisions. Shattock (2014) emphasizes institutional autonomy, self-government, and the distribution of authority within universities as the main components of university governance and remarks on the relevance of funding arrangements. In fact, he considers that the nature of funding is "the most influential driver for change in institutional governance structures (...) because they provoke the need for new decision-making processes and demand greater attention to institutional strategies." (p. 12)

These and other definitions of the concept of governance also reveal the existence of two forces that shape the space of potential decisions: on the one hand, the heritage and particularities of each university's own institutional culture; on the other, the conditioning factors imposed by national or supranational governments. It should be noted that these conditioning factors not only imply compliance with mandatory regulations and norms but can also set courses of action, propose curricular content, and set objectives to be pursued by HEIs. The relationship between these two forces creates a dynamic tension that is often read as the limits of university self-government and autonomy, but in reality, implies a much more complex agenda (see, Frolick et al. 2013, and Kraatz and Block 2008).

The relevance of HEI governance analysis implies the recognition of the centrality of universities' actions and performance in a knowledge society, as well as the important role that other actors play in this endeavour. It also highlights the relationship between HEIs and governments, civil society, businesses, and citizens. Analysis of the different models of university governance, though, provides insight into how universities shape their position in the global knowledge society, in which they are key players (see GUNI, 2017). A recurring question in the literature is to what extent the influence of globalizing processes and immersion in the knowledge society contribute to a confluence in university governance models. Although it is possible to detect common features, such as the inclusion of some types of market and competition mechanisms, there are still important spaces for the expression of particularities. As Capano and Jarvis (2020: p. 12-13) have recently pointed out,

> While this is not to dismiss the emergence of important cross-national governance trends or growth in global systemic forces impacting national higher education systems, it does suggest that cultures of governance continue to display national specificity and that there are limits, or at least differences, in the degree to which internationalizing forces or 'globalizing models' impact national contexts.

In sum, different definitions of university governance have been given, but they all usually refer to a series of elements, the specific combination of which may define other models of governance that might differentiate and particularize universities across the world.

3. A brief review of models of HEI governance

In his seminal work of 1971, **J. Baldridge summarizes and reconstructs three university governance models: *bureaucratic, collegial and political***. The bureaucratic model is based on the Weberian idea of bureaucracy. Baldrigde (1971) identifies five elements that highlight the Weberian bureaucratic components of a university:

1) Being "a complex organization chartered by the state" implies that "the university is thus a corporate person with public responsibilities" (p. 3).

2) Its formal and strictly ranked hierarchy.

3) The existence of internal formal channels of communication that must be respected.

4) The "bureaucratic authority relations, with some officials exercising authority over others (...)" (p. 3).

5) The existence of formal policies and regulations "that hold the university together and govern much of its work" (p. 3).

The collegial model, also called the republic of scholars, can be understood in three different ways, according to Baldrige (1971). The first refers to an aspirational understanding of how a university should be managed. Following that approach, the participation of all academic community members should be granted and promoted, and the decision-making process should privilege the point of view of scholars, free from the interference of bureaucrats and other officials. The second one refers to the level of professionalization of the academic community: "The scientist in industry, the military advisor, (...) the physician in the hospital, and the professor in the university are all examples of professionals whose influence is supposed to depend on their knowledge rather than on their formal positions." (Baldridge, 1971, p. 5). In this thread, the emphasis is placed on the unique professional skills and abilities that make scholars the most suitable actors to define university policies and actions. Finally, the third meaning of the community of scholars refers to the fact that the university should be a refuge and a bastion against the dehumanization of society: "[m]any critics of this impersonal, bureaucratized educational system, including students, are calling for a return to the "academic community ", with all the accompanying images of personal attention, humane education, and "relevant confrontation with life" (p. 6).

Regarding the political model, Baldridge presents it as an intermediate and most realistic approximation to real-life university governance: "[w]hen we look at the complex and dynamic processes that explode on the modern campus today, we see neither the rigid, formal aspects of bureaucracy nor the calm, consensus-directed elements of an academic collegium." (p. 8) He claims that the discussion about HEIs governance should recognize that universities are politicized institutions:

> "there is a complex social structure, which generates conflicts; there are many forms of power and pressure that affect the decision-makers; there is a legislative stage in which these pressures are translated into policy; and there is a policy execution phase, which eventually generates feedback with the potential for new conflicts" (p. 12).

It is interesting to note that, even though this article was written 50 years ago, the issues it addresses are still relevant, as evidenced by discussions about the role of bureaucrats v. academics, the limits of university autonomy, the professionalization of staff, the dehumanization of university teaching and learning, or the complex power relations among universities and governments. However, those models have been criticized and re-elaborated by other scholars (for a review of theoretical critiques, see Clark 1983, Paradeise et al. 2009, Frolich et al. 2012), and several alternative models of analysis have been elaborated. Among them, **it is worth mentioning the contribution made by Bleikie and Kogan (2007), who noticed and summarized the passage of HEIs from the idea of a republic of scholars towards a stakeholder organization, because it captures the moment in which market and competition mechanisms arise and consolidate as an integral part of university governance**.

According to Bleikie and Kogan (2007), the approach of HEIs as a stakeholder's organization considers institutional autonomy "a basis for strategic decision making by leaders who are assumed to see it as their primary task to satisfy the interests of major stakeholders and where the voice of academics within the institutions is but one among several stakeholders" (p. 477). In that model, the academic community is one of the stakeholders, but not the only one. Therefore, their voice and position is still valuable but modulated and accommodated with the demands of other stakeholders.

They identify these central components of that change in the main governance structure:

1) Governmental actors (national and supranational levels) have "[a] far stronger role for central authorities in determining university objectives and modes of working" (p. 479).

2) New managerial structures are created within the university, and, in some cases, they replace decision-making structures traditionally integrated by scholars.

3) The replacement of collective representative boards such as university senates "by councils and boards of trustees who incorporate representation from the world of business, public services and politics " (p. 479).

4) "[a] movement of power so that institutional leaders — rectors, presidents or vice-chancellors — who used to act as primi inter pares are now nearer the position of chief executives running a corporate institution." (p. 479)

Even when models are always an abstraction, it is easy to recognize several of the abovementioned traits in current discussions about the future of universities. In fact, in some cases, an institutional palimpsest can be observed when looking in detail at any university: elements for all those models, from the bureaucratic to the managerial, can be found. Managerialism, though, still strongly influences how good university government is conceived, probably because the paradigm of competence and excellence sounds desirable for more than one group of interest or stakeholder, especially in heavy research-oriented universities. As Bleikie and Kogan (2007) state,

> A powerful force lending support to the growth of managerialism has been the assertion of quite penetrative quality assurance procedures that replace the hitherto 'trustful' relationships between academics and their institutions as the belief in 'transparency' has replaced trust in expert and professional knowledge. Both research and teaching and learning are assessed by a variety of measures, including various forms of external review, benchmarking, and performance indicators that shift judgements from the academic profession towards external bodies and institutional management (p. 480).

But those models are pre-knowledge societies, and it is time to adopt a new model that could answer the challenges of a network knowledge society. It is not that the elements highlighted by these accounts of HEI governance are no longer useful or relevant. But societies are changing fast and profoundly, and universities must do the same to respond to the challenges and pressures of our new world. When everything changes so fast, key actors must become flexible and adaptable in unprecedented ways if they want to survive. This is why some ideas that are missing in the more traditional accounts of HEI governance, such as their capacity to collaborate, their ability to be more open -following the paradigm of open government and open institutions that have become dominant today-, and their capacity to get new stakeholders and citizens involved in co-decision-making processes result nowadays critical. The following section develops these three elements briefly.

4. Towards an open, collaborative and flexible model of HEI governance

As stated in the UNESCO World Report Towards Knowledge Society (Bindé, 2005), HEIs "are destined to play a fundamental role in knowledge societies, based on radical changes in the traditional patterns of knowledge production, diffusion and application." (p. 87) This concept of knowledge society and the universities' role in it is also very challenging to universities. It fully recognizes HEIs as key actors in producing and disseminating knowledge, but they are no longer the sole actors that can or should create and disseminate knowledge. In fact, the main concept of knowledge society states that knowledge production and dissemination is distributed among different actors, from the public and the private, from the non-profit and the for-profit, from the formal and informal sectors. It also implies that HEIs are requested to open their institutional boundaries and establish effective collaboration channels with other organizations.

That requirement poses new challenges in terms of university governance. But, as Carvalho (2021) says, it is important to avoid dichotomic interpretations of the policies and practices established by HEIs in that context, usually too pessimistic or too optimistic, bringing back to the discussion the relevance of institutional, social, and political particularities in that respect.

Returning to the question posed at the beginning of this chapter, it is important to identify which model or combination of models of university governance favours the best fulfilment of the mission of universities in the midst of the knowledge society, in an interconnected world that requires collective efforts to solve crucial global problems.

Without wishing to promote a standardized approach, **four elements should be carefully considered regarding successful governance models: respecting the vernacular institutional culture, guaranteeing the participation of the entire academic community in decision making, promoting the appropriate combination of elements of competition and collaboration with other universities, and promoting the participation of the local community in university affairs**.

Regardless of the particularities of each case, there is a common factor that cannot be ignored: the leadership exercised by university authorities and their staff, both academic and non-academic. Any proposal to transform the governance system must empower the autonomous leadership of each institute, or it will be doomed to failure. As Capano and Jarvis (2020) state "[u]niversities bring together groups of individuals performing very different jobs (e.g., the job of a biologist versus that of a historian, or the job of a computer technician versus that of a help desk employee), numerous intertwined decision-making processes, and a great variety of institutional outputs (...)" (p. 71) Understanding and respecting that complexity requires a leadership style that it is not easy to find, because governing a university is an extremely turbulent process that requires unique skills. Especially now, when trying to build HEIs that can integrate and collaborate with institutional peers, nationally and internationally, is one of the inevitable tasks that must be undertaken.

Finally, and in the same direction as the previous paragraph, how can universities involve new stakeholders and citizens in their actions? How to make the institution's limits more permeable without jeopardizing the values of university autonomy and academic freedom? How to reconcile the seemingly exclusive objectives of pursuing academic excellence and the inclusion of marginalized sectors of society from access to the university? The answers to these questions are by no means simple, nor can they be answered by a single person. The very reflection on the governance systems of universities tests the self-critical capacity of the academic community and should invite us to explore paths that, although they may seem uncomfortable, will allow us to overcome the bottleneck in which many HEIs seem to find themselves trapped in nowadays.

5. Professionals in higher education institutions: changing profiles in a world in transformation

The human factor is undoubtedly the most important for any higher education institution. Having qualified teaching, research and administrative staff who are committed to university activities is vital to construct institutions that are resilient, innovative and socially engaged. This was also the case in the past: attracting and retaining talent has been an essential strategy for the proper function of education and scientific research, and for effective and efficient management.

However, the profile of higher education institutions' professionals is changing and will continue to change significantly in the coming years. Regarding the teaching function, new profiles of academics should be hired who are experts in a set of new disciplines, in line with the technological and socioeconomic revolution that we are experiencing. The role of teaching staff is also being transformed to a great extent. In the past, teachers were figures who possessed knowledge and information. Now, their role is mainly as mentors and tutors who support students in their training and development, as qualified professionals and citizens. The extensive and intensive use of digital possibilities and information and communication technologies will revolutionise classrooms and ways and times of teaching. Consequently, the function and pedagogical strategies of teachers should be reconsidered. The research task will also need new professional profiles. It will require people who are more experienced in many forms of collaboration and teamwork with experts in other disciplines and with other institutions. They will be more open to co-creation with social institutions and citizens, more attentive and committed to the impacts of their research on society, more centred on social challenges and problems than on academic disciplines, and with a clear focus on the social, cultural and economic applicability of their research function. They will have a local and global focus and the capacity to work in a network at international scale on challenges, specific projects, interuniversity partnerships or knowledge partnerships with companies, institutions and civil society.

This process of reformulating professional profiles in higher education institutions will also occur in the management area. First, professionals will need to have a higher level of qualifications, given that an increasing number of repetitive, automatable tasks will be carried out by machines, robots and software. Management professionals will be required to have greater added value and the highest level of specialisation and efficacy.

One notable aspect in this area is the increasing blurring between teaching and research staff on the one hand had management staff on the other. This division, which was very clear until a few years ago, will gradually be blurred to give way to more hybrid profiles. For example, teaching management staff could play a key role in students' learning or a research manager could be an important link in research projects. This is already occurring in all research projects that require the use of advanced scientific and technological research infrastructure, specific software, laboratory and materials management, field work or experimental studies, etc. At the same time, teaching and research staff are participating extensively in management, organisation and planning tasks to support their teaching and research function. Therefore, higher education institutions must break increasingly imaginary barriers and make a clear commitment to qualified, multi-talented hybrid profiles of people who are open to collaboration and to flexibility and permanent innovation.

In a discussion of professionals, we should mention talented young people who are in training and development. Unfortunately, in recent years, many countries and many higher education institutions have experienced crisis conditions, with budget cuts and a lack of expectations beyond the immediate future. This has had a significant impact on the lack of expectations for the stabilisation in employment of young academics and managers and the development of a decent, attractive professional career. Unfortunately, this impact is much more notable in developing regions and countries, where the lack of prospects and the often precarious situation of academics and managers makes it impossible to construct resilient institutions with added value. Therefore, it is vital to further strengthen all policies that enable the professional development and stabilisation of young talent in higher education institutions.

A strong commitment to women's talent must be one of the key factors in the reconsideration of higher education institutions. Specific policies and grants should be promoted to enable a professional career that is as decent as that of men, to break the glass ceiling and enable women to access positions of responsibility (in academia, management, leadership, singular projects) under equal conditions. In addition, policies and grants should foster women's presence in academic areas that are still very male-dominated.

In this context of change and transformation, higher education institutes should also be focused on social needs and problems. They should be able to carry out their academic activity with a social focus and break the classic ivory tower of traditional universities. Universities should work with and for society to be able to develop the knowledge society together, to construct what is known as the democracy of knowledge and to become more cultured, resilient, critical and collaborative societies.

Management and leadership in a broad sense should also be discussed. Here, we refer to intrainstitutional leadership for the strategic management of institutes and the leadership of schools, faculties, departments and institutions of all kinds within higher education institutes. We refer to the leadership of teams, which are increasingly hybrid and multidisciplinary. We refer to integrative leadership that promotes everyone's collaboration and participation to reach shared goals. However, we also refer to leadership outside of institutions, with other social, political and economic agents or citizens, through specific missions or projects. Higher education institutes of the present and the future require solid leadership that is effective and inclusive. At the same time, this leadership must extend to society so that higher education institutes become real beacons in the task of working towards the progress, wellbeing and competitiveness of societies. For these reasons, the training of managers and shared, solid leadership should be given sustained attention as a priority.

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GUNi Vision

The vision of the Global University Network for innovation (GUNi)

The development of a vision helps us to define the final point we want to reach; what we want to become and attain within the timeframe. The vision aims to inspire horizons of transformation and should enable us, by observation, to outline institutional strategies and objectives, as well as the action plans to achieve them.

The GUNi World Report, entitled New Visions for Higher Education Institutions towards 2030, aims to define recommendations for universities worldwide within this timeframe. Accordingly, the main focus is on institutions, without losing sight of their embeddedness in higher education systems. **Higher education institutions (HEIs)[1] are called on to rethink their social function and strategies in the coming years** in the context of major technological, economic, social and cultural transformation. Therefore, **the GUNi World Report focuses on university institutions and their capacity for transformation and innovation in this change of era and within the timeframe of the United Nations' 2030 Agenda.**

This vision is drawn from GUNi's fundamental values and mission and our desire to promote the transformation of higher education towards greater public service, relevance, social responsibility and innovation. Likewise, at GUNi we promote the exchange of resources and experiences and seek to encourage group reflections and the joint production of knowledge for change. The vision being presented is also therefore drawn from the contributions and views of GUNi's members.

Moving beyond words, this vision creates a space for active transformation which, together with the report as a whole, will constitute the stepping stone for a wider and more ambitious project entitled "GUNi International Call for Action (2022-2025): Rethinking HEIs for Sustainable and Inclusive Societies".

1. In this text, the concepts of higher education institutions and universities are used interchangeably.

Starting point

Our starting point is to **consider higher education and knowledge as public goods which must be preserved and promoted by governments and public institutions to enhance progress, well-being and competitiveness.** This means opening up higher education, knowledge and research to society (both public and private institutions), and establishing policies for equal opportunities, equity and access to higher education.

Given the trend in recent decades for a certain degree of standardisation of higher education institutions (for example, through indicators, standards and rankings that prioritise research and the impact of scientific publications over teaching and learning), the report supports the richness of a plurality of models. There is no ideal, single model of university to which we should aspire. Instead, there are a range of models which are equally valid and relevant. We advocate the promotion of institutional plurality as a source of richness and a necessary response to diverse social contexts and needs. What makes university institutions equal is the desire to achieve quality in service to society.

We know that knowledge, talent and scientific research have become key factors in progress and well-being. Although universities have lost the monopoly on knowledge (which is increasingly widespread), they are now key institutions in the knowledge society. Making a commitment through public policies to construct innovative universities is vital if we want to build societies and economies that are resilient, sustainable and progressive. Universities could become beacons for society and leading institutions. They could serve as a space for testing and innovation. They could become centres for discussion and co-creation, taking advantage of their neutrality and prestige. They could be catalysts to ask the right questions and establish ways of working with other social players to find potential solutions.

In this context, it is essential to reflect on the added value provided by HEIs, focussing on the guidance and support provided during the training process, the sense of community and network, the transmission of frameworks and learning pathways at different times of life, interdisciplinarity and encouragement of the capacity for discernment, all of which contribute to individual and social transformation.

The complexity of social problems today, at local and global level, requires expert and scientific knowledge to introduce the most suitable public policies. Dialogue between politicians, public management and academia should be continuous and promote social advances and progress. A good example of this can be found in the crisis caused by the Covid-19 pandemic and the extraordinary effort made by universities and research centres and their respective governments worldwide to create and share knowledge in record time.

As mentioned above, the world is facing enormous political and social challenges; these include poverty, inequality, mass migration, xenophobia, popularism, the climate emergency, technological and scientific revolution, and the required environmental, social and economic sustainability. We believe that **universities, in this context, must position themselves socially with all the rigour that should define them, and all the conviction of institutions working for the common good and the progress, peace and well-being of humanity.** We therefore call for **universities that are committed and open,** not closed in on themselves and self-satisfied.

This social responsibility must be translated into **a clear institutional commitment:**

- **to students,** putting them at the centre of the university mission and promoting their training as critical, free citizens and qualified professionals;
- **to knowledge and science,** constructed with and for society;
- **at local and regional level,** including the social and cultural fabric, the regional economic framework, public institutions and the community;
- **at global level,** by creating close links with institutions and networks worldwide to work together towards academic diplomacy and advances in education, science and culture as a source of collective and individual progress.

The social responsibility of universities has an excellent framework in the United Nations' 2030 Agenda and the 17 Sustainable Development Goals. Indeed, the 2030 Agenda establishes the main challenges and commitments for humanity and enables the design of a tool to reflect universities' institutional policies.

The Covid-19 crisis, with all of its severe consequences for humans and health, has also caused an immense social crisis. In education, it has led to an increase in inequality and once again revealed the power of the work done in schools, institutions and university faculties to fight against inequality and promote social mobility and socialisation. In addition, as we know, the pandemic has acted as a great accelerator in the rethinking of education in the digital era and has shown the advantages (and limitations) of the intensive use of communication and digital technologies for education throughout life.

How to achieve the vision

Reconsidering university institutions in this change of era is no simple task. We must break down the inertia and incrementalism preventing substantial change in institutions. **Universities must combine a commitment to change and innovation with the investment of considerable effort and resources to transform institutional policies.**

To achieve this, strong institutional leadership is needed. This should be based on management for organisational change that is flexible and innovative, with long-term institutional strategies that promote and amplify all the expertise and creativity of university professionals. This means constant investment in institutions' human capital and the professional development of teams with a strategic vision. Universities must work to expand management, academic and administrative teams, organise themselves more autonomously through missions and projects, and focus on being organisations that learn, adapt and unlearn.

Considering the potential of institutions and focusing on their agency, we must not lose sight of the fact that they are part of higher education systems which, in terms of structure, policy, politics, finance, quality standards, governance and laws, define their possibilities and delimit change. However, it is a matter of transforming and accommodating institutions and the system at the same time in order to meet the challenges that lie ahead.

The strategic capacity of universities must be based on broad institutional autonomy and, at the same time, full and exacting reporting to public authorities and society. In many countries, government actions can be observed that limit or question the autonomous capacity of universities. Some governments burden universities with procedures and controls that have

no added value, or directly establish programmes and public policies that cast doubt on this autonomy. It must be asserted that universities need to be autonomous in order to respond appropriately to social needs and demands, as well as being institutions that can guide society and remain at the forefront of thought and knowledge.

However, institutional autonomy does not in any way mean turning their back on society. In fact the opposite is true. **We are committed to universities that are highly porous, allowing them to collaborate with other public institutions, companies, civil society organisations,** etc. At local and regional level, universities must make the quintuple helix a reality. In the international arena, they must contribute to partnerships, networks and missions. At the same time, students must be at the heart of universities' raison d'être.

In addition, we believe that institutions must focus on contemporary social problems. They should provide interdisciplinary approaches to the complex challenges of society. This growing complexity requires comprehensive responses constructed from the shared depth of each academic discipline rather than through incomplete visions.

As we have stated on other occasions, we do not believe that universities face the dilemma (as many have tried to demonstrate) of choosing between competitiveness and innovation on the one hand, and cooperation and social commitment on the other. We consider that it is possible to develop institutions that are committed to being innovative and competitive, while at the same time being socially responsible and adopting close, frank formulae for cooperation with other universities and organisations.

Along these lines, we believe that **we must opt for an intelligent balance between competition and cooperation at the heart of university systems and at global level.** Competition often leads to improvement and added value. It enables the consolidation of institutions that are attentive to innovation and constant improvement. However, we must also opt for cooperative mechanisms between universities and higher education systems, through agreements within the system and the development of networks or partnerships that can multiply players' actions.

Main areas of transformation

Beyond what has been stated already, our vision is based on seven main areas of transformation. All of them are considered critical in the rethinking of university institutions and focusing them on the 2030 Agenda and Sustainable Development Goals. The areas are:

Sustainability
Reinventing universities for a sustainable future

The digital-human future
Constructing more inclusive, accessible universities

The future of work
Training in competencies and skills throughout life

Citizens
Promoting humanist values and profiles in a changing world

Knowledge
Putting research and innovation at the service of social challenges

Internationalisation
Reinforcing partnerships to achieve common goals

Governance and professionals
Building resilient, innovative and socially committed institutions

1. Sustainability: reinventing universities for a sustainable future

Sustainability can no longer be a general concept or a simple coat of varnish to be applied at the current time. Instead, sustainability must form a central part of the mission of higher education institutions, through radicalism and the generation of strategic programmes and initiatives. Universities must become driving forces behind the spread of sustainability while at the same time taking on a great responsibility for it.

We must make a commitment to including sustainability in a way that cuts across all aspects of higher education and avoids an isolated conception of sustainability as a subject or practice to be incorporated. Universities' contribution ranges from training and teaching to scientific research and knowledge transfer, promoting a new vision of their relationship with the world and the environment to transform HEIs' operation, management, training and research. Universities' responsibility also extends to agreements and commitments with other social, economic and cultural agents to jointly create transitions to sustainability.

We adopt a broad definition of sustainability that encompasses environmental, social and economic factors. In the educational field, social sustainability is closely related to universalisation of the right to education, the extension of training throughout life for everyone, gender equality, and direct support for minority and marginalised groups. In education, economic sustainability defines knowledge and education as common goods which must be preserved and promoted, with equal opportunities and policies for equity and redistribution.

Education and universities should be seen as real drivers for change and the sustainable transformation of our societies at local and global level. Globally, they can lead international collaborative programmes and projects that could address any of the 17 Sustainable Development Goals. At local/regional level, they can promote sustainability by educating through example or collaborating on sustainable development initiatives in the territory, society and the economy.

2. The digital-human future: constructing more inclusive, accessible universities

Digitalisation entails a great social, economic and cultural transformation that directly affects the foundations of higher education and university institutions. Digitalisation and widespread information (and disinformation) make possible it to reconsider the education function from top to bottom: the role of teachers, educational spaces and timetables, teaching methods and curriculum organisation. Digitalisation has also led to the emergence of many private suppliers in the educational field, who, in many cases, treat training as a highly profitable source of business with high demand in many countries. As we well know, the Covid-19 pandemic suddenly accelerated digitalisation at all stages of education, with little planning and very uneven results.

We consider digitalisation to be a powerful instrument for universal, inclusive and efficient education, constructing digital ecosystems for learning. In this area, we advocate blended university training models which at all times seek the potential of digital technologies at the service of learning and the richness and benefits of face-to-face on-campus training and added-value interactions.

Once again, we do not believe in just one model of university institution, but rather the introduction of a great diversity based on a range of educational models and the use of digitalisation, including high-quality universities that are completely online. Digitalisation breaks down the classroom walls and it is inevitable that all HEIs will eventually end up working with digital technologies to design and teach courses online.

Digital technology can also maintain and increase social inequalities and exclusions, as the experience of the pandemic has revealed, especially in the field of education. Advances in technology are associated with the many dimensions of the digital divide, including physical and economical access to technology, resources and connections on equal terms and of the same good quality, cognitive abilities to assimilate, understand and use the whole potential of technologies, social access in terms of freedom of use, equal opportunities and lack of bias in information, free circulation of knowledge and protection with regard to risks and security concerns.

Given the multiple dimensions of the digital divide, we are committed to the extensive digital training of citizens and the construction of good learning models that promote flexibility and adapt to different types of students and needs. At the same time, we call for investments and public policies focused on reducing divides. We must continue to work to reduce gaps through public funding of universities, regulations to guarantee quality education on physical campuses and in online studies, and a wide range of grants and financial aid for students. Special mention must be made of the vital investment in continuous training of academic staff on the use and implementation of digital technologies and adaptation to new trends that could be brought about by technological advances in teaching and research.

Digitalisation should also enable us to make education more personalised, by providing opportunities for

different educational models and learning strategies to promote learning self-management. Similarly, now is the ideal time to take advantage of the potential of digitalisation to bring about educational revolution and knowledge transformation through digital tools.

3. The future of work: training in competencies and skills throughout life

The job market is in the midst of a transformation, with radical changes that are affecting the classical conceptions of the industrial era. As higher education institutions are responsible for training qualified professionals, they must lead and respond to these challenges appropriately.

Universities should put teaching and training at the heart of their mission. They must be allocated sufficient resources to nurture future professionals and citizens and meet the training needs and demands of the current workforce in the field of lifelong learning. This clearly means putting students at the centre of universities' raison d'être. Students should be supported in their development and empowered in this context of a complex, dynamic job market. To achieve this, there are five key, complementary aspects that must be specifically worked on. They are as follows:

- Training in competences and deep knowledge, but also in human and social skills: adaptability, resilience, critical spirit, analytical capacity, creativity, innovation, social commitment, global citizenship, etc.
- Full acceptance of the paradigm of training throughout life. This means introducing a real university for all ages and all stages in higher and permanent education: skilling, reskilling, upskilling, micro-credentials and professional retraining.
- Interdisciplinary training with a focus on current and future economic, social, cultural and technological problems and challenges.
- The widespread introduction of practical and applied training with all its related opportunities, in close collaboration with other players and including dual training, work placements, service learning, etc.
- The availability of international training for all students through international mobility programmes, co-creation programmes, stays and exchanges, and the promotion of new models of internationalisation at home for all students.

This should be achieved while at all times promoting equity, equal opportunities and the participation of vulnerable groups and minorities in higher education. In addition, extensive student support programmes are required, including grants, salary grants and social aid. These challenges and key aspects must be worked on in collaboration with economic and social agents, governments, citizens and the business sector in order to obtain broad consensus and solid, lasting value propositions.

4. Citizens: promoting humanist values and profiles in a changing world

Universities have the mission to train free, critical citizens who are socially and globally committed. In recent decades, this function has been overlooked in favour of technical training for professional qualifications and entry into the job market. We advocate comprehensive training that goes beyond this division between training for citizenship and training for professional qualifications. Higher education institutions in today's complex, dynamic world must regain the values of free, critical, committed citizenship. They should defend these values with determination and apply them in all their fields of activity: training, scientific research, knowledge transfer, innovation, social commitment and internal management.

This institutional commitment should strengthen democracy and the values of human rights, dignity, equality, coexistence, divergence and disagreement, as well as respect for minorities. In accordance with their universalist aim, universities must help to construct a universal ethic which is shared by all humankind. HEIs' social responsibility includes the construction of peace and freedom, training in peaceful conflict resolution and boosting of community-based research, listening to social players not only for productivity improvement, but also to provide training in world citizenship and peace management. They must do this by moving away from centralism and neocolonialism, respecting and promoting cultural and linguistic traditions from all places and treating them as global cultural heritage that must be preserved.

Training in values and humanist profiles should be extended throughout institutions and included in courses on science and technology. In a highly technical world with challenges such as artificial intelligence, robotics, the use and management of big data, the environment, and commercial and economic globalisation, humanist values must permeate all syllabuses for the comprehensive training of students. New paradigms are needed, such as digital humanities and environmental humanism. Likewise, these values must accompany scientific research activity at all times, in order to bring about a better, more habitable world and establish ethical and human frameworks for scientific, social, cultural and technological development.

The fight for free, critical citizenship is also a fight against disinformation and in favour of knowledge democracy. In this situation, collective decision-making is based on evidence and scientific rigour. At the same time, a participatory democracy that works for the common good is promoted at all times.

5. Knowledge: putting research and innovation at the service of social challenges

Knowledge is becoming a critical factor for the progress, well-being and competitiveness of societies. In what is known as the knowledge society, science, technology and talent are key factors for building progressive societies. In fact, some of the disputes between countries at international level are aimed at achieving a competitive advantage in technological and scientific capacity in various fields and all kinds of applications.

Of course, universities play a key role in society and knowledge democracy. However, they have lost their monopoly on knowledge and therefore need to forge partnerships and collaborations with other agents: public institutions, companies and organised civil society. We must construct open universities which at all time facilitate these collaborations with other agents and focus on the advance of culture, science and knowledge, as well as its social and economic application.

We are committed to responsible research and innovation; research that is carried out with and for society. We are committed to social participation in scientific developments and scientific dissemination and communication as tools to bring these developments closer to all citizens. We advocate the promotion of science, knowledge and innovation that applies not only to natural and technical sciences but also includes social sciences and humanities. In this context, we promote open science as a universal common good that must be jointly constructed and shared.

We want to develop entrepreneurial universities at the service of society that strengthen entrepreneurial capital through their leadership, knowledge and research and training activities. Universities should foster cross-disciplinarity and have a cross-cutting vision of social problems beyond the classical academic disciplines. They must promote complex thought and have a global, inclusive vision.

We aspire to a broad, multidimensional conceptualisation of university quality that considers questions such as equality, inclusion, autonomy, critical capacity and creativity, all of which are essential to the public, scientific and cultural value of higher education institutions. In this regard, we propose a shift from individualist research models to cooperative transformation-oriented approaches. In addition, new metrics should be developed for assessing the academic and scientific activity of teaching staff that value the social impact of scientific research, its dissemination and eventual application.

6. Internationalisation: reinforcing partnerships to attain common goals

In recent years, internationalisation has become one of the main focuses of university strategy to gain an international position and compete in the league of top universities. The knowledge and shared information society has led higher education institutions to become consolidated as nodes of multilevel networks that create and disseminate high-quality knowledge organised into alliances and other collaborative models. At

the same time, globalisation and advances in international transport have made student and academic mobility a key factor in the international standing of institutions and the circulation of knowledge.

However, with the Covid-19 crisis, internationalisation activities suddenly had their modus operandi curtailed to a certain extent, with almost non-existent academic mobility in the last two years. This has increased the importance of strengthening new models of internationalisation. These models were already in existence, in some cases for over thirty years. Examples include internationalisation at home and internationalisation of the curriculum. These models are spreading to new contexts and have gained more relevance in this decade.

New forms of internationalisation, along with the possibilities offered by technology, have increased the capacity of universities in their mission to train critical citizens with global competencies and knowledge, and the ability to make decisions that have a local, national and global impact. These new forms mean that the multicultural dimension has been incorporated into the construction of the global knowledge, vision and management of higher education institutions. In addition, they reinforce universities' mission to be inclusive and fairer, and to guarantee access with equal opportunities.

Digitalisation has provided new approaches to international collaboration and cooperation, through methods such as virtual exchange, collaborative online international learning (COIL) programmes, co-creation, co-teaching, blended mobility and virtual classrooms. Combined learning enables the diversification of internationalisation and encourages universities to cooperate internationally by sharing tools and experiences.

In a framework of collaboration, university partnerships, international associations and programmes to promote university cooperation could be the future of co-creation, cooperation and promotion of a space to share good practices and foster transnational work. In the international arena, this approach serves to promote the mutual recognition of qualifications and training, strengthen the participation of students, teaching staff and the entire university community, and promote knowledge transfer.

Internationalisation should not reinforce a global market of producers and consumers of knowledge and training, but boost international cooperation for advancement through horizontal logic and reciprocity. In this sense, it is generally claimed that there is a need for greater interregional and South-South cooperation that goes straight to the needs, specificities and potential of each territory. Despite the difficulties of creating a global vision, this is needed if we are to then move into details at other levels. The global internationalisation framework must be revisited in the different contexts of the global north and global south, taking a regional issues-based approach while also considering the inner diversities of the regions.

At the same time, we cannot talk about the future of internationalisation without taking into account present and future demographic growth, which will shift the focus and volume of students and institutions to new leading regions.

In short, future internationalisation must find a balance between the more competitive approach and the cooperative dimension that is associated with community responsibility. In this respect, the trends for internationalisation of higher education institutions must evolve and be transformed in parallel with the main social challenges.

7. Governance and professionals: building resilient, innovative and socially committed institutions

Higher education institutions are singular organisations with centuries of history. They are dedicated to knowledge creation and transmission and are key agents in the progress, well-being and competitiveness of societies and countries. Universities have often been described as inverted pyramids, as their main component, with the greatest capacity for action, are their professionals: teaching and research staff, administrative and management personnel.

Any university institution (whatever its profile, focus and characteristics) must therefore make a clear commitment to its professionals by providing training, retaining talent and fostering professional development. For the transformation of universities, it is vital to ask which profiles of teaching and research staff and administrative and management staff should be encouraged. They must enable us to build resilient, innovative and socially committed institutions.

In particular, we should mention the promotion of gender equality and the acquisition, retention and promotion of female talent. We must break the glass ceiling that still affects teachers and researchers in particular. Along these lines, we should implement specific policies and incentives to overcome discrimination and contribute to the full professional development of young girls and women in universities. This also means promoting women to the management and academic positions at the heart of universities.

We believe that we must overcome the existing barriers between teaching and research staff and management staff. Increased qualification of administrative staff should enable full participation in universities' strategic tasks, including critical areas such as digitalisation, sustainability, internationalisation, laboratories and infrastructure, teaching and research management, and even participation in direct aspects of teaching, research and innovation. In addition, we are committed to the utmost professionalisation of management teams. The availability of professional, highly qualified management and academic teams is an essential factor in the strengthening of institutions and making them more efficient with a greater social impact.

In the organisational area, we demand full university autonomy that is real and effective. It must always be accompanied by transparent reporting to institutions and society and, at the same time, should be enforced by specific regulation and financial support for HEIs. If the goal is to move forwards and take action, it is important to draw up strategies on where and how universities can be empowered and what their agency is, taking into account their specific location within policy, the politics of national and international systems, and quality assurance standards and governance. Autonomy is therefore related to accountability and quality, and is also linked to the construction of knowledge and HEIs' agency for innovation and transformation. Institutional autonomy is the way to construct more flexible, innovative organisations and avoid unnecessary bureaucracy that does not generate added value.

We are unquestionably committed to participation within the university community in the governance of higher education institutions, which must coexist alongside professional, flexible and efficient management. Decision-making must be democratic and participative and not paralysing. It should coexist alongside the need for flexibility and professionalisation in university administration and management. Finally, we consider that social participation in university governance should be promoted. Bridges must be built for collaboration in training, research, transfer and innovation. Singular and strategic projects for the country must be promoted with institutional, business and social players.

A vision for an ongoing process

The vision defined here helps us to set horizons of transformation for higher education institutions. As noted, the vision aims to inspire the construction of institutional strategies, objectives and action plans to achieve the envisioned horizons.

In this sense, GUNi will continue to generate reflection and knowledge, one of its core missions, by enriching the content of the new Higher Education in the World Report. This report is a living document, not only developed in printed and downloadable format, but also launched on a live webpage where new contributions will be added in the form of papers, videos, interviews and podcasts. The overall aim is to contribute over the period 2022-2025 by giving voice and bearing witness to new ideas, contributions and actions relating to higher education institutions and systems as they move in the direction of the 2030 Agenda, along the lines marked out by the GUNi vision.

Moving beyond words, the vision creates a space for active transformation which, together with the report as a whole, will constitute the stepping stone for a wider and more ambitious project entitled "GUNi International Call for Action (2022-2025): Rethinking HEIs for Sustainable and Inclusive Societies". This project will be one of GUNi's key strategic lines of action for 2022-2025 and will seek to encourage and help HEIs around the world to deploy the actions and changes that are needed to adapt and become more relevant, inclusive, effective, innovative and socially responsible. The overarching aim is for the International Call for Action and the special issue website to become a key open space for contributions to the transformation of HEIs around the world.

Part 2

Transitions: Key Topics, Key Voices

The second part of the report, which is called "Transitions: Key Topics, Key Voices", seeks to analyse and describe how we could move towards this new vision by tackling core issues and topics in higher education. As its title suggests, the second part aims to respond to how we go from where we are now toward our vision for HEIs by delving into the key topics of the first part and giving voice to leading experts and actors in the field of higher education.

In particular, the second part includes a real-time approach to what is currently being done, focusing on what HEIs around the world are doing in response to the needs, challenges, crises and transformations analysed in the first part. For this purpose, seven key topics have been selected:

- HEIs' governance and public service: between autonomy and community engagement
- Skills and competences: A humanist vision for a changing professional world
- Research and innovation: towards open, ethical and responsible research and innovation
- Sustainability: reinventing the role and place of HEIs for a sustainable future
- ICTs and digitalisation: a digital–human future towards more inclusive and accessible HEIs
- International higher education: from competition to collaboration
  Higher education management: promoting new leaderships and innovation

Each of the topics is covered by a number of articles in which contributors set out the challenges, actions and findings and provide inspiring examples of HEIs that are working on initiatives, new developments, changes and innovations to adapt to the new context.

Experts from all over the world have constructed the content of these chapters based on their own particular areas of expertise. As a result, their perspectives are unique and uniquely their own, based on their own particular blend of ontological, professional and geographic principles. That said, neither their selection of approaches nor their choice of terminology implies any particular preference or inclination of GUNi in one direction or another.

In this abridged print version of the report, the following pages introduce the experts' contributions through their respective abstracts. The complete version of their contributions can be found at the report's website: www.guni-call4action.org.

What makes the report unique is that it will be a living document. Throughout the period 2022-2025, new contributions will be added in the form of papers, videos, interviews and podcasts, giving voice and bearing witness to new ideas, contributions and actions relating to higher education institutions and systems as they move in the direction of Agenda 2030 along the lines marked out by the GUNi vision.

In this respect, it is important to note that the report aims to be a stepping stone in a wider, more ambitious project entitled "GUNi International Call for Action (2022-2025): Rethinking HEIs for Sustainable and Inclusive Societies". This project will be one of GUNi's key strategic lines of action for 2022-2025 and will seek to encourage and help HEIs around the world to deploy the actions and changes that are needed to adapt and become more relevant, inclusive, effective, innovative and socially responsible. The overarching aim is for the International Call for Action and the special issue website to become a key open space for contributions to the transformation of HEIs around the world.

2.1 HEIs' governance and public service. Between autonomy and community engagement

Public Service and Governance. Re-thinking the nature of Higher Education Institutions in the 21st Century

Sijbolt J. Noorda

Abstract

It is hard to find a university that would not subscribe to contributing to public service. Why should we then be re-thinking the nature of Higher Education Institutions and their relation to public service if this function is not an option? The main reason for the relevance of this topic is changing circumstances, such as nationalist political revivals, societal fragmentation and monopolising debate and public institutions. Universities must monitor their in-house operations and provisions, as well as their understanding of the public good, to see whether they are in keeping with what is required of them. To this end serious deliberations on core values, profile and mission are crucial, as well as the safeguarding of universities as open and tolerant spaces, welcoming debate and diversity. In this respect, universities have a lighthouse function in society. Last but not least, universities should review their current programmes and partnerships to see whether they are serving general public interest.

Introduction

It is hard to find a university that would not subscribe to contributing to public service. Most would agree that universities do not exist for themselves, and that it is precisely their *raison d'être* to cater for the needs of the world. As basic institutions of the social order in any given society, they are made to serve.

Why should we then be *re-thinking* the nature of Higher Education Institutions[1] and their relation to public service? Not because this function is optional, that much is for sure. The main reason such re-thinking is needed is changing circumstances. That is why universities ought to regularly monitor their performance as well as their profile. It is a standard task for any professional institution anyway, and universities are no exception.

Such **monitoring should include checking university strategies and activities, as well as the dynamics of needs and issues on the societal side. Over time, both universities and societies are constantly subject to change. Plans and past results are no panacea or guarantee for the future.** Taking stock and keeping up to date is and should be standard policy.

In recent years, many societies have shown more than the usual degree of change. At the same time, it is my observation that universities in general are less responsive and sticking to existing provisions and priorities to a higher degree than is desirable. This is possibly because they have been successful for such a relatively long period of time. It may very well be that they have been numbed by their successes in recent decades.

Main trends

At this point I cannot, from where I sit, and therefore shall not, take stock and monitor Higher Education in relation to the public interest in its entirety, under all circumstances, in every possible location. Rather, what I shall be doing is identifying a number of general trends as I observe them, weighing up their impact on the public role of universities and considering the agenda, or rather, the challenges that would emerge from all of this. These trends are as follows:

After a period that saw a considerable increase in international collaboration (as a positive response to supra-national challenges) we are now living in times of nationalist revivals (nations bracing for fiercer competition rather than embracing collective approaches).

These political developments have a direct bearing on universities, as well as on individual faculty and students. In some locations the consequences are highly

1. Higher Education Institutions do come in a variety of types and subcategories. In the remainder of this text I shall be using "universities" by way of shorthand for all of them.

visible, immediate and serious, while elsewhere they are less conspicuous, slower and yet treacherously tricky.

Societies are increasingly showing signs of fragmentation rather than cohesion. A growing number of groups and movements, sharing common identity and interests, are very keen on public visibility and political recognition. On-the-rebound institutions with a public mission, designed to serve the public good as a whole, are being challenged and brought into discredit, as supposedly self-serving and elitist themselves.

At the same time, the need to jointly find interrelated approaches to key global challenges remains extremely urgent. However, it seems that the attitude of many nations is protectionist rather than internationalist, driven by selfish interests rather than steering towards collaborative approaches.

These trends and developments are of immediate importance to universities. Universities must respond, re-profile and reposition themselves under these circumstances. In the final section of this paper I shall be proposing what I see as some urgent agenda items for universities.

Exposition of the main trends: shifting balance between local and international commitments

Five years ago, Hungarian Prime Minister Viktor Orbán gave a ceremonial speech, in celebration of the 650th anniversary of the first Hungarian university in Pécs, to underscore the national importance of the event. Evidently university foundations are to be remembered and honoured as significant chapters of nation building. However, on this occasion the Prime Minister made a remarkable statement when he called upon all students in Hungary to be courageous and prepared to row against the current, by opting for their own nation and family values rather than Europe and its values. It was thus assumed that there is and ought to be a tension, a discrepancy, between their local community commitments (to town, region and nation) and the wider international community of countries and colleagues.

This example clearly demonstrates how being responsive to our immediate environment can be deemed at odds with active international engagement. It is a national politician driving home the point about national norms and priorities, in contrast with the traditional majority view in Higher Education and Scientific Research that these tasks cannot be accomplished in isolation due to the sheer scale of the challenges we face, as well as the need for mobilisation on a global scale of all we can and all we know. These challenges (good healthcare, reliable food and nutrition, sustainable sources of energy and water, coping with climate change, fair opportunities for schooling and employment, etc.) have pivotal international dimensions which cannot be handled skilfully and successfully without international partnering and a coherent international agenda.

Universities for the most part are and always have been location driven institutions, part and parcel of nation building, regional development or urban expansion. Founders and supporters are clear evidence of these origins and orientations: they were and are kings and bishops, national governments and city councils. Their interests lay in the creation of qualified professionals, and since the 19th century, the production of up-to-date scientific knowledge.[(2)]

When reading older university histories, one is struck by the founders' and supporters' keen expectation of getting things the way they wanted, the way their institution would serve their interests best. New universities were often founded precisely because the existing ones were no longer relevant to the new rulers

This explains why academic independence is a relatively recent phenomenon and - also in more recent times - never absolute. It depends upon a kind of social contract between founders and supporters. Even when formally guaranteed by charters or laws, the very fact of dependency makes academic autonomy and freedom liable to social change and political pressures.

However, the obvious national or regional nature of universities does not exclude a strong international dimension. Even in the early years of university history, one can observe the cross-border mobility of students and professors. In the course of time, ideas and textbooks, novel instruments and methods were borrowed from abroad or brought in by foreign teachers.

Of course, such international relationships were strongly steered by jurisdiction, persuasion and language of instruction. Reliable protection, the same religious affiliation and a familiar tongue were also decisive factors.

2. For-profit private foundations in Higher Education have a somewhat different history, sometimes overlapping with public provisions and always steered by individual business models and interests. However, they may under certain circumstances play an important role in nation building or regional development as well.

It is interesting to note how many of these factors continued to play a role after the Second World War, when a new tide of internationalisation began. La *Francophonie, Iberoamérica, Jami'at ad-Duwal al-'Arabiyya, the Commonwealth, the Roman Catholic Church* – these are just some of the frameworks promoting international cooperation and mobility while building forth on traditional cultural and political associations. The last quarter of the 20th century saw a clear acceleration of internationalisation. A handful of new frameworks emerged (like *the European Higher Education Area* with its Bologna Process, *the European Union* with a growing variety of programmes for students and researchers, *the Association of Southeast Asian Nations,* etc.). At the same time, key players on the global scene introduced their own schemes and built their own networks of preference.

One should not forget that most of these developments were driven by the best interests of individual nations, as the founders and participants of these new frameworks. The underlying idea being that unity of purpose and programmatic cooperation would enhance each and everyone's individual position. It is precisely on this point where we have recently seen substantial change happening. The Hungarian Prime Minister is by no means the only one who wants to redefine the existing balance between national and international engagement. Like many other government leaders in countries such as Turkey, India, Russia, China and Brazil, he sees the best interests of individual nations as no longer being served by internationalism.

Exposition of the main trends: monopolies here, fragmentation there

This trend of nationalist revivals is closely linked to changes in the political climate in individual societies. Remember that with only a few exceptions the rise of this new type and style of nationalist leadership has resulted from political party formation and national elections. There is apparently a substantial appetite and support for these changes among the electorate.

It is therefore a good idea to take a closer look at this phenomenon and inquire exactly what it is and which factors are producing and promoting it. The short answer is usually: populism. However, I do not think this is a very satisfactory explanation. Basically because the next sensible question would be: what kind of populist agenda are we talking about and what factors have led to and promoted populism? Answering this question with any precision and local detail is not doable in the present context. Some general observations will have to suffice.

On the one hand, we see traditionally open, multiparty democracies like the Netherlands, France and Germany experiencing the ascent of nationalist, anti-immigrant and anti-internationalist parties which, over time, although thus far unable to attain majority positions, have been quite successful in influencing political agenda-setting as well as public opinion. The general cultural climate is no doubt affected, without however impacting basic institutional structures of society.

On the other hand, there are some multiparty democracies (like India, Brazil and the USA) where political personalities and movements have come to power by adopting and propagating a plainspoken exclusivity agenda that is entirely in line with the economic interests and cultural preferences of their supporters. Solidarity and inclusivity play no role; neither does the protection of minorities or dissenting voices. The democratic principles of justice and equal treatment for all are endangered by a strong drive to monopolise the powers of the state and to try and fashion public institutions to satisfy their partisan supporters.

This list is of course incomplete. The People's Republic of China is run by a single party that not only controls government at all levels, but all relevant institutions of the country as well, including regional and local elections. Recent measures in the special administrative region of Hong Kong demonstrate that such relatively independent multiparty systems are being granted very little, if any leeway. Other countries, with a variety of ideological profiles, have similar control-avid governments, like Iran, Cuba, Venezuela and Myanmar, to mention just a few.

In parallel to these sorts of monopolising nationalist and protectionist tendencies, quite a few societies have experienced a clear increase in internal division: groups or strata in society with a shared identity and socio-cultural profile. They may be highlighting gender identities, religious affiliations and shared immigration backgrounds, or be characterised by regional, non-urban settings, socio-economic position or age group. Not all of these find expression in political representation. Yet low-threshold social media platforming is available to almost everyone. Media visibility is no longer the reserve of traditional establishments in politics, government, entertainment or business.

The simultaneity of these tendencies complicates societal landscapes considerably. One of these complications being that the whole concept of public service or contributing to the public good has no simple point of reference. When stating that an institution or service brings substantial benefits to society or the public good, the evident follow-up question will be: Which public? Which society? Does one understand public interest as defined by the ruling political powers of the time or as specified by one of many competing interest groups?

Consequences of these trends for Higher Education: monitoring social and political change and its consequences

It is time to turn to the consequences of these trends for Higher Education. At the start of this piece I stated that it is hard to find a university that would not subscribe to contributing to public service as a core mission. As basic institutions of the social order in any given society, they are made to serve. Which immediately leads to questions of what, what for and how? For public service to be effective and relevant, universities must be able to answer such questions, and stay or get in keeping with the times and circumstances.

With considerable social and political change occurring in many places, it therefore goes without saying that universities should engage in serious monitoring of such changes and their impact on universities. Burying one's head in the sand and hoping the issues go away won't do.

There are at least two compelling reasons for this. In the first place, as has already been said, universities cannot serve societies properly if they do not understand what is going on and where and how to contribute best. It is equally important to do serious monitoring because universities are themselves part and parcel of society. Monitoring includes, and should include, self-reflection.

This is easier said than done. Modern universities do engage in periodical strategy development as a rule. Yet very few universities base their public service tasks on a serious analysis of self and society. Concepts of self and mission statements on public service are usually of a rather general nature, without much up-to-date and on-site specificity.

It is not unusual for universities to only engage in updating their profile, mission or core values when, in a situation of crisis, they are forced to do so by external pressures or internal conflicts. In some cases, this produces quite good, sound results. Yet in many cases it does not; often because there is insufficient time for serious consideration and no opportunity for any substantial grassroots involvement. Responses are then to a large extent steered by the defence mechanisms and survival communications of supervisory boards and senior leadership.

So my first advice to universities would be: do not wait until it is too late. Rather, engage in institution-wide deliberations on core values, profile and mission, including their meaning and impact at all levels of the organisation. At the end of the day, universities that know what they are and what they stand and work for, based on the engagement and commitment of their entire community, stand a much better chance in actual fact and practice of being and remaining the independent and responsible academic communities they want to be.

Consequences of these trends for Higher Education: universities as lighthouses of openness and tolerance

Two years ago, the Council of Europe published a volume of articles on Academic Freedom, Institutional Autonomy and the Future of Democracy (Bergan et al., 2020). It offers a clear and instructive reflection of the interdependence between university and society in terms of core values, in particular freedom and autonomy. Ironically, academic freedom and institutional autonomy at universities fare better in situations where they are least called upon. In open societies with high levels of accepted diversity and respectful public debate and disagreement, faculty and students as well as universities as a matter of course benefit from this social climate. While in less permissive societies dissident opinion and independent institutions are under constant fire.

In one of the contributions to the Council of Europe volume, reference was made to the 1988 Magna Charta Universitatum and its key principles of independence and freedom (Noorda, 2020). The third principle reads in full:

> "Freedom in research and teaching is the fundamental principle of university life, and government and universities, each as far as in them lies, must ensure respect for this fundamental requirement. Rejecting intolerance and always open to dialogue, a university is an ideal meeting ground for teachers capable of imparting their knowledge and well equipped to develop it by research and innovation and for students entitled, able and willing to enrich their minds with that knowledge." [3]

This principle reflects a strong academic tradition of freedom in research and teaching and assumes that it will be promoted, respected and protected by universities as well as by the government.

However, history has taught us that the social contract underlying higher education, which allows and protects its core values, proves to be particularly vulnerable and is easily damaged in situations of repression and heightened state control. In recent years developments in Turkey have clearly demonstrated how governments at times violate university freedoms by invoking national emergency and higher state interests. Unfortunately, other countries provide very similar examples of such infringements.

It has become clear that it is quite a challenge to actually experience and maintain the freedom, openness and tolerance that should be characteristic of university life. Success cannot be taken for granted, at home or abroad or in international collaborations.

Nevertheless, universities ought to be *lighthouses* and examples of openness and tolerance, leading the way for society. If universities fail to practice the ideals of freedom and diversity inside their walls, they not only limit the creative potential of their community of scholars and students, but also fail to function as a good model for the outside world. This is about the realisation of a crucial readiness to make room for different opinions and positions, for debate and sound argument, both in the domain of scholarship itself and in view of the societal context that universities are part of.

This lighthouse function is precisely one of the key instances of public service that universities ought to provide. However, it is by no means easy to get this right (because of the risks of outside pressure and government infringements, as well as internal differences of opinion or lack of support). There is abundant evidence showing how strong our inclination towards the like-minded is. Inviting colleagues with very different approaches or protesting students easily leads to protest and reproach. "Why would you want to offer her/him a platform?" Our inclination towards the mainstream and the usual is very strong indeed. We all easily tend and bend towards the comfort of the well-known and the supportive, just as easily as we move away from the strange and the challenging.

Yet if we as universities are unable to embrace diversity and open ourselves to variant views and traditions, we are certainly failing our calling. Put positively, **successful lighthouses will be a formidable asset and make a great contribution to creating trust in universities as a public institution and, in education and research, will be reliable tools for the development of societies and the wellbeing of their citizens.**

Consequences of these trends for Higher Education: the right choice of partnerships and programmes

A third guideline for universities in view of the vitality of their public function (alongside the monitoring task and the lighthouse function) relates to their choice of partnerships and the setting of priorities in teaching and research

We have seen that in the international arena as well as within many nations there is a clear tendency to act in one's own interests, often of rather narrow dimensions. This leads to a preference for rivalry and competition over collaborative modes. Similarly, easy gains and short-term advances often suppress long term developments and essential but slow improvement. Whether the domain is energy transition, social inequalities or public health provisions, very similar attitudes and policies can be observed.

It is a keen responsibility for universities (meaning all members of the academic community, not just the institution and its leadership) to select partnerships and set priorities that lead to truly sustainable alliances and work towards long-term sustainable impact and results. This responsibility cannot possibly be borne by universities alone. Funding agencies and mechanisms play a key role, both in the public and the private domain. However, it cannot be fulfilled by individual universities alone, in the sense that universities need each other and should be working in and for sustainable partnerships, both within national boundaries and internationally.

3. For the 1988 Magna Charta Universitatum see http://www.magna-charta.org/magna-charta-universitatum. There one may also find the 2020 version of the declaration, which not only repeats and underlines the core principles of the 1988 original, but adds a number of key commitments and responsibilities of universities, most of them in terms of public service.

In recent years sustainable development goals have gained some prominence in the world of Higher Education. It would be desirable **to translate this agenda into the modus operandi of universities and to extend sustainability ambitions to the process of prioritising individual programmes in education and research as well the choice of long-term partnerships.**

Nonetheless, it will not be easy to bring about change in this direction. Universities in many places of the world have become rather individualistic and fragmented worlds of their own. Boundaries of a disciplinary nature, between established and potential academic success, of a generational nature, linked to hierarchies of esteem and traditional ranking, driven by affiliations with influential businesses or political powers – all of these are keeping academics apart.

At the same time many, if not all of us, have our own society of preference, the kind of society or the part of society we work for and are familiar with. Yet our commitment to equity, our responsibility to do justice to all, should prevent us from being picky, should not allow us to line up with those players and institutions in society that seem to be our natural allies or our best paying partners, rather than with those that would benefit from our support most. Remember that universities in many countries are already seen as elite institutions, not because of their high-quality output, but rather because of their being part of the establishment and serving the interests of that same establishment. Whether this reproach is entirely correct or not, it certainly points to an important issue that universities should be keenly aware of. It is yet another incentive for universities to clearly demonstrate by the spread of their programmes and partnerships that they are truly keeping the balance in terms of public service.

A relevant illustration is provided by Glasgow Caledonian University, which proudly calls itself the *University for the Common Good*. It is certainly an appealing thought that every university might do and be the same, not as a marketing ploy, but as an honest expression of its wholesale engagement.[4]

4. Magna Charta Observatory's programme on Living Values was inspired by the example of Glasgow Caledonian. See http://www.magna-charta.org/activities-and-projects/living-values-project.

Conclusion

By way of conclusion: universities do not indeed exist for themselves; they are made to serve. Public service is not an afterthought or by-product, but a core element of a university's mission. This may go without saying, but in challenging times, and under pressure, universities are learning the hard way that it is not as obvious and simple as that. It takes courage and a strong collective will for a university community to uphold its responsibilities to the public good.

A re-think of our usual ways and the engrained modus operandi certainly is called for. This should include a serious analysis of self as well as society. Monitoring profiles and programmes as well societal needs and issues will be a crucial foundation stone for long-term engagement. Institution-wide deliberations on core values, profiles and missions should shape this engagement of the entire community.

Along with this first piece of advice to universities, I would like to suggest that they pay serious attention to creating, maintaining and protecting the ideals of openness, tolerance, freedom and diversity within the institution. This is not only of great value to the academic community itself, but can also and should be a positive example, a kind of lighthouse to society at large, precisely because these ideals are often under pressure as a consequence of strong monopolising tendencies in society.

Thirdly, the public responsibility of universities implies that they must prioritise programmes in education and research, and select national and international partnerships that truly and sustainably contribute to the common good. A collective strategy to get this right is called for.

Of course, these three appeals and exhortations are all addressed to universities themselves. There is a long tradition of universities addressing the outside world, in particular opinion leaders and politicians, and urging them to allow and enable universities to do what they are good at, backed by a general promise that all of this will bring great benefits to society. However, such appeals will be far more persuasive if the universities themselves actually provide the best they can, in response to the present and future challenges that societies face, nationally as well as on a planetary scale. Contributing some reflections on this is the aim of this paper.

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Community engagement in higher education: a vision for European policy and practice by 2030

Thomas Farnell and Ninoslav Šćukanec Schmidt

Abstract

Over the past four decades, increased attention has been paid globally to the engagement of higher education with society as the 'third mission' of higher education. However, in Europe, the focus of most third mission policies has been overwhelmingly on the universities' contribution to the knowledge economy. Recently, however, there has been an shift in European policy towards universities' role in addressing a broader scope of societal needs. This paper will argue that the concept of community engagement in higher education should become a central concept in the debate about the societal role of higher education in Europe in the coming decade. Community engagement is a process whereby universities engage with community stakeholders to undertake mutually beneficial joint activities. Referring to the recent emergence of European-wide initiatives to support community engagement in higher education (both in policy and practice), the paper will argue that there are tangible opportunities for community engagement to become a much higher priority in European higher education, both through 'top-down' policy initiatives and 'bottom-up' stakeholder movements. Finally, the paper presents a potential policy tool that could support universities in institutionalising their cooperation with the broader community.

1. Introduction

Over the past several decades, increased attention has been paid globally (both in research and policy) to the 'third mission of higher education': how universities interact with and contribute to society, in addition to their core mission of teaching and research. Although the contribution of higher education institutions to social development in their local and regional settings has always been an integral aspect of this third mission, the focus of most third mission policies and practice over the past 30 years has been overwhelmingly on the economic significance of universities (Benneworth, 2018): from technology transfer, the commercialisation of research, university-business cooperation and to the labour market relevance of graduate skills. The role of universities in supporting other societal needs, such as strengthening democratic values and civic engagement, addressing the needs of vulnerable social groups, contributing to cultural development and addressing large-scale social challenges, has not been nearly as prominent in the past few decades. This reflects a global trend towards framing (higher) education policies as key actors in contributing to the knowledge economy (Slaughter & Leslie, 1997; Rizvi & Lindgard, 2009).

Whereas many countries globally (especially in North America, Latin America and Australia) have managed to re-balance the debate about the societal role of universities by establishing national policies, structures and networks to support the public and civic mission of universities, this topic was largely absent from policy frameworks in the European Union (Farnell, 2020). Over the last decade, however, **there has been a gradual shift in the policy framing of higher education's third mission in Europe, with an increasing number of initiatives supporting universities' roles in addressing a range of societal challenges.** In this paper, we will present how such developments have occurred and will argue that the concept of community engagement in higher education should become a central concept to frame the debate about the societal role of higher education in Europe in the next decade and will propose the frameworks that could support this new direction.

2. A shift from economic to community engagement of universities in europe?

Before 2015, European Union policies referring to the societal role of universities were predominantly framed in economic terms. The EU's Lisbon Strategy (2000-2010) placed universities as key actors in achieving the Strategy's overall goal of 'making the EU the world's most competitive economy by 2010' (European Commission, 2003). Even after the financial crisis of 2008, the EU's next policy framework for higher education, *The Modernisation Agenda for Higher Education* (European Commission, 2011), also adopted a primarily economic angle to frame the debate about the societal role of universities: 'quality and relevance' in higher education focused on the needs of the labour market, while the main concept used to promote the connection between universities and society was the 'Knowledge Triangle', which focused on connecting education, research and business.

When the *Renewed Agenda for Higher Education* (European Commission, 2017) was adopted in 2017, it became the first EU policy document to make explicit reference to broader societal engagement by universities, and to consider innovation and entrepreneurship, on the one hand, and broader societal engagement, on the other. The Renewed Agenda notes that 'higher education institutions are not ivory towers but civic-minded learning communities connected to their communities' (p. 6). It goes on to describe the kind of engagement that could achieve this connection:

> 'Some institutions are developing their profile as 'civic universities' by integrating local, regional and societal issues into curricula, involving the local community in teaching and research projects, providing adult learning and communicating and building links with local communities. (...) HEIs should be engaged in the development of their cities and regions, whether through contributing to development strategies, cooperation with businesses, the public and voluntary sectors or supporting public dialogue about societal issues...' (p. 7)

To support this newly emerging policy direction, **two EU-funded projects entitled *Towards a European Framework for Community Engagement in Higher Education* (TEFCE) and *Steering Higher Education for Community Engagement* (SHEFCE) took on the task of attempting to define a common European approach to community engagement in higher education** and identifying assessment tools and policy recommendations that could push this agenda forwards, by both assisting universities wishing to become more community-engaged and supporting policymakers in understanding how community engagement can be supported through policy.

3. The TEFCE and SHEFCE projects: creating a european framework for community engagement in higher education

TEFCE and SHEFCE are two consecutive projects through the European Commission Erasmus+ programme gathering a total of 28 partners from 10 EU Member States (led by the Institute for the Development of Education, Croatia) to develop innovative and feasible policy tools at the university and European level for supporting, monitoring and assessing the community engagement of universities.

The first task carried out in this process was to develop a clear definition of community engagement. **The definition adopted in the TEFCE and SHEFCE projects is that community engagement is the process whereby universities address societal needs in partnership with their external communities,** whereby:

- **Community** is defined broadly as 'communities of place, identity or interest', and thus includes among others, public authorities, businesses, schools, civil society and citizens.
- **Engagement** refers to the range of ways in which university staff, students and management interact with external communities in mutually beneficial ways, either as part of teaching and research or as part of other projects and joint initiatives.
- **Societal needs** addressed through community engagement are also defined broadly and refer to all political, economic, cultural, social, technological and environmental factors that influence the quality of life within society. (Farnell et al. 2020.a)

The initial TEFCE project (2018-2021) developed an institutional self-reflection framework for community engagement in higher education – the TEFCE Toolbox (Farnell et al. 2020.a). The TEFCE Toolbox was developed based on an extensive analysis of existing assessment tools for community engagement in higher education (including the AUCEA Benchmarking University Community Engagement Pilot Project (Australia) and the Carnegie Elective Classification for Community Engagement), the TEFCE Toolbox adopted an innovative approach in the following aspects:

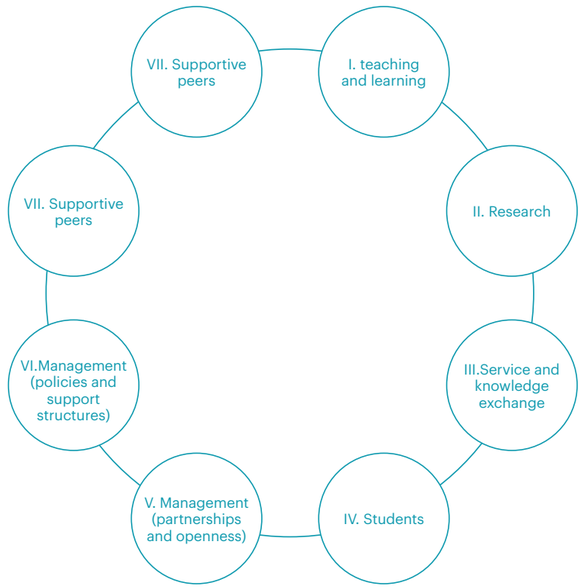
- **Adopting a qualitative approach** instead of developing quantitative indicators of community engagement.
- **Allowing for multifaceted and context-specific applications,** instead of providing a 'one size fits all' assessment that serves the purpose of comparing and ranking institutions' performance.
- **Encouraging a participative process** rather than developing a bureaucratic self-assessment process.

In practice, **the TEFCE Toolbox serves as a reference tool for universities, communities and policymakers to better understand the dimensions of community engagement in higher education** and serves as a practical tool for universities to determine how well they perform according to each dimension, as well as where they can improve. The TEFCE Toolbox allows universities to firstly identify the range of community engagement activities they carry out at their universities according to seven dimensions of engagement, presented below in Figure 1.

The TEFCE Toolbox then allows universities to analyse and reflect on the extent to which the community engagement initiatives are mutually beneficial, to what extent they address a diversity of communities and societal needs, and to what extent they are widespread and sustainable at the university. The results of this process are then synthesised as a colour-coded institutional community-engagement heatmap (Figure 2) and are then the subject of participative discussions at the university.

The **TEFCE Toolbox was the result of a co-creation process involving over 170 participants from eight countries and generated much interest worldwide** (Farnell et al. 2020b). Meetings and consultations

Figure 1: TEFCE Toolbox dimensions of engagement



Source: Strategic Business Insights (2017).

regarding the TEFCE Toolbox were held with key organisations and stakeholders at the global higher education level, including the UNESCO Chair in Community Based Research and Social Responsibility in Higher Education; the International Association of Universities, the Talloires Network, the Council of Europe (Working Group on the Local Democratic Mission of Higher Education), the National Coordinating Centre for Public Engagement (UK), Campus Engage (Ireland), the Canadian Pilot Cohort for the Carnegie Classification for Community Engagement and UNESCO Bangkok.

In Europe, the support for the TEFCE Toolbox resulted in an initiative to develop a new project to support the community engagement agenda in Europe, in the form of the follow-up project SHEFCE – Steering Higher Education for Community Engagement (2020-2023). In addition to recruiting more universities to apply the TEFCE Toolbox, the SHEFCE project will develop four intellectual outputs:

Box 1: The TEFCE Toolbox in practice: experiences and impacts on universities in Europe

The TEFCE Toolbox was initially piloted by four universities from Croatia, Germany, Ireland, and the Netherlands in 2019 and is being applied by four universities in 2021 (from Austria, Belgium and Spain). Further interest in the TEFCE Toolbox has since been expressed by universities in Europe, North America, Latin America and East Asia.

The application of the TEFCE Toolbox at each university has usually involved a six-month activity involving a university working group of 5-10 university representatives to lead a data-collection and analysis process, generally resulting in mapping between 30 to 50 case studies of community engagement at each university, and in organising participative workshops with 10-15 participants to reflect on the findings. After a peer-reflection exercise involving exchanges with international experts and partners from other universities, each participating university prepares an institutional report.

discipline only accessible to academics. This was my second point of frustration. Based on the experiences of the first seven universities to have applied the TEFCE Toolbox, the framework's value has been confirmed. An evaluation of the TEFCE Toolbox (Farnell et al., 2020.b) showed that the method used by the TEFCE Toolbox supports the intrinsic motivation of community-engaged staff, students and external partners and that it facilitates a learning journey rather than tools that focus on compliance or competition. Users particularly valued that the Toolbox raises the visibility of the value of community engagement.

Regarding the impact of the TEFCE Toolbox, experiences have differed between participating universities. Some universities applied the Toolbox in a bottom-up approach (without the active involvement or support of university management), whereas other universities were able to ensure the full endorsement and operational support of the central university management. Both cases, however, have shown the potential for impact:

- One university (with full management backing) included the TEFCE Toolbox among its new strategic priorities, developed an institutional level award for community-engaged teaching and set up an institutional database of community-engaged practices.
- Another university (with less prominent involvement and interest of university management) mobilised an internal network of intrinsically-motivated staff working on community engagement, developing a new module for community-based learning based on their experience in the project.

1. **University action plans for community engagement:** Providing a structure, evidence-basis and peer support for European universities to improve their community engagement policies and practices.
2. **National policy recommendations for selected European countries to improve support for community engagement:** Analysing the policy drivers and obstacles to community engagement.
3. **European Platform for Community Engagement in Higher Education:** Developing a central European web

platform to provide users with information, good practices and guidance on how to carry out community engagement in higher education.

4. **European University Community Engagement Heatmap:** Creating a prototype tool to allow universities to learn from other European universities about their community engagement practices and structures.

The SHEFCE project is of particular significance since it includes 5 key international stakeholders in its advisory team: the European University Association (EUA), the European Association of Institutions in Higher Education (EURASHE), the European Students' Union (ESU), the Council of Europe and the Organisation for Economic Co-operation and Development (OECD).

As we will further discuss in the next section, the TEFCE project has already begun to make a policy impact, and both the TEFCE and SHEFCE initiatives could play a key role in supporting the community engagement agenda in Europe in the next decade.

4. TEFCE'S impact on european higher education policy framework

In a significant development, the TEFCE project influenced the inclusion of the priority of community engagement in higher education in the EHEA strategic documents. In the 2020 Rome Ministerial Communiqué, 49 ministers of higher education committed to building an inclusive, innovative and interconnected European Higher Education Area (EHEA) by 2030. Under the goal of creating an innovative EHEA, ministers committed to support higher education institutions "to engage with our societies to address the multiple threats to global peace, democratic values, freedom of information, health and wellbeing". In the Communiqué the ministers stressed that higher education institutions "must engage with their communities to undertake mutually beneficial and socially responsible joint activities" (EHEA, 2020a).

Furthermore, to build a socially inclusive EHEA, the ministers adopted a new strategic document; "Principles and Guidelines to Strengthen the Social Dimension of Higher Education in the EHEA".

One of its ten principles is specifically dedicated to community engagement and envisages that "higher education institutions should ensure that community engagement in higher education promotes diversity, equity and inclusion" (EHEA, 2020b) – this principle is based directly on the materials of the TEFCE project. The implementation of this principle in the EHEA countries until 2030 could, in our opinion, be further facilitated by using the earlier presented TEFCE Toolbox for community engagement – such engagement could "provide a holistic basis on which universities can address a broad range of societal needs, including those of vulnerable, disadvantaged and underrepresented groups while enriching their teaching, research and other core functions" (EHEA, 2020b).

5. New policy developments and opportunities in Europe

New initiatives of the European Commission also suggest that community engagement could emerge as a policy priority in the next decade. In the Communication from the European Commission on Achieving the European Education Area (EEA) by 2025, one of the six dimensions necessary to further develop the EEA refers to strengthening European higher education institutions that are perceived as "playing a pivotal role in driving the Covid-19 recovery and sustainable development in Europe". To reach this goal, Higher education institutions will especially focus on the connectivity between higher education institutions and their surrounding society, which should be reflected in all four universities' missions: education, research, innovation and service to society (European Commission, 2020a).

The connectivity to society will be further amplified through the "full rollout of the European Universities initiative", which the European Commission launched successfully during 2019-2020. In the period 2021-2027, the Commission will further optimise the vision of European Universities "to address big societal challenges, become true engines of development for cities and regions and promote civic engagement", under the Erasmus programme, in synergy with Horizon Europe and other EU instruments (European Commission, 2020a, 2020b). University community engagement will be particularly fostered by the European Universities

alliances whose mission is to promote connectivity and co-creation opportunities with their external communities and citizens – as the Young Universities for the Future of Europe (YUFE) alliance already demonstrates. Finally, the European Commission published a special study by the NESET network on trends, practices and policies related to community engagement in higher education (Farnell, 2020), suggesting that this topic will feature in their new strategic documents.

A strong push towards affirming universities' societal engagement in all their missions and activities also comes from the European University Association (EUA), the umbrella organisation of the European universities. The EUA envisions for 2030 that "reaching out to society at large and opening up for co-creation will be a continuous ambition for universities in this decade". One of the three key areas in which European universities "see major potential for increasing societal engagement and contributing to sustainable development" is strengthening their civic engagement. This vision until 2030 could be fulfilled through a "dialogue with society, actively involving citizens and non-academic partners such as business, non-governmental organisations, public authorities and others" (EUA, 2021).

Finally, another important actor, the Council of Europe (COE), has actively contributed to further societal engagement of universities by establishing an "ad-hoc working group on the local democratic mission of higher education" in 2020. In 2021, the COE's Steering Committee for Education Policy and Practice approved the project "The local democratic mission of higher education: a proposal for a Council of Europe platform" that will allow the COE to establish a platform for longer-term cooperation to further the local democratic mission of higher education among all 50 state parties to the European Cultural Convention until 2025.

The COE's platform is expected to support the role of higher education in furthering democracy, human rights and the rule of law through working not just in, but with and for the local community. "Local" is understood as referring to the needs of universities' proximate geographic community. The platform is expected to focus on advocacy, policy development, and exchange of good practice to strengthen cooperation between higher education institutions and other local actors, including local public authorities, schools, health institutions, civil society, community centres and cultural organisations in areas pertinent to the local democratic mission of higher education (COE, 2021).

6. From vision to practice: recommended policy approaches

From the above policy initiatives, it is evident that **the period to 2030 has the potential to become the decade of community engagement in higher education in Europe.** Making this vision a reality will depend on building a European movement for community engagement that combines a top-down and bottom-up approach to policy advocacy and policy-making (Farnell et al., 2020c).

From a top-down perspective, many tools are available to policymakers for steering higher education institutions – including funding agreements, quality assurance, benchmarking and self-assessment. While many policy tools focus on compliance to standards or fostering competition, Farnell et al. (2020c) argue that **the policy tools best suited to support community engagement in higher education should focus on building capacities of higher education institutions for engagement and on facilitating a learning journey, rather than on compliance or competition.** Namely, community engagement in higher education is context-specific and multi-dimensional and previous attempts to narrow community engagement to quantitative indicators have not been successful. An optimal European policy framework for community engagement should therefore focus on transnational learning, capacity-building tools and funding incentives.

In parallel, bottom-up approaches are crucial in advocating and supporting community engagement. The bottom-up approach refers to measures adopted at the level of higher education institutions as well as other organisations and networks in higher education, particularly those that have already committed to community engagement in higher education. **The best approach in the European context would be to build a network of community-engaged universities and create alliances with similar institutional networks at the global level** (e.g., the Global University Initiative for Innovation, the Talloires Network of Engaged Universities, and UNESCO Chair for Community-based Research and Social Responsibility in Higher Education).

When capacity-building policy tools and incentive tools are used, the top-down and bottom-up approaches are likely to intertwine, providing momentum to strengthen community engagement in the higher education sector in Europe.

Conclusions

After decades of being a marginal topic in European higher education, the question of how universities can better respond to societal needs, how to be more open to society and how to better engage with their external communities is reaching the policy agenda. By proposing a new framework to support universities' community engagement, in the form of an institutional self-reflection framework for community engagement (the TEFCE Toolbox), the TEFCE project (and its follow-up SHEFCE project) could play a key role in structuring future discussions in Europe about how universities can better engage with their communities to address societal needs, and could also provide a basis for transnational learning and capacity-building, as well as the basis for establishing a European network of community-engaged universities. More broadly, the TEFCE Toolbox contributes to the global discussion of how to assess, support and strengthen community engagement in higher education and could support the growing international movement of universities, networks and organisations committed to the civic and public missions of higher education.

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From words to actions: A call for international guidelines on implementing academic freedom

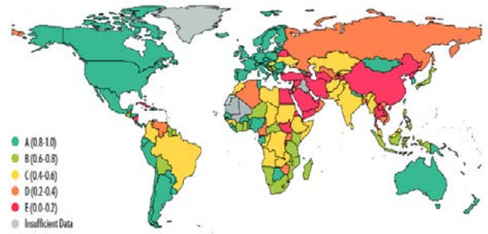
Robert Quinn

Abstract

According to the latest data in the global Academic Freedom Index, while 94% of the global population live in countries that have legally pledged to respect academic freedom (de jure protection), only about 20% live in countries where academic freedom is well respected in practice (de facto protection). The gap exists despite many state and institutional pronouncements on the importance of academic freedom. The last two years alone have seen reports, statements, decisions, declarations, resolutions, and communiqués on academic freedom at the EU, the Council of Europe, the Inter-American Commission and the United Nations. All of these are important and welcome. But they point to the need for authoritative, international guidelines on implementing academic freedom; guidelines that cover the core elements of academic freedom, including legal protection; institutional autonomy; equitable access; professional and personal expression; sanctions, restrictions or loss of privileges; student expression; and shared responsibilities to protect academic freedom. Such implementation guidelines would provide a roadmap for increasing respect and protection, and a checklist for assessing adherence to existing state-level obligations. International guidelines on implementing academic freedom could be developed by an international expert working group, but greater impact would result from responsible state actors endorsing the guidelines concept and leading efforts to secure recognition and promulgation at the state level through regional or global institutions.

According to the latest data contained in the global Academic Freedom Index (Kinzelbach, K. et. al., 2021), while 94% of the global population live in countries that have legally pledged to respect academic freedom (de jure protection), only about 20% live in countries where academic freedom is well respected in practice (de facto protection) (Chart 1). Why the gap, and what can we do about it?

Chart 1: Data from the global Academic Freedom Index (Kinzelbach, K., et. al. (2021).



The core of the right to academic freedom is clear, but not well understood

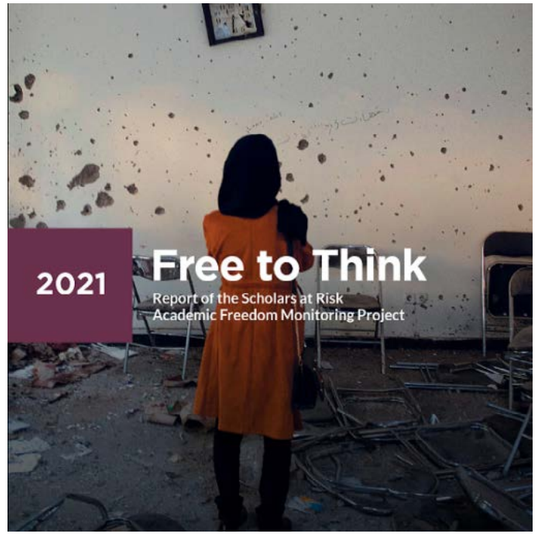
Academic freedom - the freedom of teaching faculty and researchers to set instructional and research agendas based on evidence, truth and reason, and to communicate findings to colleagues, students and the public – is a guarantor of quality and a driver of innovation that empowers the academic community to serve the public good. As such, academic freedom matters not just to academics, but to everyone.

Academic freedom is protected under the International Covenant on Economic, Social and Cultural Rights (United Nations General Assembly, International Covenant on Economic Social and Cultural Rights [UNGA, ICESCR], 1966) in Articles 13 (right to education) and 15 (right to benefits of scientific progress), which has been ratified by 171 countries with only 22 non-signatories (United Nations Office of the High Commissioner for Human Rights [OHCHR], 2022). Like press freedom, the outer boundaries of academic freedom can be fluid and contextual, but the central core of the right

is clear: members of the academic community are free "to pursue, develop and transmit knowledge and ideas, through research, teaching, study, discussion, documentation, production, creation or writing." It also includes "the liberty of individuals to express freely opinions about the institution or system in which they work, to fulfil their functions without discrimination or fear of repression by the State or any other player, to participate in professional or representative academic bodies, and to enjoy all the internationally recognised human rights applicable to other individuals in the same jurisdiction" (Kaye, 2020) (citing the United Nations Committee on Economic, Social and Cultural Rights [CESCR], 1999).

Recognising its importance, states, higher education systems, institutions, associations, faculty and student unions have long committed to respecting and promoting academic freedom, through such instruments as the UNESCO Recommendation concerning the Status of Higher-Education Teaching Personnel (UNESCO RSHETP, 1997), the UNESCO Recommendation on the Status of Science and Scientific Researchers (UNESCO RSSR 1974, 2017), the Declaration on Rights and Duties Inherent in Academic Freedom (International Association of University Professors and Lecturers [IAUPL], 1982), the Lima Declaration on Academic Freedom and Autonomy of Institutions of Higher Education, (World University Service [WUS], 1988), the Magna Charta Universitatum (Standing Conference of Rectors, Presidents and Vice-Chancellors of European Universities [CRE], 1988, 2020), the Dar es Salaam Declaration on Academic Freedom and Social Responsibility of Academics (Ardhi Institute Staff Assembly [ARISA] et. al., 1990), the Kampala Declaration on Intellectual Freedom and Social Responsibility (Council for the Development of Social Science Research in Africa [CODESRIA], 1990), the Amman Declaration on Academic Freedom and the Independence of Institutions of Higher Education and Scientific Research (Conference of Academic Freedom in Arab Universities, 2004), and the Juba Declaration on Academic Freedom and University Autonomy (CODESRIA, 2007).

Image 1: International guidelines on implementing academic freedom could be informed by and support international and national-level efforts to document infringements of the right, such as the incident-data in the annual Free to Think reports of the Scholars at Risk Academic Freedom Monitoring Project. Since 2011, the project has documented over 2,579 attacks on scholars, students, and HEIs in 122 countries.



Two threats to academic freedom: obstruction and neglect

All of these are important and welcome. But despite numerous pronouncements, academic freedom remains under attack in many places. Scholars at Risk's most recent annual monitoring report, *Free to Think 2021* (Image 1), analysed 332 attacks on higher education in 65 countries, while noting that these are only a small sample of the total number of attacks (Scholars at Risk, 2021).

This is in part intentional. Some players – states and non-state alike –, despite public pronouncements in support of academic freedom, fear the consequences of allowing free inquiry and open debate. Their power depends on controlling information and ideas, and they do not hesitate to use it. Scholars and other members of higher education communities are routinely subject to harassment, intimidation, surveillance, imprisonment, even violence and death, merely for serving the public in their professional capacities. In short, for asking questions and sharing their views. Scholars at Risk, our

network member institutions and partners around the world are committed to assisting those most at risk.

Yet in many places, academic freedom is not so much obstructed as it is neglected. Lofty statements in support of academic freedom often fail to go beyond mere words. Many universities have mission or value statements that mention academic freedom. Many might also have dispute mechanisms for addressing academic freedom issues in the context of tenure, employment contracts or student enrolment. But few if any have policies, procedures or training programmes in place to create an affirmative culture of respect for academic freedom. Few teach the meaning and responsible practice of academic freedom to their students and academic staff, let alone to university leadership or the public at large.

Similarly, many multi-state bodies have issued pronouncements on the importance of academic freedom. In 2020–2021 alone we saw new reports, statements, decisions, declarations, resolutions and communiqués on academic freedom from the EU, the Council of Europe, the Inter-American Commission and the UN. In July 2020, the United Nations Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression, David Kaye, issued a report summarising the existing legal protections for academic freedom in international human rights law (Kaye, 2020). In October 2020, the Research Ministers of the European Union adopted the Bonn Declaration, committing to strengthening academic freedom and institutional autonomy and encouraging research organisations "to promote and anchor the principles of academic freedom in their international relationships" (Ministerial Conference on the European Research Area [ERA], 2020). In November 2020, the Parliamentary Assembly of the Council of Europe adopted a recommendation and resolution on threats to academic freedom and autonomy of higher education institutions in Europe, creating strong support for monitoring and assistance instruments with concrete next steps (Parliamentary Assembly on the Council of Europe [PACE], 2020). In December 2020, the European Commission's European Democracy Action Plan explicitly committed to ensuring "academic freedom in higher education institutions is also at the core of all higher education policies developed at EU level" (European Commission, 2020). And in September 2021, the Inter-American Commission on Human Rights adopted a new statement of Inter-American Principles on Academic Freedom (Inter-American Commission on Human Rights [IACHR], 2021).

Forward-looking action for academic freedom

All of these initiatives are welcome, and some even begin to hint at forward-looking action, principally based around monitoring respect for academic freedom, such as the Rome Ministerial Communiqué (European Higher Education Area [EHEA], 2020) and its reporting findings, and the quadrennial reporting mechanism under the updated UNESCO Recommendation on the Status of Science and Scientific Researchers (UNESCO RSSR 1974, 2017), with its first reports due in 2021. These are important steps forward that go beyond the question of definitions towards actions which might ensure that academic freedom is fully operationalised in global, regional and national practices. We must ensure that academic freedom can be meaningfully practised everywhere, but especially in the countries that have already legally pledged to respect academic freedom. We must meet the need and hunger for training, guidance and highly practical suggestions on this issue right now.

Image 2: Animation from Dangerous Questions: Why Academic Freedom Matters, a free, online course (MOOC) for students, academic staff, administrators, and the public, promoting a proactive approach to building a culture of respect for academic freedom (UiO & SAR, 2018). Over 5,000 learners from 130 countries have attended the course since 2018.

At institutional level, faculty and administrators can implement training programmes, workshops and course offerings on academic freedom for students and academic staff. Examples include Dangerous Questions, a free online course (MOOC) on academic freedom (University of Oslo [UiO] & Scholars at Risk [SAR], 2018) (Image 2), and workshops using case studies from SAR's Promoting Higher Education Values guide (Image 3).

At international level, implementation guidelines are the obvious next step. There are many good models for such international guidelines, including EU guidelines on how states can implement their freedom of expression commitments (Council of the European Union, 2014) and UN operational guidelines in the field of business and human rights (United Nations Human Rights Council [HRC], 2011), which have been taken up in national action plans around the world. States and institutions need the same practical guidance on how to operationalise respect for academic freedom.

Toward that end, the following basic principles are offered as the core content of such guidelines. Adopted by higher education institutions, associations and states, such guidelines would not only offer a roadmap for those looking to increase protection for academic freedom, but also a checklist for assessing adherence to existing promises to respect and promote it.

Image 3: International guidelines on implementing academic freedom could be informed by and support local- and institutional-level efforts to build vocabularies and cultures of respect for academic freedom, for example through workshops using case examples from SAR's Promoting Higher Education Values guide. (Image shows the cover and an inside chart from the guide.) (SAR, 2019).

Principle 1: Academic freedom is a right and must be legally recognised

Academic freedom is protected under international and regional human rights legal standards. The roots for such protection are clearly grounded in existing protections for freedom of thought, freedom of opinion and expression, the right to education and the right to the benefits of scientific progress (also known as the right to science), among other established rights. International and regional human rights commissions and courts, and national human rights institutions, should guarantee recognition of academic freedom and its importance in their recommendations, reports, policies and decisions.

Academic freedom must also be protected under domestic law in national constitutions, basic laws and controlling legislation. Domestic protections must, at a minimum, conform to international standards and recognise a broad right of academic inquiry and expression. Limitations or restrictions, if any, are only appropriate to protect public safety or the rights of others, and must satisfy established conditions of necessity and proportionality. Moreover, domestic legal protections must go beyond words on paper (de *jure* protection) and include implementing regulations and procedures to ensure the effective exercise of the right and adequate remedies for violations (de *facto* protection).

Proper implementation of academic freedom requires that laws, policies or practices which sanction academics engaged in critical discourse or inquiry alone, without additional violent, coercive or fraudulent conduct, should be presumed suspect, and must be subject to rigorous evaluation of their intent and application. Examples of laws often inappropriately used to hinder academic freedom include civil and criminal defamation, lèse-majesté, insulting the state (or the nation or its leadership, culture or heritage), sedition and anti-terror laws which sanction academic inquiry and expression, including public expression. Such laws violate the principle that ideas are not crimes, and that critical inquiry is not disloyalty, but a scholar's duty.

Similarly, laws which restrict scholars' and students' freedom of movement, including movement within a country or territory, on entry or exit, on return after exit, or on expulsion from a country or territory, and

which punish, deter or impede academic speech, content or conduct, or otherwise sanction a member of the higher education community for their exercise of protected rights, should be presumed suspect and likewise similarly evaluated with regard to their intent and application.

Proper legal implementation of academic freedom requires the availability of adequate legal and procedural remedies. Sanctioned higher education personnel should have an opportunity to challenge laws, policies or practices that punish, deter or impede academic freedom, and for any punishment or sanctions to be lifted. Following a prima facie show by the sanctioned party of the impermissible intent or impact, the burden of defending the law, policy or practice should shift to the state or other sanctioning party, which must either demonstrate that it does not punish, deter or impede academic freedom, or justify any such restrictions as consistent with domestic and international standards of necessity and proportionality.

Principle 2: Institutional autonomy is essential for academic freedom

Legal protections for academic freedom at international and domestic level must also include affirmative, de jure and de facto protection for the autonomy of higher education research and teaching institutions. As recognised by the UN Special Rapporteur for Freedom of Expression, "States are under a positive obligation to create a general enabling environment for seeking, receiving and imparting information and ideas. Institutional protection and autonomy are a part of that enabling environment" (Kaye, 2020) (citing the United Nations Special Rapporteur on Freedom of Opinion and Expression [UNSRFOE] et. al., 2018). Autonomy is recognised by UNESCO as "the institutional form of academic freedom and a necessary precondition to guarantee the proper fulfilment of the functions entrusted to higher-education teaching personnel and institutions" (UNESCO RSHETP, 1997, V.A.18). Autonomy is defined as "that degree of self-governance necessary for effective decision-making by institutions of higher education regarding their academic work, standards, management and related activities" (UNESCO RSHETP, 1997, V.A.17).

Proper implementation requires that laws, policies and practices concerning the appointment, tenure and removal of higher education leaders, oversight boards and governing councils respect the principle of self-governance, which is an "essential component of meaningful autonomy" (UNESCO RSHETP, 1997, V.A.21).

Systems of public accountability for funds or other privileges entrusted to higher education institutions – whether public or private, not-for-profit or for-profit – can be fully consistent with institutional autonomy and self-governance provided that these systems are not overly intrusive and do not interfere with institutional decision-making. **Systems of accountability which allow players outside the higher education sector to control, sanction or privilege the content of teaching, research or discourse clearly fail to meet minimum acceptable standards of autonomy.** Rather than intrude into content, acceptable systems of accountability should focus on evaluating reports and communications provided by higher education leaders, with an emphasis on assessing institutional adherence to principles of quality, transparency, management of public funds, equitable access, anti-discrimination, inclusivity and social responsibility, the latter including "effective support of academic freedom and fundamental rights" (UNESCO RSHETP, 1997, V.B.22(c) & (a)-(q)).

Laws, policies or practices which sanction higher education institutions or leadership based on the content of academic discourse or inquiry alone, without additional violent, coercive or fraudulent conduct, should be presumed suspect, and must be subject to rigorous evaluation of their intent and application. Similarly, state authorities, including executive and legislative officials, and members of oversight boards and governing councils, should never sanction or threaten to sanction higher education institutions or leadership, including by removing leadership from office or withholding or threatening to withhold or reduce budgetary allocations or other resources or privileges based on the content of academic discourse or inquiry alone. Systems of public accountability with due regard for institutional autonomy should provide for the recusal or removal of any authority with actual or apparent responsibility for higher education budgetary allocations, resources or privileges who sanctions or threatens to sanction them based on the content of research, teaching or discourse alone.

Principle 3: Academic freedom is incomplete without equitable access to higher education

As noted above, full implementation of academic freedom requires that entry to and successful participation in higher education and the higher education profession, whether as leadership, staff, researchers or students, should be "based solely on appropriate academic [or professional] qualifications, competence and experience, and be equal for all members of society without any discrimination" (UNESCO RSHETP, 1997, VI.A.25) (See also the UNESCO Convention against Discrimination in Education [CADE], 1960, and the protocol thereto (recognising the affirmative duty to promote equality of opportunity and treatment for all in education at all levels); the UNESCO Recommendation against Discrimination in Education [RADE], 1960; the UNGA Convention on the Elimination of All Forms of Racial Discrimination [CERD], 1965; the UNGA Convention on the Elimination of All Forms of Discrimination against Women [CEDAW], 1979; UNESCO RSSR, 1974, 2017).

Equitable access is both essential to full enjoyment of academic freedom and a contributor to quality teaching, research and discourse. It encourages the widest range of intellectual talent to enter higher education and provides a safeguard against the corrupting effects of bias and limited perspectives. Laws, policies or practices which expressly or in practice inhibit full participation in the higher education sector on grounds of race, gender, language or religion, or economic, cultural or social distinctions or physical disabilities, fail to meet minimum acceptable standards of access, without which full implementation of academic freedom is impossible.

Equitable access also requires active facilitation of entry to, and successful participation in, higher education for members of traditionally underrepresented groups, including women; indigenous peoples; ethnic, cultural, linguistic, and religious minorities; economically or otherwise disadvantaged groups; and those with disabilities, whose participation may offer unique experience and talent that can be of great value to the higher education sector and society generally. Measures which aim to accelerate de *facto* equity for such groups should not be considered discriminatory, "provided that these measures are discontinued when the objectives of equality of opportunity and treatment have been achieved and systems are in place to ensure the continuance of equality of opportunity and treatment" (UNESCO RSHETP, 1997, IX.A.41 (with regard to teaching personnel)).

Principle 4: Academic freedom requires protection for professional and personal expression

Full implementation of academic freedom implicates a number of other protected rights, especially freedoms of thought (UNGA International Covenant on Civil and Political Rights [ICCPR], 1966, Art. 18), opinion and expression (UNGA ICCPR, 1966, Art. 19), which "shall include freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art, or through any other media." Academic freedom protections must include not only professional expression within the higher education community (intramural expression), such as in classrooms, lecture halls, laboratories, and academic publications, but also professional expression aimed at individuals outside the higher education community (extramural expression), including media, policymakers and the public.

Academic freedom protections must also recognise and defend the essential link between professional expression (academic freedom) and personal expression (free expression). Higher education professionals, "like all other groups and individuals, should enjoy those internationally recognised civil, political, social and cultural rights applicable to all citizens" (UNESCO RSHETP, 1997, VI.A.26). These include "freedom of thought, conscience, religion, expression, assembly and association as well as the right to liberty and security of the person and liberty of movement" (UNESCO RSHETP, 1997, VI.A.26). Higher education professionals should never suffer threats, sanctions or retaliation for exercising these rights. Censorship, loss of position or privileges, travel restrictions (including entry, exit, intra-territorial travel, or expulsion) and expulsion from study, among others, infringe on the academic freedom of the subject individual when imposed for the purpose

of deterring or sanctioning the exercise of free expression or other civil, political, social or cultural rights.

Moreover, when such threats or sanctions are imposed publicly, such as the firing of a professor or expulsion of a student leader, they can infringe upon the academic freedom of entire communities. They can trigger self-censorship, where higher education professionals refrain from examining specific research questions, teaching specific topics or sharing specific theories, evidence or ideas because of threats or fear of professional, legal or physical retaliation. Self-censorship is not about fear of being wrong. Rather, academic freedom is an essential driver of quality precisely because it protects scholars' and students' right to be wrong, to explore theories and evidence which may not pan out. Self-censorship is "about fear of losing one's job or position, about harassment and threats of violence — whether in-person or remote (such as by phone or online) — including racist, sexist, and homophobic threats; 'doxing,' or the malicious publication of personal details online; and conscious efforts to destroy reputations and livelihoods. Fear of actual violence, including beatings, rape and killings. Fear of actions by the state, including wrongful arrest, prosecution and imprisonment. Fear of non-state players, including mob violence without adequate protection from public authorities. Fear not only of actions against yourself, but against family members or colleagues, including intimidation of children and parents and judicial hostage taking — the prosecution or imprisonment of a loved one to punish the expression of another" (Quinn, 2021).

Threats or sanctions on professional and personal expression can also trigger brain drain — when higher education professionals and students are forced to seek opportunities in territories with greater respect for academic and other freedoms, depriving their community of origin of the benefits of their talents — and brain drag— "the lost personal, professional and creative productivity [for the people who remain in place] that would have been, but for the rational fear of retaliation; fear that does not exist in places where academic freedom is well protected" (Quinn, 2021).

International guidelines for the full implementation of academic freedom should guard against self-censorship, brain drain, brain drag and other negative consequences of conduct which denies the essential link between professional and personal expression, and encourage the development of laws, policies, practices and enforceable remedies to protect the exercise of academic freedom and related rights.

Principle 5: The academic freedom of students must be protected

Full implementation of academic freedom is impossible without clear recognition of the academic freedom and free expression rights of students, individually and collectively. Students are essential to the teaching, research and discourse functions of higher education. The academic freedom of higher education students extends not only to the classroom, laboratory and campus, but to the content of research, publications and commentaries. It also includes expression on conditions within education systems — such as access to education, fees, educational content, dormitories and other facilities, student services, campus activities and institutional governance — as well as the wider public systems and structures which impact higher education, including national higher education laws and policies. Like higher education professionals, students enjoy the internationally recognised civil, political, social and cultural rights applicable to all citizens, including the freedom to organise and express themselves on issues of concern to them and the wider public. This includes the freedom to organise public demonstrations and protests, so long as these are exercised responsibly and with due regard for public safety and security.

International guidelines for the full implementation of academic freedom should encourage laws, policies and practices which recognise the academic freedom and free expression rights of higher education students. They should emphasise that although state and university authorities have a responsibility to maintain public order and safety, they must do so in ways that respect these rights and guard against harm to students or others. This includes as a matter of policy avoiding the use of force whenever possible, and ensuring that any force used is limited and proportionate to the situation. Disproportionate use of force, especially in the context of student expression, undermines academic freedom. Such guidelines should likewise recognise that students have a responsibility to exercise their rights peacefully and responsibly.

Who bears responsibility for implementing academic freedom?

International guidelines embracing the above five principles would go a long way towards full implementation of academic freedom. Ultimately, the responsibility for deploying such guidelines must fall to states, whose sovereign authority gives them the capacity to organise national legal and higher education systems that respect academic freedom. Minimum state responsibilities in this area include (1) refraining from direct or complicit involvement in attacks on academic freedom and higher education; (2) protecting higher education communities against present and future attacks; (3) assisting the victims of attacks; and (4) working to deter future attacks, including by investigating and holding perpetrators accountable (Global Coalition to Protect Education from Attack [GCPEA], 2014). States should preferably encourage the development of such implementation guidelines and work towards the dissemination and adoption thereof through their bilateral and multilateral relations.

However, states are unlikely to initiate the development of well-crafted guidelines on implementing academic freedom. Badly-behaving states have little incentive to establish policies and practices to protect a right they regularly violate, whereas generally well-behaving states might refrain from delving deeply into the implementation of academic freedom out of appropriate deference to the autonomy of higher education.

Responsibility for initiating and developing international guidelines for the full implementation of academic freedom will therefore likely fall to the higher education sector itself; to the institutions, associations, professionals and students that may possess greater insight into the many challenges of implementing academic freedom, and may see a more immediate self-interest in the implementation of academic freedom.

This is not to suggest that states do not have an interest in the full implementation of academic freedom. On the contrary, academic freedom is essential to teaching and research quality, and therefore essential to state interests with regard to national competitiveness in knowledge-production, innovation, and scientific, technological, economic and cultural advancement. But these interests are less immediate than the interests of those exercising academic freedom in the first instance.

Indeed, grounding the process of articulating academic freedom guidelines within the academic sector — with institutions, associations, professionals and students — is an important safeguard against improper limitations on the scope of academic freedom imposed by players outside the sector. The role of the sector in articulating the scope of academic freedom is not unlimited, however, but rather bound by core values of institutional autonomy, professional and social responsibility, accountability for public funds, and equitable access/anti-discrimination. States and other players outside the higher education sector acting in good faith may properly question any proposed international guidelines on the implementation of academic freedom to ensure adherence to these values.

Finally, the general public has a responsibility for implementing academic freedom. At a minimum, the public has a responsibility to resist state or other attempts to recruit the public into attacks or pressures on academic freedom and higher education communities. **The public would preferably develop a sense of responsibility to protect the institutions, leaders, professionals and students in their communities whose personal pursuit of knowledge and skills in higher education promises to serve the broader public good.** And in exchange for such protection, members of the higher education sector must live up to this promise and ensure that they use the academic freedom and autonomy afforded by public and state not only for their own advancement, but for society as a whole.

Final remarks

As has been noted, academic freedom is not only a driver of innovation that "enhances the capacity of scholars and students to generate ideas" (Kaye, 2020). It also "safeguards societies' capacity for self-reflection, which is intimately linked to both social and economic advancement and to self-preservation" (Kaye, 2020). The time has come to do more than simply recognise the importance of academic freedom through words. The time has come for action. The time has come for international guidelines on the full implementation of academic freedom.

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2.2 Skills and competencies. A humanist vision for a changing professional world

The shifting demand for human and specific skills: A humanist vision for a changing world

Carme Pagès

Abstract

This chapter discusses the implications of technological change and demographic trends for higher education supply and demand. It argues that: technology is fast changing the nature of occupations and the division of labour between humans and machines, which is changing the demand for skills; technology is changing the nature of work, with further implications for the demand for education; demographic trends, combined with fast technological change, are creating a new market of HEIs for adults with different characteristics from those for young people; technology brings new affordances in the form of new pedagogies and new tools for education.

This chapter also examines how higher education institutions (HEIs) are responding to these technological and demographic trends. Online learning is becoming more ubiquitous. We also review how HEIs are beginning to use technology to document students´ learning outcomes, facilitate peer-to-peer assessments, automate the recognition of prior learning, track employers´ skills needs and provide career guidance for students. HEIs are also increasingly responding to upskilling and reskilling demands, creating bigger and better staffed departments of continuing education, developing new shorter, stacked qualifications, and providing more granular micro-certifications, incorporating learning management tools and exploring the potential of automating prior learning recognition and career guidance. Understanding these changes is important for HEIs to remain relevant and continue to help people to acquire the right skills in a rapidly shifting education and labour market.

1. Introduction

Higher education institutions (HEIs) have remained pretty much unchanged since their early days. Several factors have helped: first, the demand for higher education has increased steadily in the last few centuries, as the number of young people and the proportion of them with a higher education increased over time. Second, the student body and its needs remained relatively constant over time. They were young people who mostly pursued an immersive, full-time experience prior to the start of their careers.

But this is changing. In developed countries, population aging has reduced the number of young people. Technology is advancing at a fast pace, and with it, the tasks and jobs that people are expected to perform in the labour market. The demand for some skills is thus shifting quickly, often faster than the capacity of HEIs to create new programmes. Studying only at the beginning of one´s career entails a growing risk of obsolescence. Rapid skill turnover, combined with the potential of longer working lives, has increased the need for continued upskilling and reskilling of the population. This in turn changes the nature and needs of learners; the proportion of adult students is increasing and instead of an immersive, full-time experience, adults often seek shorter, highly labour market-relevant, alternative certifications. All of which is beginning to transform higher education.

The COVID-19 pandemic has brought further changes. In 2020, the social distancing measures imposed to control its spread created, almost overnight, a huge disruption to HEIs. Courses had to be moved online, often without the equipment or teacher training to do so adequately, particularly at the beginning of the pandemic. Universities had to invest considerable resources in deploying technological tools and connectivity and training teachers. And when the pandemic is behind us, it is hard to believe that things will go back to how they were. The technology deployed will be here to stay and the increased exposure to online learning may have permanently shifted preferences for this form of learning as far as a certain part of the population is concerned, further transforming HEIs.

This paper discusses the implications of these two disrupting trends, technology and demography, on higher education supply and demand. Understanding these changes is important for several reasons: first, as mentioned, HEIs are poised to undergo substantive changes

in the context of an intense digital transformation, the spread of artificial intelligence (AI) and advanced robotics, and a reduction in the youth cohort. HEIs that do not adapt to these changes may lose their relevance in the future. Second, there are clear indications that education is a source of resilience against technological change. That is, better educated people are more prepared to withstand the changes and more likely to benefit from technology, while less educated people are more likely to see their situation made worse. Ensuring that HEIs can help people to acquire the right skills is now even more important than before, but the ways in which this can be achieved may well be different from in the past.

Based on a compilation of existing evidence, this article argues that technology is fast changing the nature of occupations and jobs. Technology is rapidly creating new occupations, particularly those related to the production and maintenance of technology. But traditional occupations are also changing, as companies deploy new technological tools.

Moreover, because the division of labour between machines and humans is changing, we argue that the demand for skills is changing as well. One direct consequence is higher demand for advanced digital skills. But other skills are also seeing increasing demand. Soft skills fall into this category, as there is mounting evidence that these skills are becoming more valuable in the labour market. Perhaps paradoxically, the more we bring technology into our lives, the higher the demand for "human" skills, such as empathy, communication, problem solving or adaptation to change, in which humans have, at least for now, an advantage over machines. Machines are best suited to performing repetitive tasks and, as they become cheaper and more ubiquitous, are substituting workers in routine-based tasks. Since most of these jobs are performed by workers with medium-level skills, the demand for workers with these skills is declining as well.

We also discuss how technology is changing the way we work and how this in turn further changes the demand for skills. The expansion of remote work and the spread of technological platforms that can, almost frictionlessly, match workers to tasks is changing work as we know it. While the majority of people still engage in one full-time job, with fixed hours and in an office, an increasing number of workers are working remotely for several different employers on demand. The COVID-19 pandemic has exacerbated these trends by boosting telework and accelerating the deployment of digital technologies. As it becomes increasingly possibly to live, work and study in different places, or even different countries, the education and labour markets are becoming more global, creating global competition across universities and, at the same time, increasing the demand for global skills.

Finally, this chapter also examines how higher education institutions (HEIs) are responding to these technological and demographic trends. Online learning is becoming more ubiquitous, offering the potential to be a source of cost savings and increased access to higher education by the underprivileged. We review other developments such as how technology can help to document students´ learning outcomes, how it can facilitate peer-to-peer assessments, automation of the recognition of prior learning and the introduction of tools to track skill requirements and provide career guidance for students. HEIs are also increasingly responding to upskilling and reskilling demands, creating bigger and better staffed departments of continuing education, developing new shorter, stacked qualifications, and providing more granular micro-certifications.

The rest of this chapter is organised as follows. Section 2 describes the nature and implications of changes in technology and demography for HEIs. Section 3 describes how HEIs are adapting to these changes. Finally, Section 4 discusses some implications for HEIs and governments and provides final conclusions.

2. Two drivers of change

Technology and demography are creating important shifts in the demand for skills and education.

2.1 Technological advancement

Since the industrial revolution, the emergence of new technologies has sparked fears that machines will displace humans at work. In recent years, the expansion of advanced robotics and artificial intelligence has rekindled this debate. An enormously influential study written by two Oxford University professors (Frey & Osborne, 2016) predicted that in the United States, 47" % of jobs could soon be automated with existing technologies. Quite interestingly, they made use of an artificial intelligence algorithm to predict which occu-

pations had a higher risk of automation. Their results, coupled with the much-hyped progress in self-driving cars and smart robotics, ignited a global discussion on the future of work and the threat of technology-induced mass unemployment.

2.1.1 The end of jobs?

Since then, these conclusions have been qualified in various ways. First, the study assumed that all tasks are equally automatable within an occupation, while in fact more repetitive tasks are more likely to be automated than less repetitive ones. Considering this distinction, new studies found that very few occupations are fully automatable and only 9% of jobs in the USA and 8% in the East of Europe were at risk of being automated away in the coming years (Armtz et al., 2016). Second, the fact that automation technologies are available does not necessarily mean that they will be deployed. Factors such as the cost of labour, the regulatory environment and the prevailing social norms influence whether companies introduce such technologies.

Given these caveats in the predictive studies, it is important to measure whether companies are actually replacing humans with technology. Some studies measure the impact of industrial robots on employment; while results vary across studies, most conclude that introducing robots in a company reduces jobs: each additional robot per 1000 workers reduces employment rates by 0.16-0.2 percentage points (Acemoglu & Restrepo, 2020, for the United States; and Chiacchio et al., 2018, for European countries). Other studies measure the effects of introducing AI; as with industrial robots, the deployment of AI is shown to have a negative effect on employment (Acemoglu & Restrepo, 2020b).

Yet while there are grounds to be worried, economic theory and history also point to reasons for optimism: new technologies tend to destroy existing jobs but also pave the way for the birth of new occupations and the creation of new tasks. In fact, **the creation of new jobs is the reason why, despite the constant introduction of new technologies, the proportion of people employed has increased over the years** (Acemoglu & Restrepo, 2019). **The big question is whether this time will be different.** If history offers any lesson, it is that the jobs to be facilitated by technology in the future cannot even be imagined today. Who would have anticipated 30 years ago that occupations such as a social media manager, digital marketing specialist, AI trainer or app creator would be the source of so many jobs today? **The key to the future of jobs lies in finding new, as yet unthinkable uses for AI or robotics, the aim of which goes beyond the objective of saving labour for companies** (Acemoglu & Restrepo, 2019). **HEIs, as research havens, can play a big role in achieving this.** Of course, it raises the issue of how to prepare people for jobs that we cannot yet predict, a subject to which I will come back later in the chapter.

2.1.2 Technology does not affect all jobs in the same way

Even if the overall effects of technology on jobs are hard to predict, there is mounting evidence that some workers have been more affected than others. A growing number of studies, measuring how the labour market adapted to the introduction of computers, found that people who performed repetitive, routine-based tasks were at a much higher risk of being replaced by these technologies than those doing less repetitive tasks.

As a result, the demand for humans has declined in routine-based occupations and increased in occupations that are intensive in non-routine tasks (Autor, et al., 2003; Goos & Manning, 2007; Acemoglu & Autor, 2011; Darvas & Wolff, 2016). And because many routine tasks are concentrated in occupations that require medium-level skills, such as industry operators or administrative workers, the demand for jobs that require such skills has declined. In contrast, non-routine tasks are found in occupations that either require relatively little education and high manual dexterity (such as construction workers or hairdressers) or a high investment in education (such as engineers or managers). As a consequence, the demand for jobs at both ends of the wage and education distribution has increased. This effect, coupled with the hollowing-out of the middle of the jobs distribution, has been called the polarisation of the labour market and has been observed, to a varying degree, in most developed economies. It is a phenomenon that has had the unfortunate consequence of destroying many middle-class jobs. At the same time, because technology is increasing the demand for many higher-skilled occupations, it is also fuelling the demand for higher education.

As AI and advanced robotics make further inroads into society, these trends are expected to continue in the future. To date, even the smartest machines have a comparative advantage performing activities that

are highly structured and monotonous. In contrast, current technologies are at a disadvantage compared with humans in tasks that require complex problem solving, empathy, understanding social interactions or creativity. Available studies indicate that the introduction of industrial robotics increases the demand for higher skilled workers, while replacing some low and medium-skilled employees. As it was with computers, robots compete more directly with people employed in routine-based occupations (Acemoglu & Restrepo, 2020; Borjas & Freeman, 2019). A study for Europe found that the introduction of industrial robots increases the participation in employment of professionals, technicians and service workers, while reducing the employment of office workers, agricultural workers, artisans and operators (Chiacchio et al., 2018). In the specific case of Germany, the introduction of robots created greater demand for managers, legal specialists and technicians, while systematically reducing the demand for machine operators.

2.1.3 Fast technological change is increasing the demand for new skills and rendering other skills obsolete

Along with changes in the demand for occupations, technological change is creating demand for new skills. According to a recent study, in 2019, 30% of companies in the United States demanded skills that were not required in 2007 (Deming, 2020). At the same time, 16% of vacancies in these companies asked for skills in 2007 that were obsolete by 2019. Skill turnover is highest in ITC-related occupations (47%). Business-related and design and media occupations also have high rates of skill turnover, while occupations related to education and healthcare have the most stable skill demand.

Another important finding of this study was that workers in occupations with a high skill turnover experience lower gains in wages, as they progress in their careers, than workers in more stable occupations. One interesting comparison is made between engineers, particularly ICT-related workers and scientists. Engineers are subjected to a much faster skill turnover than scientists. At the beginning of their career, engineers tend to earn more and be more job-ready (judging by the fact that they have a better chance of finding jobs in their field of study) than scientists, who initially earn less and find jobs across a wider range of occupations. However, as they progress in their careers, scientists tend to enjoy higher wage growth than engineers. In addition, more scientists remain in their occupations than engineers. The study concluded that scientists experience faster earnings growth because they can reap the fruits of experience. However, in less stable fields, professionals must constantly learn new skills and run a higher risk of becoming obsolete. After a few years, many engineers are not willing or not able to keep up with the fast changes and leave these high turnover occupations.

This suggests that there may be a trade-off between learning market-relevant skills - that can depreciate quickly - and learning general skills that keep their value longer and can be used in a wider range of occupations, but initially offer a poorer match with labour market requirements. From the point of view of individuals, **the best balance is one where people acquire strong general and transversal skills that provide the ability to continue learning, complemented by enough market-relevant skills to ensure employability in the early stages of a person´s career.** Finding out which skills they are and keeping up with continuous market changes is an increasingly challenging task, but one that, as I will argue later in the paper, must be undertaken by HEIs.

The COVID-19 pandemic has likely accelerated skill turnover. Digital technologies have kept economic activity going during the pandemic through telework. This has forced many companies to deploy digital technologies at a faster rate than would have been the case without the pandemic. In turn, the faster spread of broadband, cloud computing and other digital technologies is paving the way for the introduction of AI and robotics. The fact that technologies do not get sick or spread the virus may have also led companies to adopt automation technologies. This is in line with what has occurred in previous crises, which showed that technology adoption does not advance continuously. Instead, there are events, like recessions, that precipitate its deployment. A study for the United States, for example, showed that the Great Recession boosted the adoption of automation technologies and caused an abrupt increase in the demand for highly skilled workers (Kahn & Hershbein, 2018). It is therefore likely that COVID-19 will heighten the demand bias towards high skilled workers.

2.1.4 The rising demand for soft, "human" skills

Perhaps paradoxically, as new technologies spread, the value of being able to interact with humans increases. A study by David Deming (2017) showed that over the period 1980-2012 the share of employment in occupations with intensive use of social skills increased by 11.8 percentage points. Interestingly, Deming divided all occupations into four mutually exclusive categories depending on whether they used STEM and/or social skills above or below the mean and found that the share of employment increased the most in occupations with high use of both social and maths skills, followed by those with high use of social skills but low use of maths. On the other hand, all occupations with low use of social skills declined during the period of study. Wage patterns also strongly suggest increasing demand for social skills; over the period 1980-2010, wages grew most in occupations with high use of social skills, and the highest growth was seen in occupations with high use of both social and high maths skills. However, wages in occupations with high use of maths, but low use of social skills declined during the period. Other sources of individual level data confirmed the increasing returns of social skills.

David Deming interpreted these findings by arguing that "computers are still very poor at simulating human interaction. Reading the signals of others and reacting is an unconscious process, and skill in social settings has evolved in humans over thousands of years. Human interaction in the workplace involves team production, with workers playing off of each other's strengths and adapting flexibly to changing circumstances. Such non-routine interaction is at the heart of the human advantage over machines". **Thus as machines become increasingly ubiquitous, it is precisely what makes us human – our ability to connect, empathise and understand others — that becomes our main source of comparative advantage in the labour market.** Many of the occupations that are high in the use of STEM and low on the use of social skills are quite intensive in routine tasks that can be increasingly mechanised. The high value of social skills is in line with other estimates by Heckman and Kautz (2012), who found that cognitive skills explain only a small part of the variance in labour market outcomes and that non-cognitive skills (of which social skills are a part) might explain a larger share of the variance. It is also in line with estimates indicating that soft skills have significant wage returns and help to close the gender gap (Balcar, 2014). An important caveat is that Deming´s research referred only to the United States. I am not aware of any similar studies suggesting the growing importance of social skills in other countries, in terms of ascertaining whether this pattern is widespread across countries.

Another manifestation of the value of hybridisation, that is, the combining of different types of skills, comes from studying the freelance platform industry. Freelance platforms are online marketplaces (OLM) where self-employed persons (freelancers) sell their services. Over the period 2017-2020, the global market for OLM increased by 50% (Kässi & Lehdonvirta, 2018). On these platforms, each person posts their profile, skills and experience, as well as the services offered and the price they charge per hour or project. Data from the platforms´ transactions therefore provide valuable information on the prices commanded by different skills. A recent study by Stephany (2021) used OLM data to that end and grouped skills into 8 clusters: Audio Design, Data Engineering, Graphic Design, 3D Design, Legal Services, Software and Technology, Support and Translation and Writing. He found that learning skills across skill domains increases the hourly earnings that freelancers get on the platform. He also found that the value of these additional skills varies considerably depending on the skills a freelancer already has, showing the value of developing personalised skilling pathways.

2.1.5 Upskilling and reskilling needs are rising

Fast technological change has created large skills bottlenecks for companies and workers. A recent study for the UK, for example, found that 69% of employers indicated that they are facing a digital skills gap (Microsoft & Goldsmiths, 2020). What is different about this so-called fourth industrial revolution is the speed of change. In the past, countries adapted to previous revolutions by preparing the new generations for future jobs. However, in this revolution companies and active workers will have to adjust in the current generation. Just by way of comparison, it took almost a century to spread electricity across the world, a process that is still unfolding, but it has taken less than 15 years to spread smartphones to more than 50% of households in the world (Bosch et al., 2018). Middle-aged and mature workers, not native to digital technologies but increasingly forced to coexist with them, are likely to be the most impacted. Another group of at-risk workers are

those who lack the social and advanced cognitive skills that are increasingly required in the labour market.

Promoting the acquisition of basic transversal and market-relevant skills for children and youth will therefore not be enough to prepare a labour force in need of constant retooling. For some decades, there has been an ongoing discussion about the need to promote lifelong education. However, up to now, only a minority of people have engaged in education as adults. Education systems and public budgets are not yet prepared to meet a potentially large increase in demand. The expansion of existing higher education systems, mostly geared to young people, will not do; adults learn in a different way and have different requirements and time constraints from young people. **Promoting more avenues for adults to acquire more sophisticated skills (upskilling) or to retool (reskilling) has become an increasingly important priority for governments, education and training systems.**

2.1.6 Fast technological change is increasing the gap between what is taught in HEIs and what is required in the labour market

A recent study by the Center for the Governance of Change (2021) at the IE Business School in Spain examined the match between the skills required in the labour market – through vacant posts – and the skills taught in colleges via an analysis of course descriptions in Denmark, the UK and Spain. They found that many HEIs have not kept pace with the changing needs of the market; private universities and newer institutions are more likely to teach skills that match labour market requirements. They also found **skill gaps that are bigger in the category of transversal skills (such as communication skills or the ability to learn independently) than for technical skills.**

2.1.7 Technology is also changing the way we work, with further consequences for the demand for skills

As technology enables ubiquitous connectivity, it changes how and where we work. Many digitally-enabled jobs can, at least potentially, be performed remotely if workers have a good internet connection. According to the OECD (2021), the pandemic increased telework by 10 percentage points in Japan, 12 in Denmark, 15 in Italy, 18 in Australia, 20 in Great Britain and 26 in France.

It is not yet clear how many companies will return to business as usual once the pandemic ends, but it is likely that telework will increase relative to the situation pre-COVID-19. As jobs go increasingly remote, there will be less of a need to live and work in the same location, opening the door to a global labour market, with more and more people in professional occupations working remotely for companies abroad. In this scenario, workers with global skills, such as foreign languages and/or the skills required in more advanced markets will see their opportunities increase. At the same time, workers will face rising competition from workers in other locations, particularly from high skilled workers in less developed countries, who can be hired at a lower cost (Baldwin, 2019).

Technology is also changing the nature of work. From having one job at a time, it is becoming increasingly possible to combine multiple, project-based jobs, or "gigs" in more than one company at a time. This is facilitated, on the one hand, by the spread of remote work and, on the other, by the existence of platforms that match labour demand and supply through AI algorithms. In the past, companies hired workers as permanent employees because they wanted to have direct access to certain skills when they needed them, saving on the transaction cost of finding the right worker for every potential task. Today, artificial intelligence has dramatically lowered the cost of matching needs and workers, and this is possible across a large range of occupations and skills; from workers in transportation systems – famously exemplified by UBER or LYFT— to workers in translation services, graphic design, creative writing and many others. In the United States, the industries with the highest percentage of freelancers are art and design with 75% of workers, followed by entertainment (55%) and construction (52%) (Upwork, 2019). In this country, freelance workers have steadily increased from 53 million in 2014 to 59 million in 2020, with 68% of freelancers having started in the last five years (Schulz, n.d.). European countries also saw a 45% increase in freelancing over the period 2014-2019. Globally, freelancers could represent up to 35% of the workforce. Depending on the country, labour regulations treat freelancers as independent workers or as employees. To the extent that more workers offer their services through these platforms, particularly if they do so on

a self-employed basis, the need for self-managing and entrepreneurial skills, such as marketing, client communication or financial planning, will increase (Legiit, n.d.). It will also be necessary to adapt the welfare state so that freelancers can attain access to social protection schemes and publicly sponsored reskilling opportunities that are today only available to salaried worker in many instances.

In short, technology is changing the demand for jobs, the skills required in the labour market and where and how we work. In the process, the demand for workers in occupations intensive in routine-based tasks is declining while the demand for occupations intensive in non-routine activities increases. Technology is boosting the demand for "human" skills, as least in the United States, and increasing the demand for workers who combine both STEM and social skills. Technology is increasing the need and demand for skilling and reskilling. Technology is also shifting the scope of application of skills: fostering some local labour markets – as more people can work from anywhere — and, at the same time, a more global market — as it is now possible to export and import talent without migrating. All these trends create important opportunities and challenges for the higher education sector.

2.2 Population aging

At a slower pace than technology, but still steadily, demographic change is transforming societies and altering the demand for skills. According to United Nations data, the number of people older than 64 will more than double in the next 30 years, from about 700 million to 1.5 billion people, up from 9 to 16 percent of the population (United Nations, 2019).

For HEIs, the most direct consequence of population aging is the reduction in the size of the youth cohort. While globally, this cohort will still be growing in the next 30 years, albeit at a lower rate than in the past, in developed nations this cohort is projected to decline in absolute terms, from 140 million in 2020 to 132 in 2050 (United Nations, World Population Prospects, 2019).

Another direct and relevant consequence of population aging is the extension of working lives. It is unlikely that the extra years of life will all be spent in retirement, since people reach retirement age in much better health than in the past. In addition, pension systems are unlikely to cope with the increased costs of paying pensions to a higher share of the population for longer (Bosch et al., 2017). The more feasible scenario is one in which people will be working for longer, although not necessarily full-time. Retirement ages have already increased from 60-65 to 67 and beyond in many countries.

Another consequence of population aging is the increasing burden of disease. In only the last decade, for example, life expectancy has increased by more than 6 years, that is, more than half a year each year, but the number of years a person can expect to live in good health has increased by only 5.4 years. Thus, the number of years in which each person might live with some form of disability has increased.

These changes are fuelling growth in the demand for medical and care occupations. The department of labour in the US estimates that in the next ten years, six occupations in this group will be among the ten fastest growing occupations in the United States (Bureau of Labour Statistics, 2019). Similarly, Schady et al. (2019) forecast a very large increase in the demand for doctors and nurses in Latin America (from 1.3 million doctors and 3.2 million nurses in 2018 to 3.1 million doctors and 8.3 million nurses in 2040). Another factor that will contribute to the rising demand for medical and care professionals is the fact that these occupations are unlikely to be automated in the coming years. To date, algorithms and robots have not become adept at empathy, a core skill requirement in these occupations, and have a hard time with non-structured, complex tasks, as most tasks in the medical and care occupations are. A more likely scenario is one in which AI applications complement humans in the areas of diagnosis, scheduling, accounting and administration, helping doctors, nurses and caregivers to improve quality and reduce the costs of services (The Medical Futurist, 2021).

3. Technology and demography are already shaping the supply of education and will continue to do so in the future.

Technology and population aging are already shaping the supply of education and these trends will continue to occur in the coming years.

3.1 The most obvious technology-driven change is the increasing presence of online learning, accelerated by the Pandemic.

The number of HEIs that are offering online courses had already increased substantially, even before the pandemic. In the United States, data from the Nacional Centre for Education Statistics (NCES) suggests that in 2018, 35 percent of post-secondary students were enrolled on online courses at degree-granting institutions. Private for-profit colleges had the highest share: 67% at institutions with some online courses and 22.5% enrolled at exclusively online institutions, while the corresponding figures in public colleges were 8.9 and 0.3 percent, respectively (Lederman, 2019). Likewise this data showed that graduate students were more likely to be enrolled on online courses than undergraduates.

The COVID-19 pandemic is likely to intensify this shift. As a result of social distancing measures, most HEIs had to switch, virtually overnight, to some form of online learning. Going forward, many observers see very high continued growth potential in the online market (Wadhawani & Gankar, 2021). The disruption caused by the pandemic is a big opportunity to innovate in the deployment of e-learning solutions. Online learning is seen by many HEIs as a way to scale up training and reduce costs per student, in view of the continued increases in higher education costs. In the context of higher education and from a learning outcomes perspective, online learning has proven to be no worse than face-to-face learning, with some modalities, like blended learning — that is, the combination of face–to-face and e-learning – exhibiting superior learning outcomes (Means et al., 2013; Pei and Wu, 2019)

3.2 Technology brings new pedagogical methods and tools

Online learning brings new affordances to learning, as well as some limitations. Producing effective learning experiences requires taking the distinct nature of online learning into account. Research indicates that online students engage in more quantitative reasoning and may retain more materials than those in a classroom (De Larreta-Azelain and Martin, 2016). In contrast, in-classroom students report more teacher-student interactions and more peer-to-peer discussions. There are a number of possibilities afforded by technology that can enhance the learning experience. Examples include sharing high-quality open educational resources, such as videos, podcasts, online lectures and other materials available online to support teaching; and using social media to engage in peer-to-peer discussions.

Technology and education analytics also make it possible to track students´ interactions with learning materials, assignments and assessments. Technology can help to document students´ learning outcomes as they meet milestones. Similarly, social media platforms can help facilitate peer-to-peer assessments. Furthermore, institutions are beginning to leverage AI to develop highly personalised learning experiences and to identify and track students at risk of dropping out.

Additionally, technology has provided tools that are increasingly deployed in the learning space. Learning management systems facilitate course administration by managing and tracing students' activities through their learning journeys. Virtual and augmented reality tools are increasingly being used to replicate scenarios that can be costly to reproduce in real life settings. Similarly, gamification, enabled by technology, is another resource that can increase student engagement and learning.

Yet it will take time and effort to capitalise on these technologies. Numerous research papers have proven that it is not about the affordances provided by the technology, but rather how these affordances are put into effect with new pedagogies and processes. Many studies, for example, have documented that bringing computers and other digital devices into the classroom does not increase learning outcomes unless teachers are trained how to use these technologies and materials for effective learning (Cristiá et al., 2017).

3.3 The emergence of life-long learning and alternative credentials.

Longer working lives, combined with fast technological change, have increased the need for upskilling and reskilling and open up the potential for multiple careers along a person´s lifespan. In the future, the number of adult learners is poised to increase as a proportion of all higher education learners. Moreover, this group is likely to have very different requirements from the younger cohort. According to NCES data, in the United States, enrolment of college students aged 25-34 has already increased by 35 percent in the last decade, while overall enrolment rates fell during the same time period. In general, because they work first and study

second, they are less likely to favour a full-time, face-to-face, immersive learning experience, preferring instead to engage in less intensive and shorter qualifications imparted in an online or blended format, thereby increasing the demand for shorter and highly labour market-relevant certifications.

Many institutions already provide alternative certifications to recognise these skills, such as micro-credentials, badges or industry-recognised certifications. Some certifications provide credits to be used towards a degree. Some alternative credentials can be stacked to attain an official diploma or certificate. Some universities are already offering students the possibility of attaining a micro-credential for any individual course in their entire portfolio that has been successfully completed.

This segment of the education market is attracting new players, such as learning platforms created as offshoots of academia, like EDx, Coursera or UDEMY, and technology players like Google or LinkedIn Learning, and many of them take the form of MOOCs (massive open online courses)

Going forward, the issue of whether MOOCs, alternative certifications and the new set of providers that they are attracting will disrupt the traditional segment of undergraduate and master's degrees remains open to discussion. At the onset of the MOOC revolution, around 2011-2012, it was widely stated that MOOCs would radically alter higher education by reducing costs, allowing global access to the best teachers and expanding learning opportunities to the underserved, either in low-income households in high income countries, or in developing countries. These promises have not yet materialised. In the United States, enrolment on massive open online courses, after increasing initially, has declined in recent years. A study in the US analysing a popular learning platform found that most MOOC participants are from developed countries, and many have taken a similar course before. In addition, very few participants complete the courses or attain certifications and completion figures have not improved over time (Reich and Ruiperez-Valiente, 2019). In Europe, there is also evidence that MOOC participants are highly educated: 80 percent have a college degree and are highly digitally competent (Castaño Muñoz et al., 2016).

Given these figures, MOOCs have not so far revolutionised the higher education industry, nor have they facilitated increased access to higher education for underserved, disadvantaged people, with the important exception of the unemployed; data from Europe shows that MOOC participants are more likely to be unemployed than the overall population. The low completion rates, while not necessarily a problem in the professional segment, as people may take a course for personal development, do not bode well for the degree-granting segment of the education market. This being the case, MOOC providers are increasingly concentrated in the professional market (Reich and Ruiperez-Valiente, 2019)

In the future, online learning, and in particular MOOC providers, may need to innovate in pedagogy (and andragogy) to become a credible disruptor of higher education, devising new tools to increase completion rates. They will also need to provide further student support, through mentors and tutors, to motivate students and reduce dropout rates. Another area that offers opportunities for improvement is the facilitation of more student-teacher and peer-to-peer interactions. This will bring MOOCs closer to hybrid forms of learning, likely increasing learning outcomes but reducing the potential for economies of scale and the anticipated cost reductions.

3.4 New tools for tracking skill requirements and providing career guidance for students

Big data and AI have made it possible to create technology-based tools to track the demand for skills and provide individualised career guidance for students. New sources of data, such as data from online vacancy boards, social media or online freelance platforms, provide highly granular, real-time information on the demand for different occupations and skills. These data, complemented by traditional sources of labour market information and AI algorithms, are powering new tools to help people and HEIs to navigate a changing labour market. Data from online job boards offer very rich information on which occupations are rising or falling in demand, and which skills, experience and education levels are required in vacancies. Social media companies, such as LinkedIn, also gather anonymised labour market data on the demand for different occupations and the skills, experience and education of people working in those jobs, self-reported by users. Likewise, data from online labour platforms, such as Upwork, track the profiles of users that sell services across different occupations, along with their skills, the rates they expect to get and the jobs they have done in the past, providing a basis for understanding the demand and value of different skills in the labour market (Stephany, 2021). Some companies are beginning to build technological platforms, bringing this information together to facilitate learners and HEIs´ decisions on courses and portfolios.[1]

3.5 Automating recognition of prior learning

Another field in which technology holds promise is the automation of recognition of prior learning (RPL). In a world of constant change, more and more individuals want to further their higher education during their careers. Yet developing successful learning trajectories starts with acknowledging and recognising existing skills, regardless of where and how they were attained (Kitto et al., 2020). The objective is to save learners from undertaking training in subjects they already know. Up to now, this recognition has proven very difficult due to the differences in the way each HEI describes and defines the curriculum. In some countries or regions, qualifications frameworks (QF) provide skill equivalences across different degrees at national or international level (like the European Qualifications Framework). However, a rapidly changing labour market means that there is a need to constantly update QF. As a result, RPL continues to be a challenging venture.

Studies have begun to show that rather than manually finding skill equivalences between subjects and courses taught in two HEIs, Natural Language Processing techniques can generate automated equivalence across courses and subjects in terms of their competences, facilitating the automation of RPL (Kitto et al., 2020). Nonetheless, in order for this to be possible, HEIs and workers will need to provide a detailed description of the competences provided in each course and subject and/or those developed at work. Developing international agreements to mandate the filling of some comparable fields for each programme and course could greatly help to support this automation.

4. What next?

Technology and demography are causing unprecedented change in the labour market and altering higher education supply and demand. But technology and demography are not a matter of fate; governments, HEIs, companies and learners can develop a human-centric approach to put technology and demography at the service of people.

First, it is becoming increasingly clear that education and skill acquisition are a source of resilience. All the above-mentioned changes go in the direction of increasing the value of higher education. Not only are highly skilled people more likely to keep their jobs in the face of automation, but they are also more likely to benefit from, and contribute to, the productivity gains afforded by technology. Expanding access to higher education for people of all ages must therefore continue to be a priority.

Second, HEIs need to closely track the alignment of the skills they are teaching with labour market needs. Paradoxically, the consequence of living with more technology is that human skills, that is, those skills that distinguish us from machines, are increasingly important. Many HEIs, particularly the oldest and public ones, are almost entirely focused on teaching hard skills, but need to make the teaching of soft skills a higher priority in their curricula. Moreover, it is essential that learners acquire the ability to learn how to learn as early as possible, as many people will need to constantly upskill and reskill throughout their lives.

Third, technology and demographic trends are conspiring to make the traditional segment to which most HEIs cater today - the fresh out of high school, or fresh out of college population - increasingly less relevant, unless the percentage of those enrolled in HE in the 18-25 cohort notably increases, or advanced economies´ HEIs attract more students from developing countries. Yet at the same time, a new segment is becoming increasingly important: the market for lifelong learners, which has very different characteristics and needs from the youth market. HEIs will need to innovate to produce education relevant to this population. Given their characteristics and time constraints, this group is more likely to request individual courses, rather than degrees, and to be taught remotely rather than in immersive face-to-face experiences, or with a combination of face-to-face and online learning. The extensive supply of MOOCs developed by many HEIs constitutes a first step, but more innovation is required to increase completion rates and reach underserved populations. Promising avenues are adding more human interaction, through

1. See for example, https://www.burning-glass.com/ or https://www.futurefit.ai/pathways/

mentors, tutors and peer-to-peer interaction. HEIs will also need to continue developing flexible portfolios of courses and certifications that are market-relevant and suited to the needs of the adult population.

Fourth, technology is not only changing the demand for skills, but is also providing the means to create valuable tools to support learners. HEIs, with the cooperation of governments, need to strengthen their links with employers and invest in data-enabled technological tools to track the changing needs of the labour market. Such tools will help align portfolios with the labour market and provide valuable suggestions to students seeking advice on what occupation to develop or which courses to take.

Fifth, HEIs, companies and governments need to promote agreements and technology to facilitate the recognition of prior learning. It is essential for learners to get recognition for the knowledge and skills they have acquired, irrespective of where they got them, so they can focus on what they do not know.

Finally, HEIs and governments will need to develop the right pipeline of professionals in the medical and care occupations.

Some structural dynamics, including a declining youth market and rapid skill obsolescence, have weakened the case for business as usual. They force HEIs to look for new market segments and to continue expanding the use of new tools and pedagogies to reach them. While some HEIs, probably the most successful ones under the status-quo, may choose to continue with their traditional models, many others will see these changes as an opportunity to reinvent themselves in order to continue leading talent and innovation development in the years to come.

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From Homo Economicus to Persona Implicitus: The concept of students in the Anthropocene age

Keri L. Facer

Abstract

Universities are designed around and governed by particular ideas about students. As this idea changes, so does the university. Indeed, the key long term historical shifts in universities' structures and purposes have been accompanied and driven by equivalent shifts in the idea of what it means to be human and what sort of world we are preparing our students for. Western European enlightenment, humanism and neoliberal economic traditions have produced two dominant ideas about students that are in conflict today: a) The ethical-critical humanist and b) The self-maximising economic actor. Neither of these is adequate for an era characterised by climate change, disruptive technologies, polarising and precarious economies. What it means to be human and our understanding of how humans might create economic security for themselves is changing profoundly. To that end, this paper proposes a shift away from the dominance of homo economicus as a coordinating idea for universities. Instead, it suggests considering students as persona implicitus: A student who is already and will always be dependent upon and implicated within social, living and technological systems and relations. The promise of higher education under these conditions must be to help students understand and become aware of their interdependencies with each other, the planet, and their technologies, and to develop the capacity to create relationships that nurture and sustain the resources we share in common, and which underpin security and progress for all. We are no longer teaching autonomous humans; we are teaching people who are permanently and already embedded in an ongoing and changing world populated by other human and non-human people, the encounter with which is precisely what constitutes the educational experience.

The notion of the student

In this piece, I would like to argue that - if universities are to play a role in the civilisational change required to create sustainable societies - the notion of the student that we have inherited from both European enlightenment and neoliberal economic traditions needs to change. We need to fundamentally rethink our assumptions about who our students are and their relationship with the world.

The ideas we have about our students and their futures are important. They function as 'imaginaries' (Jasanoff & Kim, 2009) that organise the work of universities, coordinating (albeit imperfectly) the people, materials and practices of the institution towards particular forms of education-oriented towards particular concepts of the student. While always contested, different notions of the student are dominant in different university traditions and historical periods: from the future civil servant of ancient Chinese and Egyptian universities, via the clergy of medieval Europe, to the disciplined citizen of the Humboldtian university and its descendants. The concepts of the student that coordinate assumptions in the contemporary university are visible on websites and in mission statements – these students are 'world-class professionals' (Manchester Metropolitan) 'leaders who make a difference globally' (Harvard) or students who will 'graduate ready for work' (Sydney University), amongst others.

In universities, the post WW2 era has been characterised by a conflict between two dominant notions of the student: first, the European humanist idea of the enlightened individual for whom the purpose of education is the development of the ethical self and the capacity to lead and live wisely in the world; and second, the student as a self-maximising economic actor, concerned with education as an investment in their personal human capital for sale in the commercial marketplace. There is no doubt that the latter is and has

been 'winning' for many years, fuelled in particular by the increasing debt burden of students. However, the point I would like to make in this piece is not that our attention should be dedicated to replacing such instrumental neoliberal educational values with enlightened European humanist values. Instead, I want to suggest that neither of these ideas of the student are adequate for current times. Therefore, **a new concept of the student is necessary to coordinate the work of universities in an era of climate change, radical wealth inequalities, changing forms of employment and disruptive technologies.**

Beyond 'homo economicus'

Let us start with what is unarguably the dominant notion of the student at the heart of many universities today: the student investing in their human capital to prepare for a future world of work, ready to become the rational and self-maximising homo economicus of economic forecasts. This is premised upon a vision of higher education as a way of guaranteeing financial security for both students and society. The promise is clear: degrees = jobs = economic security for individuals and states. However, this is no longer the secure promise that it might have seemed in the past. There is a declining 'return on investment' for students as competition for graduate roles increase (Brown et al., 2012). In a radically changing job market, we see graduates in precarious employment, with degrees providing a positional advantage in a competitive environment; but not economic security (Standing, 2021). At the same time, we also see highly educated societies that, despite nearly half the population going through, have not eradicated economic inequalities or found a way to achieve economic security for all their people. Indeed, the fantasy that higher education *without economic reform* will create secure economic futures for graduates or society is wearing particularly thin today.

But even if we set aside this broader macro-economic question and take the notion of the student as a future worker seriously, the idea that higher education is about investing in the individual human capital of the student to prepare for jobs in the marketplace is looking increasingly inadequate as a coordinating imaginary in the university for two reasons. First, jobs alone will not guarantee 'economic wellbeing' (the ability to mobilise the resources necessary for a secure life). Indeed, new economic thinking points to the fact that financial security needs to be understood as deriving from a much wider set of 'provisioning practices' that provide infrastructure, care and common resources (Facer, 2021; Raworth, 2017). Second, climate change, ageing populations and technological disruption are set to create a highly disruptive environment for these economic provisioning practices, including the world of formal employment. Even in terms of strongly instrumental economic arguments about higher education's role in promoting future economic security, in other words, there is declining merit in simply conceptualising the student as a 'future worker'. To elaborate a little. Let us consider what it takes for an individual to be 'economically secure'. This, according to the economist Kate Raworth, comes from four different sets of 'provisioning practices' (Raworth, 2017):

- *Paid work* – What we tend to think of as 'the economy' or 'the market'; namely, forms of employment and exchange through which households obtain money and/or goods with exchange value. This might be either formal employment, acknowledged through taxation and by the state, or informal work, providing access to money and/ or goods in the grey economy.
- *Household provisioning* – This is work within households, providing care for people: looking after children and the elderly. It includes growing and preparing food. For many women and children in areas of ecological stress, household provisioning also includes gathering water in precarious situations or making a safe shelter to live in. This household labour is a foundational form of provisioning for economic wellbeing and is essential to the body's capacity to take on paid work.
- *Provisioning of the commons* – This refers to the provisions that are held in common by local and global communities, including, for example, access to clean air, water, trustworthy sources of information, common lands for growing food and a viable ecosystem to sustain agricultural production. These common resources are collectively produced by the aggregate of individual human and non-human actions and collectively used for personal and shared benefits. They create the conditions for all other forms of provisioning; their sustenance is therefore economically critical.
- *Provisioning by the State* – This refers to the infrastructural resources such as transport systems and roads, welfare and healthcare or long-term research and development, legal rights and freedoms – which create stable conditions to enable the effective functioning of the other three forms of provisioning.

Economic wellbeing, in other words, is not something that can be achieved - either by individuals or states - by considering the student simply as a future 'employee'. Instead, work in the formal marketplace is deeply embedded in and dependent upon the provisioning activities of these three domains: The household, the commons, and the State. As economists such as Raworth and Maria Mazzucato demonstrate, students' future economic wellbeing requires attention to these broader domains (Mazzucato, 2018). This sort of economic analysis is not simply theoretical; these ideas are being practically applied in a number of different cities and regions, from Brussels to Sao Paolo, Amsterdam to Colombia, as a basis for creating economic wellbeing at a city and regional levels. Even if universities are primarily concerned with the idea of the student as an economic actor, then this idea requires significant expansion beyond the individualised investment in human capital for formal employment to encompass their roles in households, in communities and as active citizens in states.

However, these four provisioning practices are also undergoing significant and disruptive change. First, the world of 'jobs' is changing. Trends towards increasing precarity and casualisation, the continuing global move of women into the formal workplace, polarisation of the economy between high and low paid work, and restructuring in the light of global supply chains, bring significant challenges even to professional roles (Buchanan et al., 2020). Even without the pandemic, technological developments and climate change promised to bring significant disruptions to formal and informal employment (Woodcock & Graham, 2019). Over the next decade, we may see a failure of economic recovery to bring a return of jobs and new experiments in Universal Basic Income, suggesting a re-orientation of employment towards casualised, voluntary and precarious employment, or even demanding 'education for a jobless society' (Sidorkin, 2017). In these conditions, informal labour plays a greater role in household incomes, while the gig economy offers 'the capacity to exploit and alienate workers in new and innovative ways' (Graham & Shaw, 2017: 6). Working, in other words – and as it is already in many parts of the world– may no longer be dominated by formal employment. At the same time, the urgent need to move away from carbon-based industries to comply with Paris Climate Agreement targets will mean significant demands for mid-career retraining in high carbon industries (Bezdek & Wendling, 2014). Finally, while the adoption of artificial intelligence is unlikely to be as universally transformative as its proponents suggest, is likely to bring a swift restructuring of employment in countries and industries with the resources to adapt rapidly. This restructuring is likely to further exacerbate inequalities in the short term and demand new working relationships between humans and non-human-like-intelligence in the long term. The world of work, in other words, is profoundly changing.

At the same time, there are ongoing dramatic changes in the other forms of provisioning that support economic security. The impact of ageing populations combined with declining younger populations, the challenges of childcare and intergenerational equity that these will bring, may require radically creative ways of provisioning care within households – as well as novel forms of care mobilised across country divides (as youth migrates to access employment elsewhere). Many families and homes globally will be vulnerable to climate change, which will disastrously affect the ability of those dependent upon local and household food production to provision themselves, increasing food vulnerability and migration. Likewise, water shortages are already making communities in water-impoverished areas increasingly unviable. When households are unable to access water, the consequences are extreme. These developments are not inevitable – climate action remains possible, appropriate water stewardship is achievable with regenerative and permaculture-based agriculture and the growth of micro-farming and urban farming demonstrate the potential for households and communities to resist these trends. Students need to be aware of these possibilities, particularly in areas of food vulnerability (in other words, in any city in the world, where just-in-time supply lines mean there is a risk of critical shortages in cases of relatively minor supply disruptions), which is critical to their future economic wellbeing.

In relation to both state and commons provisioning, the future presents a panorama of sustained struggle for which students will have to be prepared to defend commons and state provisioning practices. In the digital arena, the enclosure of both personal data and collective products of human endeavour will be a site of urgent political tension. Access to land and

water resources are intensifying globally, dispossessing communities and rendering previously autonomous lifestyles unviable. While the state's role as a guarantor of basic infrastructure, health and education investment, as well defender of legal standards, public trust, transparency and probity (all of which are essential for the continued maintenance of functioning societies and economies) is not guaranteed. Educating students 'for jobs' rather than as active community participants able to defend and sustain viable common resources – from truth to clean water – is profoundly inadequate under these conditions.

In other words, even if we consider the predominant notion of the student in universities oriented towards creating their own economic security, the high individualised self-maximising economic actor is no longer a viable notion of a student. Instead of the homo economicus fantasy, we need a different concept of students: one that recognises interdependence with the broader provisioning practices of households, community and state and which is able to act to create conditions of security for herself and with fellow workers and citizens in conditions of increasing precarity.

Beyond Humanism

European Humanist traditions of Higher Education are positioned against economically instrumental ideas of both students and universities, a tradition that resists the reduction of education and study to the notion of preparation for the workplace. However, the notion of the student at the heart of these European Humanist traditions overlooks two profound disruptions to the current idea of the 'human'.

The first disruption emerges from the awareness that humans are not outside or on an inert planet but deeply implicated as part of a global, complex and dynamic living system. Modern societies are realising for the first time in 300 years, what has long been known in many non-western communities, namely, that we are a living part of a planet that is alive (Ghosh, 2016; Todd, 2015). We are also learning that such liveliness will change the conditions of our existence for the foreseeable future. There will be, as Isabelle Stengers argues, no 'after' climate change – this is a fundamental shift in our awareness of humanity's place in the world that will require continued attention to our coexistence and collaboration with beings - from permafrost to carbon atoms - in the creation of our continued existence, that we had previously ignored (Stengers, 2015). At the same time, humans are also made up of other beings, dependent upon trillions of other micro-organisms, such that the boundaries of who we are shifting – we are 'holobionts' (in Lyn Margulis term) evolving through symbiosis with other beings (Haraway, 2016). **Therefore, being human is not a separate state from 'nature' but deeply entangled in it; one form of being alongside and interdependent with many others.**

The second disruption to the enlightened humanist model arises from the realisation that digital technologies, and the algorithmic intelligence that they use, now form a fundamental part of the processes that humans (except for a tiny minority) use to think and make sense with on a daily basis – from the algorithmic intelligence of mobile phones and search engines, to the logistical systems and databases of transport, food and energy supplies. Whether the promises of artificial intelligence are realised or not, the co-existence of humans with machine intelligence that does not operate in the same way as human minds is already here and will likely intensify. At the same time, as we confront the possibility of synthetic biotechnology to transform the body and the brain, reimagination of the human body as a site of human engineering becomes possible one in which our technological interventions and augmentations will be increasingly invisible. Making sense, creating knowledge and thinking, therefore, are both already and will increasingly be practices of collaboration between humans and their digital and symbio-technologies. While reports of an emerging 'singularity' of human-machine merging may be exaggerated, we are not autonomous from the machines that we are learning to think with. **As our technologies change, both the nature of human-human interactions and the nature of human-non-human interaction changes, and with it what and how we think, learn and know.**

Our belated rediscovery of the materiality of human beings within the ecosystem and our growing alertness to the co-emergence of humanity with our tools and technologies **both disrupt the idea of the autonomous human student, separable from his environment, educated for success in a human world detached from the biosphere and master of the tools being used to think with.**

Towards a new idea of the student: aliens in the classroom?

About 30 years ago, Bill Green and Chris Bigum wrote a paper suggesting that we were teaching 'aliens in the classroom', children who, because they had grown up with digital technologies, were thinking and learning in different ways (Green & Bigum, 1993). Today, as basic concepts of what constitutes economic security are changing, as our core ideas of what it means to be human are shifting as we grapple not only with technological change but radical environmental disruption, we might ask the same question. If we are not teaching homo economicus or the enlightenment individual anymore, who are these students in our lecture halls? I am inclined to suggest we are teaching ***'persona implicitus'*: a student who is already and will always be dependent upon and implicated within social, ecological and technological systems and relations.**

What might it mean to see our students in this way - to recognise them as embedded in the changing material realities of land and climate, as shaped by and dependent upon interactions between themselves and their communities, as interdependent with the tools that they are using? Many different practices are emerging in universities that point to what this might look like – from the work of Indigenous educators or the Common Worlds Collective or the Ecoversities network, pointing towards the pedagogies that might be needed to support students to understand themselves as part of a living world; or to the dialogue and design work of initiatives such as the Chalmers University Challenge Labs, supporting students to develop their capacities to work in collaboration with others and to reflect upon the tools and resources that they are using to do so.

However, the challenge is not primarily pedagogic innovation; this will come later. Instead, our task is to question our foundational assumptions about the students that we are teaching, the overarching stories we tell them about why they are in universities and the promises we are making when we offer a higher education. It is time to come clean about the fact that Higher Education cannot, on its own, guarantee the sort of 'ontological security' (Stein et al., 2017) it might have promised to individuals in the past – either through the fiction of the autonomous economic actor or the enlightened human. Instead, our promise to persona *implicitus* must be a different one: a commitment to support our students to understand and become aware of their interdependencies with each other, with the planet and with their technologies and to develop the capacity to create those relationships that nurture and sustain the resources that we share in common, and which underpin security and flourishing for all. We aren't teaching autonomous humans anymore; we are teaching people who are always and already embedded in an ongoing and changing world populated by other human and non-human people, the encounter with which is precisely what constitutes the educational moment.

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Demand for new professional knowledge, skills and competencies in the labour market: higher education, covid-19 and artificial intelligence

Francisco López Segrera

Abstract

The aim of this paper is to demonstrate the need for learning focused on the formation of specific skills and competencies. To achieve this, the curricula of universities, higher education institutions and vocational training centres must teach relevant knowledge that enables proper entry into the labour market. This leads to a need for the adoption of visions and strategies to transform higher education. The pandemic has increased inequality between regions, countries and social classes. It has brought about changes of great relevance in education and higher education and in its potential scenarios and future prospects. It has increased the need for certain skills and competencies that the labour market requires in this situation. We analyse how good practices are being developed in the Latin American region in public and private universities. The aim of these practices is to equip students with certain competencies and skills so that they can carry out their functions properly after graduation and enter the labour market without difficulties.

Introduction

The aim of this paper is to demonstrate the need for learning focused on the formation of specific skills and competencies. To achieve this, the curricula of universities, higher education institutions and vocational training centres must teach relevant knowledge that enables proper entry into the labour market.

Good practices are being developed in public and private universities in the Latin American region. The aim of these practices is to equip students with certain competencies and skills so that they can carry out their functions properly after graduation and enter the labour market without difficulties. At the end of our analysis, we include four good practices of this type.

On 11 March 2020, the World Health Organization declared that the Covid-19 coronavirus was a global pandemic (Parker and López, 2020). This led to dramatic changes in the geopolitical, economic, social and cultural environment. It accelerated emerging trends of automation and artificial intelligence (AI). Although vaccination in 2021 in developed countries led to great progress and a certain degree of control of the pandemic, in less developed countries, such as those of Latin America, "herd immunity" is still far from a reality. Consequently, it is vital to image the potential scenarios of higher education after the pandemic.

The pandemic has had a great impact on global supply chains and has stimulated the emerging centripetal trends of deglobalisation. Inequality has increased between regions, countries and social classes. Great changes have occurred in education and higher education and in education's potential scenarios and future prospects. *The pandemic has increased the demand for certain skills and competencies that the labour market needs in this situation.* When the pandemic is under control, higher education is likely to return in part to its face-to-face modes. Blended modes of a hybrid nature may also be adopted, and online activities may occur in a much higher percentage than before the pandemic. Nationally and internationally, the online educational offering will increase significantly, especially at postgraduate level. Universities with more resources will be strengthened while others will be left in a subordinate position or could even disappear, particularly those that cannot offer their bachelor's degree and postgraduate students a high possibility of employment.

2. Effects of the Covid-19 pandemic

We are at a global turning point: ecological collapse, the threat of nuclear war, technological disruption, a decline in US supremacy, a crisis in the supremacy of the West, and cracks in the traditional alliances between the USA and the European Union. The Covid-19 pandemic adds to all this. After it, the world will not be the same. Since the end of 2020, various vaccines have been administered. However, the expectations of achieving global herd immunity will take time if they are achieved at all.

The good news is that the state is emerging stronger against neoliberal capitalism's defence of the market. The pandemic has raised the visibility of and increased inequality, poverty and extreme poverty. "The implications for higher education will be considerable and mostly negative, amplifying gaps and inequalities between learners, institutions, and countries. There will be significant variations globally, with the **likelihood that universities in the poorest part of the world will be affected more severely"** (Altbach and de Wit, 2020).

The development of automation and AI have been seen to have a detrimental impact on employment, which increased globally with the effects of the Covid-19 pandemic.

A study by the International Labour Organization (ILO) showed the **negative impact of Covid-19 on the labour markets in 2020.** Globally, the employment rate of women dropped 5%, while that of men decreased by 3.9% (ILO, 2021).

According to the United Nations Economic Commission for Latin America and the Caribbean (ECLAC), in Latin America the unemployment rate increased by 2.6 percentage points and the employment and participation rates by 10.0 and 9.5 percentage points respectively (ECLAC, 2020).

Covid-19 triggered a global economic crisis with sharp drops in GDP in all nations. However, a fast recovery was observed in 2021 except in some countries and regions, as is the case of Latin America.

3. Covid-19, higher education and employment

3.1 Global and region figures on the number of students affected

The global gross enrolment rate (GER) rose from 13 million students in 1960 to 227 million in 2020. In other words, it increased from 19% of students enrolled in higher education worldwide in the age range from 18 to 23 years in 1960, to 38% in 2020. Regional and national differences in enrolment rate highlight the global inequality: 9% in Sub-Saharan Africa, 77% in North America and Western Europe, 52% in Latin America and the Caribbean, 26% in Central Asia, 45% in Western and Southern Asia, 39% in Eastern Asia and the Pacific, 46% in the Arab States, and 74% in Central and Eastern Europe (International Institute for Higher Education in Latin America and the Caribbean, IESALC, 2020b).

Covid-19 has affected around 1.6 billion students in 200 countries. This is equivalent to 94% of the global student population. Around 24 million students at all educational levels (180 countries) are at risk of not returning to education after the pandemic (IESALC, 2021).

In 32 of the 33 countries in Latin America and the Caribbean, face-to-face classes were suspended in 2020. This affected 165 million students of all educational levels (IESALC, 2020a).

3.2 Higher education scenarios after Covid-19

Higher education has had to face the challenges of Covid-19, which will be overcome when herd immunity is reached in many countries. In some countries, this could happen in the last quarter of 2021. In others, the process will take longer. Universities are outlining strategies to, at one extreme, return to face-to-face mode as soon as possible or, at the other extreme, to continue with higher education online during 2021 and perhaps throughout academic year 2022–2023.

3.2.1 Basic scenarios

- Continue with higher education online.
- Return to face-to-face higher education.

- Reorganize the old model with the experiences gained through higher education online and move to a blended mode.

3.2.2 Complex scenarios

1. **Return to normality**

   All teaching, research and extension activities return to face-to-face mode in all countries of the world.

2. **Face-to-face in countries with herd immunity, online in countries that do not have it**

   Only countries that have reached herd immunity return to normality. Other countries continue with higher education online.

3. **Return to face-to-face higher education in 2021 in "world-class universities" and in other universities in developed countries**

   In "world-class universities" – which are mainly Anglo-Saxon – and universities in many developed countries, face-to-face teaching will restart in the last quarter of 2021.

4. **Return to internationalisation**

   In the next academic year, the internationalisation of higher education will recover a high proportion of the participation figures of 5 million students that it had reached in 2019.

5. **Bachelor's degrees face-to-face, postgraduate programmes online**

   In postgraduate courses at public and private universities worldwide, higher education will remain online throughout 2021, although bachelor's degree courses will return to face-to-face mode.

6. **Blended higher education**

   Higher education could be provided in blended mode in certain bachelor's degree and postgraduate courses in some universities and countries. Students would go to the campus for intensive face-to-face experiences and then return home to complete the term online.

7. **Synchronous model: face-to-face and online**

   Courses would be taught face-to-face and online by the lecturer at the same time.

4. Professional knowledge, competencies, skills, labour market, artificial intelligence and employment

4.1 Definition of competencies and skills

Although they are synonyms, there are various definitions and concepts associated with the words "skills" and "competencies". According to the Royal Spanish Academy (RAE) dictionary, *habilidad* (skill) means the ability and aptitude to do something. These abilities could be innate or learned. In English, the word "skill" is used for learned abilities that are required to carry out a job successfully. They can be classified as soft skills (intra- and interpersonal) and hard skills (technical), each one of which has various transmission and training mechanisms for its development.

In the same dictionary, the word "competency" is defined as the expertise, aptitude or capacity to do something or to get involved in a certain matter. Hence, competencies are the knowledge and behaviour that will lead us to success in an undertaking.

Despite these differences, in many cases the words are used almost interchangeably. Other texts refer to "skill & competencies". In other words, the terms are joined to cover the entire phenomenon. Note that skill tends to refer to specific knowledge, while competency is more closely associated with behaviour (Vargas-Lama et al., 2021a).

4.2 Higher education, skills and competencies

Universities should offer the *professional competencies* of bachelor's degree disciplines, such as mathematics, physics, health sciences, engineering, architecture, business management, finances, economics, international relations, negotiation techniques, computer studies, software, big data, sociology and design. **They should also offer soft *skills*** such as: leadership, communication, languages, creativity, persuasion, resilience and time management. Soft skills do not tend to become obsolete over time, unlike technological competencies.

When certain skills and competencies are taught in curricula and study programmes, the following should be considered: formal education must be adapted to the needs of the labour market; we must focus not only on what we learn but on how we learn it, theoretical learning alone is different from learning within the future company or learning that involves some kind of pre-professional practice; importance should be given to hard competencies and to soft or social skills.

In addition, it is essential to differentiate between education and training. Education refers to values, principles and attitudes. Training involves aptitudes that should be updated periodically (Mayo, 2019).

Students born at the end of the twentieth century and the start of the twenty-first century have new characteristics: they are digital natives and tend to associate vocation with employability.[1]

University education today requires new competencies and abilities in a digital environment that is advancing exponentially and in which AI dictates its rules. However, **although AI has great potential for transformation when it is applied to higher education, its use is still not widespread (Pedró, 2020).**

There is a close correlation between education level and employability. According to the average figures of countries in the Organisation for Economic Co-operation and Development (OECD), in 2019 people without upper secondary education had a 59% employment rate; those with a bachelor's degree had an 84% employment rate, master's degree 88% and doctoral degree 93% (OECD, 2020).

The Industrial Revolution took 70 years to generate wealth for English "society". Electricity took 45 years to enter 25% of households in the USA. The internet took fewer than five years.

Various studies, including those of the Mckinsey Global Institute, the World Economic Forum "The Future of Jobs Report 2018", OECD "The Future of Work" (2019); IESE "El futuro del empleo y las competencias profesionales del futuro" (2019; The future of employment and professional competencies of the future) and the report of the University of Oxford's Future of Humanity Institute, give a figure for the **disappearance of jobs due to AI that ranges between 10 and 70% in the next 10 to 20 years.** The average is 38% of jobs destroyed (López-Segura, 2019).

To this is added the challenge of automation of industrial processes for employees in developed and developing countries. Reshoring is tending to replace offshoring, due to factors such as the pandemic and the increase in cost of container transport. This affects employment in the countries to which production had moved due to lower labour costs and other factors.

The OECD with programmes such as PISA, UNESCO, the World Economic Forum, the World Bank and the Global University Network for Innovation (GUNI), among other institutions, have been leading **the study of knowledge, attitudes, aptitudes and skills that are particularly relevant in higher education** (OECD, 2016; World Economic Forum, 2015; Vilalta, 2019; World Bank, 2019; Vilalta, 2018; Delors, J. et al., 1996; UNESCO, 2018).

The OECD report "Skills for a digital world" (2016) describes three groups of skills that are required: technical and professional skills, ICT generic skills, and soft skills such as leadership, communication and teamwork.

The document lists the changes in skills policies that are a priority to promote growth: (1) ensure that basic ICT skills are gained in initial education; (2) better anticipate needs and competencies in education and guide students to better learning outcomes; (3) ensure that the qualifications required for the digital economy are used by both business owners and employees, and both groups must be ready and motivated to retrain and gain new knowledge and qualifications periodically.

Upskilling, which entails training to optimize the achievement and evolution of the competencies required in a job profile, and reskilling, which involves gaining hard technical competencies to move from one job to another, have been strengthened by the pandemic. During this period, continuous training has been seen as vital to face the digital transformation, changes in the job market and unexpected crises such as the pandemic. According to the World Economic Forum, upskilling has the potential to create 5.3 million new jobs globally (Villena, 2021).

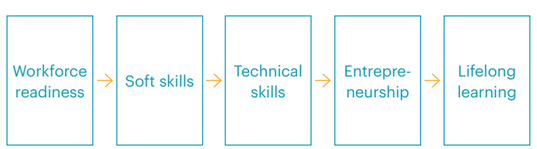
1. At the level of organizations such as the OECD and at country level, indexes of qualifications are drawn up according to employability and are updated annually. For example, in Spain in 2021 the following had low employability: geography, history, political sciences and journalism. Average: nursing, physiotherapy and pharmacy. High: computer engineering, telecommunications and industrial engineering (Rodríguez, 2021).

Skills can be classified in various ways, from the 15 skills established for 2025 by the World Economic Forum (2020) (Table 1) to Deloitte's (2018) approach to the categorisation of skills (Vargas-Lamas et al., 2021b).

Table 1. Fifteen skills for 2025

1	Analytical thinking and innovation
2	Active learning and learning strategies
3	Complex problem-solving
4	Critical thinking and analysis
5	Creativity, originality and initiative
6	Leadership and social influence
7	Technology use, monitoring and control
8	Technology design and programming
9	Resilience, stress tolerance and flexibility
10	Reasoning, problem-solving and ideation
11	Emotional intelligence
12	Troubleshooting and user experience
13	Service orientation
14	Systems analysis and evaluation
15	Persuasion and negotiation

Source: The Future of Jobs 2020 (WEF, 2020)



Source: compiled by authors, based on Deloitte (2018)

Full awareness of the fact that professional knowledge should be complemented by specific competencies and skills did not develop until the twenty-first century, and specifically until the acceleration caused by the Fourth Industrial Revolution. However, in the 1970s, McClelland demonstrated that traditional intelligence tests with excellent results did not guarantee success in the work environment. Certain competencies and skills were needed that do not tend to be measured by intelligence tests (McClelland, 1973).

Research on students' learning outcomes indicates that university graduates do not have important skills that are required by employees. These include communication, decision-making, problem-solving, leadership, emotional intelligence, social ethics, and the capacity to work with people of different origins. Many recently graduated professionals work in multicultural, multinational environments and therefore must have the right professional competencies and specific skills, such as a command of languages.

The table below clearly shows the nuances between skills and competencies. **Professional competencies refer to our knowledge of specific disciplines such as medicine and engineering, but we also need special skills and additional competencies, as shown in the table.**

Table 2 Skills and competencies

	Definiton	Examples
Skills	Specific learned abilities that you will require to perform a given job successfully	Handling accounts; coding; welding; writing tenders; computer programming; foreign language proficiency
Competencies	Knowledge and behaviours that lead you to be successful in a job	Analytical ability; problem solving; initiative; negotiation; improving business processes; strategic planning; data-based decisions.

Skill is defined as the knowledge and experience required to carry out a specific task. In contrast, *competency* is the capacity to apply knowledge, "know-how" and skills to a situation that could be habitual or changing.

Competencies are much broader than skills. *Skills* are specific to a task, while competencies incorporate a set of specific skills and professional knowledge. Academic skills are comprised of basic skills such as academic writing, presentation and reference skills, and more complex skills such as critical thought and reflective practice.

A skill is the capacity to do something, while competencies are behaviours that specify how the individual carries out the skills that they have. For example, 20 people could be skilled in computer programming, but perhaps only two will work in accordance with the company culture, which prioritises teamwork.

Competencies in higher education cover cognitive (know how to learn), executive (know how to do), and axiological (know how to be) aspects.

Job competencies are a set of specific knowledge of the disciplines, skills and attitudes that are required to enter the job market easily. **They could be general,** for example marketing, communication and computer science, **or specific**, such as electoral marketing, communicator specialised in telecommunications and computer scientist specialised in cybersecurity.

As mentioned previously, **they could also be hard skills,** which are the techniques of a discipline (for example, the use of spreadsheets for accounting) and **soft skills,** which are more general and personal (leadership, verbal communication). These skills and many others determine a graduate's employment opportunities.

Competency-based or skill-based education is a new direction imposed by technological disruption, the dramatic rate at which the labour market is changing in the knowledge society and even more in the Fourth Industrial Revolution. Consequently, universities must have closer ties with the world of work.

The technological changes imposed by automation and AI require the transformation of universities to provide students with professional knowledge and general competencies that enable them to join the job market easily.

A general review of the literature on necessary skills and competencies revealed that studies do not tend to specify which are the most important to get a job, regardless of our professional knowledge and competencies. It was also observed that in assessment and qualification processes in Ibero-American universities, curricula do not always have to include an accurate description of the competencies that graduates should have gained by the end of their courses, in addition to the professional knowledge obtained in the degree or postgraduate programme. Double degrees, and even professional training, are an attempt to resolve this shortcoming.

The development of general competencies in higher education curricula addresses many unresolved issues on the need to include these competencies in a precise way. In 2019, the EU had a shortfall of one million workers in new jobs associated with AI and automation.

In job interviews, recruiters tend to look for general skills such as: communication, empathy, forward planning, decision-making capacity, leadership, critical thinking, flexibility, digital competency, capacity to work remotely, result orientation, capacity to work in a team, productivity, reliability, commitment, responsibility, commercial skills, multidisciplinary skills, professional development and technical skills.

To ensure that students internalise these skills in the teaching-learning process, the following actions are required. 1. Create scenarios in which the use of certain skills is put into practice, so that students can see how important it is to gain a command of them and know how to apply them. Visualise learning and the use of technology as an inseparable, integrated pairing. Teach in an interdisciplinary way. Develop teamwork as a style and as a process that offers better results. 2. Ensure that students feel comfortable in various national settings and multicultural environments. 3. Ensure that, in simulated exercises, students play different roles in the area of private companies (manager, human resources manager, graphic designer) and public institutions (foreign minister, ambassador, consul, dean of a faculty) as this prepares them for working in collaboration. 4. Ensure that, in the learning process, students learn to integrate the education sector with the production sector and with social goals and sustainable development goals. 5. Learn to digitally process large amounts of information and convert them into relevant knowledge.

From 30 to 50% of companies carry out "competency interviews" as part of the process of recruiting new employees. One question at the start of an interview tends to be: "Describe two situations in which you have had to work as part of a team." In general, the candidate is asked: 1. What are the main strengths of this company over its competitors in the industry. 2. What personally attracts you to the firm (close relation with the candidate's university studies, the place where it is located). 3. Other relevant factors that seem interesting (style of working, corporate social responsibility that the company participates in).

Professional competencies and skills should not be limited to ensuring employability and productivity. **Students should be trained not only in aspects required by companies and the market, but also and above all in what society needs, to enhance fairness and sustainable development.**

5. Case studies: Good practices

In various universities worldwide, good practices are developed in the teaching-learning process to train students in the skills and competencies that enable them to join the job market easily.

Below we describe good practices in two Latin American public universities and in one private one, the Pontifical Xavierian University Cali, and in a network associated with UNESCO

5.1 Good practice in trainer training, University of Chile (Ramis and Peña, 2019)

Trainer training is a subject of increasing interest for those who design public policies in education and for higher education institutions that are responsible for teacher training. This interest is relatively recent in Europe and in Latin America. On the old continent, it arises from the indirect effect of school system reforms in the European area on initial and continuous training of teachers. In Latin America, along with a similar situation to the above, this interest may be influenced by the fact that universities in the region have tended to take over teacher training from the former schools since the 1970s.

Until recent years, *the study of the professional profile of trainers in continuous training* had not managed to attract all the research attention that it deserves. This is because studies carried out to date consider it to be a secondary rather than a main objective. A second reason is the *difficulty in defining this professional in terms of tasks, competencies and specific skills,* as in the context of continuous education and the labour market this professional profile is subject to constant changes.

5.2 Good practice of the University of Santiago, Chile.[2]

Skills and competencies should be developed from an innovative perspective in higher education institutions, as is happening in the education system in general. The development of competencies and skills should not be considered in isolation, but as an integrated whole designed to be developed to solve a problem or carry out a task. In this context, the Vice-Presidency for Postgraduate Studies at the University of Santiago, Chile (USACH), has worked hard to promote a student newsletter that strengthens competencies such as leadership, communication, critical thinking, teamwork and time management.

This newsletter started out with the fundamental premise of extensive participation of students and graduates from the university's faculties, school, institutes and specialisations. With the guidance of a professional, the students determined the processes, work committees, deadlines and expected products. These were decided on by various work committees.

This experience has been developed since May 2021. A first stage was determined called "establishment of the proposal". Although the proposal had some aspects that were already defined, the students then modified them to create broad spaces for the definition of activities, under the premise of constructing the proposal as a group.

A second stage was established with the definition of the proposal's objectives as: "To disseminate contents of value on activities carried out by the postgraduate community of the University of Santiago, Chile". This stage evolved through the work of self-defined committees. The committees are dissemination, content generation, editing, and design and production.

2. For information on this good practice, contact: consultas.postgrado@usach.cl

The conditions of the health, economic and social crisis meant that this proposal is only disseminated through a website and social networks. Consequently, a website was set up first, and all members of the team could access training on how to use it during this period.

Content generation has been marked by the students' initiative on topics of interest to them, with profound social connotations.

Topics have been influenced by the social outburst in in Chile in October 2020 and the pandemic situation. This has led to questioning of the system of beliefs and dominant paradigms. In addition, a call was held that received articles from around 40 students, academics and graduates.

Work on editing has been carried out by revising the articles, and the design process was planned for the month of October.

In November 2021, the first newsletter was published. Its characteristics are broad participation, strengthening the skills and competencies required to train students of this century in knowledge areas, and respecting the time required for a truly collaborative project.

5.3 Good practice of the Institute for Intercultural Studies, Pontifical Xavierian University Cali(3)

The *Institute for Intercultural Studies* of the Pontifical Xavierian University Cali, Colombia, offers a *master's degree in Interculturality, Development and Territorial* Peace. It is designed to train social leaders who will help to positively transform intercultural territories that have been profoundly hit by violence in Colombia. The aim is to foster students' skills and competencies, to facilitate their entry into a specific job market. This experience brings together students who are part of the communities and associated with community-based organisations: Cabildos Indígenas or Consejos Comunitarios (collective territories of rural communities). In the master's degree, students develop proposals that are relevant in various social and economic sectors. The students' local studies are linked to government development plans, to generate synergies that enhance the action of each student locally and regionally. Communities tend to say that they send their young people to study at universities with the expectation that when they return they can improve their territories. However, students return with knowledge that does not help the community and does not cover its main issues. When these young people try to fit in outside their territories they find it hard to enter the labour market because they are women and men who do not make an impression or think like others from outside their area. *This master's degree solves the problem of the employability of young rural people outside their territory. It returns them to their communities with competencies to face relevant problems,* with a vision not of employees but of managers of resources and projects, promoters of public policies, formulators of proposals that have an impact and valid government representatives who are really intercultural as they can move within and outside their territories with moral integrity and the capacity to jointly construct the future.

5.4 The SUMMA laboratory of education research(4)

SUMMA is the first Laboratory for Research and Innovation in Education for Latin America and the Caribbean. It was created in 2016 by the Inter-American Development Bank (BID) with the support of the education ministries of Brazil, Chile, Colombia, Ecuador, México, Peru and Uruguay. In 2018, the ministries of Guatemala, Honduras and Panama also joined.

The mission of SUMMA, the Laboratory of Educational Innovations, is to guarantee the right to education and reduce educational inequalities, with a teaching and learning process that offers specific competencies and skills. This is achieved through: (a) the generation of rigorous comparative research; (b) the identification, experimentation and adaptation of effective educational innovation; and (c) dissemination and collaborative work in a network with education ministries, research centres and civil society in Latin America and the Caribbean. The model of work generates:

- Comparative, rigorous knowledge and evidence that identifies and addresses the main educational gaps in the region.
- Effective, adapted, high-impact innovations that can be scaled up in partnership and coordination with educational agents in the region.
- Networks of collaboration and dissemination of knowledge and innovations.

3. Institute for Intercultural Studies of the Pontifical Xavierian University Cali, Colombia: https://www2.javerianacali.edu.co/tema-6#gsc.tab=0
4. SUMMA Y UNESCO work together to eliminate gender inequalities in access to education: www.summaedu.org

6. Conclusions

The dramatic pace of the Fourth Industrial Revolution was further accelerated by Covid-19. **Considering foreseeable changes and those that are already underway, this has made it necessary to adopt visions and strategies to transform higher education** in a context of increasing inequality, where environmental sustainability is threatened, and with a **labour market that requires up-to-date professional knowledge and a wide range of skills and competencies to ensure employability** (López Segrera, 2019).

If universities want to achieve their missions in this new situation, they must meet the exacting demands of society and its citizens, and not just those of companies and the state.

We cannot yet forecast in depth how higher education will evolve in the various regions and countries of the world. However, we can state that universities will continue to play a relevant role in the construction of the best future possible. We should be at the forefront of technological and disciplinary knowledge and, above all, of ethical values.

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2.3 Research and Innovation. Towards open, ethical and responsible research and innovation

Of “Lighthouses”, “Living Labs” and the “Wisdom of the Crowd” - Social responsibility beyond research and teaching (an NGO perspective)

Norbert Steinhaus

Abstract

There is a broad consensus that research and innovation (R&I) must be steered towards socially desirable ends, ensuring that science and technology are the driving forces behind social progress. This puts the current R&I system under increasing pressure to become more inclusive and responsive to current and future societal challenges. Although the critical issues of Responsible Research and Innovation (RRI) have been gaining academic awareness and political support as tools to move European R&I governance forward, there is broad recognition that the engagement of civil society organisations and citizens has been suboptimal in defining R&I priorities. Here it needs to rethink the role of higher education institutions and their contributions to society in a context of rapid transformations and world crises. Citizens all around Europe are already showing increasing interest in participatory activities: their engagement in social movements and voluntary associations as well as science-related activities such as Citizen Science are clear signs of their willingness to be active players in the field. This paper introduces and reflects on the different concepts of co-production of knowledge, knowledge exchange and knowledge mobilisation, such as Community Based Research, Citizen Science or Science Shops.

Keywords

Research & Innovation, RRI, community engagement, stakeholder consultation, Science Shop, CBR, European Commission, Horizon 2020, community of practice, barriers, constraints, research needs, collaboration, structural change, public engagement, higher education.

Introduction

It is the well-known story of the ivory tower. Scientists have locked themselves in, high above the rest of the population. Nearly unreachable and isolated. But even when they leave their ivory tower, they remain misunderstood and disconnected from the rest of the population. Civil society does not see their problems taken seriously. A lack of transparency, poor communication and a lack of skills or opportunities for cross-cutting cooperation ultimately lead to the population’s denial of scientific facts.

But isn’t the spherical-supernatural incomprehensibility of science a cliché? Scientific research is, of course, not necessarily compatible with the everyday consciousness of most people anywhere. But neither is the job of a logistics manager at a large department store chain or the investment planning of a savings bank. So, where does the special feature of science come from? From its fundamental function for the community (Ossing, 2018).

Democratising Knowledge

If we want to promote not only excellent but also socially desirable science and technology, it is vital to align the objectives of research and innovation with the needs and values of the societies that support them. This means to involve the whole of society in decisions about the development of science and technology.

James Bovard (2016) once said “Democracy must be something more than two wolves and a sheep voting on what to have for dinner”. This is a nice picture when thinking of the stakeholder groups to work with in engagement activities: Research, Industry and Civil Society/ Communities.

By following the Oxford Dictionary’s definition of knowledge as “Facts, information, and skills acquired through experience or education” (Lexico, 2021), we cannot leave the sole focus on the academic as an ‘expert producer of knowledge’ –as those who pass their knowledge downstream to various communities who absorb it and put it to practical use.

Not all knowledge can be found on Google Scholar. Grey literature, clearly devalued in the scientific, at least university context, contains knowledge that sometimes never makes it into major publications. From newspapers to podcasts, Instagram, meetings and demos - knowledge can be found everywhere (FSR Admin, 2021).

As a consequence, we can move to a much stronger focus on ‘collaborative knowledge processes’, which actively involves diverse knowledge systems, including:

- Individual local knowledge, drawing on the experiences of an individual in a place.
- Collective cultural knowledge, for example, the indigenous peoples’ understanding of natural resource management approaches.
- Political knowledge, encompassing a broad concept of those in positions of power who are able to influence decision-making processes.
- Scientific or expert knowledge, peer-reviewed knowledge produced through scientific research.

Consequently, we cannot have a ‘western’, ‘European’, or ‘global north’-centric vision of science and knowledge. Involving diverse knowledge sources in knowledge production process is challenging; however, each source can contribute something to a problem, making the whole much greater than the sum of the parts.

Thus, co-creation of knowledge and creating value from knowledge not only relates to and facilitates building communities or developing literacies but also eliminates barriers and grants access to information to spread new ideas. All stakeholders seeing each other eye to eye. Wolves and sheep.

Responsible Research and Innovation

Decisions in research and innovation in a European context must consider the principles on which the European Union is founded, i.e., respect for human dignity, freedom, democracy, equality, the rule of law and respect for human rights, including the rights of minorities. This was embedded in the Lund Declaration (Swedish Presidency to the EU, 2009) and has served as a clear inspiration for Horizon 2020.

Responsible Research and Innovation (RRI) was and still is an attempt to achieve conceptual and practical ways to transform the R&I system in this direction. **RRI requires that all stakeholders, including civil society, are responsive to each other and take shared responsibility for the processes and outcomes of research and innovation.** This means working together in science education, the definition of research agendas, the conduct of research, access to research results and the application of new knowledge in society, fully respecting the ethical and gender dimension (Italian Presidency of the Council of the EU, 2014).

Although the concept of RRI and its key issues have been gaining academic awareness and political support as efficient tools to move forward in addressing the challenges for European R&I governance, as can be seen from various sources. RRI practices are not yet consolidated across Europe’s R&I sector (La Caixa Foundation, 2017; MoRRI consortium, 2018).

Open Science

In 2014, the European Commissioner for Research, Science and Innovation took the wind out of the sails of the RRI concept and introduced Open Science as a new approach to the scientific process - based on cooperative work and new ways of disseminating knowledge through digital technologies and new collaborative tools. The idea captures a systemic change to the way science and research have been carried out for the last fifty years; shifting from the standard practises of publishing research results in scientific publications towards sharing and using all available knowledge at an earlier stage in the research process (European Commission [EC], 2016). However, Citizen Science as a concept and

term is increasingly seen as an integral part of both RRI and Open Science.

A Vision of the Future

The year is 2030. Open Science has become a reality and is offering a whole range of new, unlimited opportunities for research and discovery worldwide. Scientists, citizens, publishers, research institutions, public and private research funders, students and education professionals, as well as companies from around the globe, are sharing an open, virtual environment... (EC, 2016).

All in all, it is about creating value from knowledge, and we have a variety of strategies for participatory ways of knowledge creation, which have emerged in the last 50 years based on specific research contexts and experiences.

From education to engagement - A variety of strategies

Practical project experience and theoretical work have increased opportunities for citizen (or public) engagement, especially in the last two decades. This was done through active involvement in scientific practice (Research and Agenda Setting), discussions about scientific findings and their impact on policy and society (Policy & Social Dialogue) and a better understanding of the scientific process (Education).

In the following paragraphs, different approaches will be described which have stepped into the spotlight of public and policymakers' interest in recent debates on Science and Society relations.

Project-based learning (PBL)

The PBL format is a student-centred pedagogy in which students learn about a subject through the experience of solving an open-ended problem. Students learn both thinking strategies and domain knowledge. The goals of PBL are to help students develop flexible knowledge, effective problem-solving skills, self-directed learning, effective collaboration skills and intrinsic motivation (Edutopia, 2021).

Service-Learning

As an educational approach to balance formal instruction and direction with the opportunity to serve in the community, Service-Learning provides a pragmatic, progressive learning experience. Service-learning offers pupils and students immediate opportunities to apply classroom learning to support or enhance the work of local agencies that often exist to effect positive change in the community (Knapp et al., 2010).

Both methodologies have their advantages and limitations, having in common that their initial problem setting, or service offer is driven by the educational institute. Nevertheless, they offer opportunities – depending on the level of engagement of the teaching staff and the frame of the respective curricula – to answer requests expressed by civil society organisations or problems they might have addressed.

Public Engagement with Research

Public engagement describes the many ways in which the activities and benefits of higher education and research are shared with and informed by the public. There are already many ongoing inspiring public engagement activities involving universities, research institutes, NGOs and Civil Society Organisations. Much of this work is still under the radar and vulnerable to shifts in funding.

To capture the wisdom of the crowd is at the core of public engagement, the collective knowledge of a group of individuals rather than that of a single expert. In this context, online communities have become an important source of knowledge and new ideas. However, the potential of crowdsourcing as a tool for data analysis to address the increasing problems faced by organisations and institutions in trying to deal with "Big Data" is still not fully explored (García Martinez & Walton, 2014).

Co-creating competence:
Citizen knowledge matters!

The TeRRIFICA project applies so-called crowd-mapping: stakeholders participate in the identification of regional needs and priorities by putting a mark on a digital map. By doing so, they support the visualization of robust social information on climate change in local environments. It links Science Shops and Citizen Science.(See Figure 1 and www.terrifica.eu)

Science Shops

Figure 1. TeRRIFICA crowd mapping in Minsk

The most common definition of Science Shops describes them as entities that provide *"independent, participatory research support in response to concerns experienced by civil society"* (Leydesdorff & Ward, 2005; Living Knowledge, n.d.). This support often takes the form of collaborative research and/or innovation projects to respond to civil society (mostly Civil Society Organisations, CSOs) needs (Mulder et al., 2006). Science Shops first emerged in the seventies and are perceived as an organic way of involving society in research, because they generally follow a bottom-up approach and support research between CSOs, academic research groups and students.

Science Shops around the world have several operational models, but they have a deeply rooted society-driven and bottom-up approach in their DNA and the commitment to direct community involvement into their processes (Steinhaus, 2014).

In their original framework, Science Shops would either receive questions directly from CSOs or gather questions through public engagement activities. However, there are many other channels, and all other stakeholders may be able to express concerns experienced by civil society. For instance, the Education Community can identify concerns through community service learning, Business and Industry often identify social concerns through their Corporate Social Responsibility activities, the Research Community can engage in needs assessment to identify concerns that have not been expressed previously, and so on. Moreover, Science Shops themselves are often active in identifying societal concerns and then engaging with stakeholders to shape the Science Shop processes (Urias et al., 2020).

By bridging different scientific and social knowledge components, Science Shops can significantly improve the effectiveness, quality, acceptance, impact and sustainability of solutions for complex societal problems. Building on approaches of mutual learning that bridge roles and positions of multiple stakeholders is a promising entry point to goal-oriented participation. Science Shops are seen to provide an inclusive and safe space for participatory dialogue, citizen science and co-creation with a variety of actors.

Community-based participatory research (CBPR)

Community-based participatory research can be defined as a partnership approach to research that equitably involves community members, organisational representatives, and academic researchers in all research process aspects. It enables all partners to contribute their expertise, with shared responsibility and ownership; it enhances the understanding of a given phenomenon and integrates the knowledge gained with action to improve the health and well-being of community members, such as through interventions and policy change (Israel, et al., 1998, as cited in Detroit URC, 2021).

The strengths or advantages of CBPR are that it allows for the innovative adaptation of existing resources and explores local knowledge and perceptions. It

empowers people by considering them agents who can investigate their own situations. Community input makes the project credible, while the approach as such provides a forum that can bridge cultural differences among participants and helps dismantle the lack of trust in research shown by some communities.

Citizen Science

Citizen Science can be understood as scientific research conducted, in whole or in part, by amateur or nonprofessional scientists. The core issue of citizen science is the participation of non-regular scientists in knowledge generation. The methodology is also known as crowd science, civic science, community science, volunteer monitoring, participatory monitoring or participatory action research (Engage2020 Consortium, 2014).

As there is no universally accepted definition of Citizen Science, special attention has to be given if the term is used to describe either a method (allowing traditional scientific research practices to reach larger scales) or a movement (that democratises the scientific research process by for example restoring public trust in science, re-orienting science toward societal challenges, and installing democratic governance of science), or a social capacity (as a knowledge-producing capacity of society and a path to evidence-based decision-making).

A suitable approach is to categorise Citizen Science according to its openness, along the prototypical steps of a scientific process from formulating research questions to the actual conduct of research and the subsequent analysis based on the research. Who is actually designing the study? Who is collecting the samples? Who is analysing them? And who interprets the data?" These questions represent the steps of a classical scientific process.

Depending on the responsibilities for these steps, the models are classified with an increasing degree of participation by the community in the research process. The 'community consulting model' follows the basic idea of 'Science Shops'. Under this model, the community defines a problem and research task, while the research itself is conducted by professional scientists. The "community workers model" encompasses various collaborative settings, from public data-collection, through to a collaborative analysis. The 'community-based participatory research model' describes projects where all tasks are conducted by the community, equivalent to participatory action research approaches (Schrögel & Kolleck, 2019).

The strength of the method lies in the rapid collection of large amounts of data, observations and/or ideas for problem-solving. Besides this "functional" benefit for research, citizen science can help strengthen ties between science and society and raise awareness about scientific work in the wider public. The direct involvement of citizens in research, which can help make people learn about what research implies in terms of methods, skills and reasoning, is another strength of the method.

It can be criticised that the method does not usually imply the influence of laypeople on project design and is not per se tailored towards engaging people in problem definitions and setting research objectives. However, it might be possible to include these as well in the case of research done on socially defined problems.

The White Paper on Citizen Science, therefore, demands an educational plan on key aspects of Citizen Science that encompasses all phases of the life-long learning process, from early childhood to continuing adult education, which should also provide educational strategies for Citizen Science actors and address, among others, scientific procedures, technical issues, community management, sociological aspects of learning methodologies, as well as specific training on Citizen Science methodologies (Serrano Sanz et al., 2015).

The politically important question to answer is how does citizen science actually strengthen ties between science and society? To do so, it would have to reach out to less educated and more sceptical circles. To all appearances, it has hardly succeeded in doing this so far. Although there is only scattered information on the sociodemographic characteristics of the researching citizenry, everything indicates that up to now, older people with a higher level of education have formed the majority. Meanwhile, citizen science projects for school classes are striving to connect with the younger generation. A far more difficult task for science and education policy will be to reach other target groups outside the established middle-class educational milieu (Krischke, 2021).

Lighthouses and Living Labs

The perception of social responsibility is a process and does not function 'top-down'. It must be understood as a dialogue process, which should ultimately serve to repeatedly compare one's own approaches with university-internal and external actors and adapt them to needs as necessary. To improve this, it needs guidance and support – lighthouses or beacons as devices designed to overcome challenges, show a way forward or simply attract attention to a specific location or activity.

At the Forefront of Cultural Change

In 2008 the Beacons for Public Engagement initiative was launched in the UK. Its aim was to inspire a culture change in how universities engage with the public. Six Beacon partnerships and a National Co-ordinating Centre for Public Engagement (NCCPE) were funded by the Higher Education Funding Councils, Research Councils UK and the Wellcome Trust. Their partners included further education colleges, museums, galleries, businesses, charities, TV and press, and public bodies. The six Beacons were university-based collaborative centres that were set up with a lifespan of four years to support, recognise, reward and build capacity for public engagement. The NCCPE is still highly active (NCCPE, 2020).

Living Labs

Living Labs are defined as user-centred, open innovation ecosystems based on a systematic user co-creation approach, integrating research and innovation processes in real-life communities and settings. Living Labs are both practice-driven organisations that facilitate and foster open, collaborative innovation, as well as real-life environments or arenas where both open innovation and user innovation processes can be studied and subject to experiments and where new solutions are developed. Living Labs operate as intermediaries between citizens, research organisations, companies, cities and regions for joint value co-creation, rapid prototyping or validation to scale up innovation and businesses. They involve user communities, not only as observed subjects but also as a source of knowledge, creating value by contributing to the co-creation and exploration of emerging ideas, breakthrough scenarios, innovative concepts. They have common elements but multiple different implementations (European Network of Living Labs [ENoLL], 2021).

So what? What do we need in the future?

In all our activities, starting either from the academic context or from a non-academic environment, we must learn from models that already worked with an interactive, joint-learning and co-creative approach. We must look out for "lighthouses" as seeds for replication. By establishing networks of "lighthouses" or "living labs" for different Sustainable Development Goals, national research strategies or local needs, we can develop positive environments and encompass multidisciplinary research to bring together citizens and heterogeneous stakeholders to co-create solutions, share knowledge and develop skills.

Figure 2. The Wisdom of the Crowd: Diversity and Independence of Opinion

Living Labs are defined as user-centred, open innovation ecosystems based on a systematic user co-creation approach, integrating research and innovation processes in real-life communities and settings. Living Labs are both practice-driven organisations that facilitate

and foster open, collaborative innovation, as well as real-life environments or arenas where both open innovation and user innovation processes can be studied

A CBPR, Science Shop or Citizen Science project can help empower groups and actors that have been marginalised or excluded from the decision-making process by giving a voice to their perspectives and knowledge. Through these projects, communities become aware of the benefits of research, increasing their trust in research and interest in participating in the research process.

In order to further develop the understanding of science-society relations and the exchange of knowledge, it is important to involve both students (what do they expect from their socially responsible university?) and non-university institutions (what R&D needs do they have, what topics or problems are on their agenda?) and not to determine internally first and then go public with service offers. **There are suitable participatory formats with which all actors, both university -internal and external, can be involved in the development of scenarios and their implementation.** Citizen engagement should be inspired and facilitated in a bottom-up manner and not organised top-down. It is crucial to let it gradually grow as a true and robust civil society movement to secure a sustainable future by itself, for itself and future generations.

For this, we need events, projects and mediators to offer time and space for people to connect and develop trust and relationships. And we need NGOs and CSOs (or from the NGO perspective universities and researchers) that dare to establish new collaborations and approaches.

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The Emergence of the Global University

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Abstract

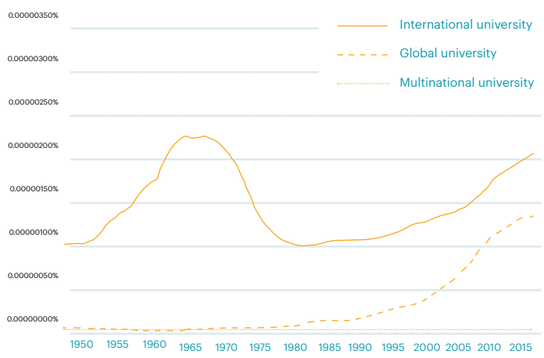
This paper explains the constituents of the Global University, what differentiates it from its predecessor, the reasons for its emergence and why it is likely that global universities will acquire competitive advantages in the future. The global university represents a sharp departure from the conventional Humboldt university model in that the source of value is not dictated by traditional academic disciplines or "knowledge for its own sake", but rather, as has been the case for the entrepreneurial university run by a broad range of external stakeholders. However, these stakeholders have an increasingly global perspective, in which students, faculty, research and societal impact are not geographically bounded by city, regional or national borders.

Commodified education, research and societal impact will rarely be able to compete in the globalised market for higher education services/products. Instead, the competitive advantage for the Global University emerges in services and products that resist commodification, in that they are firstly based on authentic relationships. This paper provides relevant examples of best practices for globalising teaching, research and social impact. The paper concludes that the successful Global Universities of tomorrow will prioritise authentic relationships to provide unique and compelling value to global stakeholders.

Introduction: Defining the Global University and its Mission

In the past decade, there has been a trend to label universities acting beyond their national borders as 'global universities'. Since the fall of the Soviet Union, large swaths of the world have become truly global for the first time – global, in the sense that these interactions and markets have become globally connected and interrelated. Since their emergence in the 11th century, universities have been part of the internationalisation and globalisation of the world. While internationalisation has become a major strategic focus of universities in recent decades, particularly in Anglo-Saxon countries, global universities have become a pervasive phenomenon in recent years, see the attention from media, academia and policymakers around the globe (Figure 1). Although the term 'international university' has been popular since the 1960s, the term 'global university' has entered media nomenclature mainly in the new millennium.

Figure 1: Mentions of Key University Descriptors in Mass Media



Source: Author's own depiction of self-collected data, using Google Books N-gram Viewer (July 2021)

There has been extensive debate In higher education literature attempting to delineate the scope of the term 'global university', in contrast to other previously mentioned identifiers such as 'international' and 'multinational'. Some scholars have tied the definition to notions of citizenship, arguing that universities that belong within a particular nation, as technically determined by their charter, cannot claim to be global universities since they do not officially represent the entire world (Ayoubi, 2019). This reasoning then argues that a vast majority of universities are either multinational, international or national universities, depending on their locational classification in their charters as well as their student, staff and curricular composition (Ayoubi, 2019). Others take a much broader view, claiming that a global university is an institution that operates within a globalised marketplace for students, researchers and knowledge through many of the modern strategies and operations of university internationalisation (Wildavsky, 2012). Following in this vein, McGillivray et al. provided a nuanced definition at the Global University Symposium in 2010:

> "A global university pays attention to the trends in economics, science, technology and the movement of goods and people and capital across transnational borders. The institutions that take steps to capture those opportunities are, in my view, global institutions (McGillivray et al., 2010)."

This paper incorporates and builds upon these findings, aiming to explore the inner workings and motivations of the global university as a model for university mission achievement (de Wit, 2015). The aforementioned positions of Wildavsky (2012) and McGillivray et al. (2010), the theoretical works of de Wit (2000; 2002), Knight (2004) and Altbach and Knight (2007) establishing the origins and motivations of international higher education to improve university performance and the interpretation of entrepreneurial university studies summarised in Otto et al. (2021), all contribute to this work's understanding of the emergence of the modern global university. The present study moves beyond the rise of the global university to also determine what the global university manifests and how it displays it, thus accounting for the aforementioned curricular, student, staff and citizenship stances of Ayoubi (2019) and Beelen and Jones (2015), as well as Hudzik's theoretical work connecting internationalisation to all university functions (2011; 2015) and also the best practices for sustainable university international partnerships established by Sandström and Weimer (2016) and Hoseth and Thampapillai (2018).

This study contributes to existing literature by positing that the rise of the global university as a functional model is higher education's response to broader globalisation trends. This work also fills a research gap by asserting that the global university creates and distributes value to its stakeholders through relationship-based partnerships that facilitate enhanced achievement of the university missions of teaching, research and service to society. **Here it is argued that within the competitive global landscape of higher education, universities must assume the identity of 'global universities' to rise above the zero-sum notion of competition. They must cultivate meaningful, relational partnerships internationally to improve service delivery to their stakeholders, thereby becoming more attractive and competitive through cooperation in the worldwide contest for the best students, researchers, funding and other resources.** These relational partnerships provide the foundation that universities need to pursue the vast array of teaching, research and service performance opportunities that are enhanced through international collaboration (Altbach & Knight, 2007; Otto et al., 2021). Within this framework, the successful implementation of a global university ethos is vital for a university to be internationally relevant amongst peers – a prerequisite in the modern higher education ecosystem. Therefore, global universities connect with other global universities to create value for their stakeholders, something they cannot create alone.

With an understanding of the global university explicated, this work continues by detailing its evolution, how it creates and distributes value and how this is measured and assessed-Concluding with a summary of key findings.

The Evolution of the Global University: from Human Capital and the Humboldtian model to Internationalisation and Division of Labour, to the Emergence of the Global University

For simplicity, three stages in the evolution of universities can be identified. Firstly, the human capital and labour mobility stage, where the focus of universities was on offering a focal point for students and academics. The second stage is characterised by the division of labour among universities in an international context, exchanging students and scholars. In the third stage, universities truly cooperate in the global context. See Figure 2 for a graphic depiction of this progression.

Figure 2: Stages of the Geographical Evolution of Universities

Source: Author's own depiction, based on the work of Detweiler (2021), de Wit (2002), Lehmann et al. (2020), Otto (2021) and Otto et al. (2021)

However, in defining their relevant stakeholders, universities have diversified in the last century, particularly Anglo-Saxon universities compared to continental European. The latter are mostly still in the tradition of the Humboldtian university system, where science is undertaken for its own sake and, if there are stakeholders at all, the major stakeholder is society as a whole – since universities are mostly publicly financed. Anglo-Saxon countries have diverged from the Humboldtian model, particularly after WW2, shifting towards the demands of industry and customers within the university business model approach – the students (Otto et al., 2021). Of particular note are the emergence of business schools in Anglo-Saxon Countries in the early 20th century and the shift from public to private finance via tuition fees. Following a 'business model approach' to maximise revenues, these universities increased their efforts to attract students from abroad to increase revenues from fees (see Table 1) to help with government funding shortfalls. This has drastically shaped the geographical expansion of universities worldwide. A third player has entered the landscape in the last few decades; Asian universities, Chinese in particular, have also started to expand beyond their national borders.

Table 1: International Students Enrolled in Post-Secondary Institutions by Destination Country: 2000, 2010 and 2017.

Year	2000	2010	2017
Panel A. Students from China			
Australia	5,008	87,588	128,498
Canada	4,701	26,298	66,161
United Kingdom	6,158	55,496	96,543
United States	50,281	126,498	321,625
Panel B. Students from India			
Australia	4,578	20,420	51,976
Canada	968	5,868	32,616
United Kingdom	3,962	38,205	16,421
United States	39,084	103,968	142,618
Panel C. Students from South korea			
Australia	2,361	7,311	8,316
Canada	1,116	4,320	5,277
United Kingdom	2,165	4,347	5,157
United States	38,026	71,514	56,186

Source: Bound et al. (2021)

Geographical expansion, the evolution from national to international and global universities, has become a strategic decision of universities and governments, leading to competition for high quality and affluent students beyond the local delimitation. Together with tuition fees, donations and investments made by industry have also become a major source of finance, expecting returns on their investments. Consequently, universities have invested in cross-border internalisation in several ways, such as close cooperation with partnering universities, contractual programs or direct investments with their own subsidies to satisfy the needs of industry and the students. **As globalisation has exploded, the 'war for talent' has become the slogan, resulting in an increased demand for talent from industry and pressure upon universities as filtering institutions and providers of talent.** Thus, one explanation of the global university can be seen in the current and future demands of their main stakeholders or those who they perceive as such.

As every country feels it is a part of the global society and economy, policymakers, university leaders and governmental officials prefer their institutions to be branded as global universities. This branding has thus become part of the university business model strategy, particularly in Anglo-Saxon countries where it can serve as a market signal. This is exemplified by Global University Systems B.V. (GUS), a private limited company registered in the Netherlands, founded in its present form and name in 2013 by Russian-born British entrepreneur Aaron Etingen, who serves as chairman, CEO and majority stockholder. As a corporate group, GUS owns and operates several private for-profit colleges and universities that attract fee-paying international students in the UK, Canada, Israel and Europe, as well as other brands and companies in the education sector. The consequences of these market mechanisms impact global talent development, the resources of colleges and universities, and labour markets in the United States and the countries sending students (Bound et al., 2021).

Despite these commercial aims, there has been a paradigm shift in Anglo-Saxon and European universities towards value-driven concepts - particularly of public and societal value. An interest in social value is growing, and universities are confronted with questions about what value they add, as the public expects them to help with recent and future problems they face. Stakeholders not only expect universities to work efficiently but also to contribute to solutions for society.

To deliver public and societal value, universities need to be focused on outcomes, precisely defining their contributions and measuring their results in terms of public and social value. Contributions to society are determined by how universities work on global issues connected to climate change, migration, inequality, natural disasters, pandemics, etc. Providing social and public value requires a global division of labour in scientific research and knowledge production, evidenced by universities acting in a global scientific ecosystem to help develop a vaccine against Covid-19.

Thus, the emergence of the global university goes far beyond the GUS as a profit-maximising organisation with worldwide subsidies. As seen in this paper, the global university constitutes a logical evolution of universities as the primary source of a global knowledge production function, generating knowledge spillovers to solve global problems. Even when recent developments such as Brexit, populist nationalism and the Covid-19 pandemic have pushed the education towards de-globalisation (Otto, 2021), the globalised university tends to dominate the higher education landscape more than ever. With the global contagion and resulting social and economic problems, crisis-management has also had to become global. **Modern, worldwide challenges require global cooperation instead of fragmented national responses. Therein lies the call for the global university.**

How Global Universities Leverage Relational Partnerships to Create & Distribute Value

As the key driver of a global university's international value creation, partnerships with outside institutions, such as other universities, governments, NGOs, etc., serve as the platform for designing and implementing the programmatic portion of internationalisation (Hoseth & Thampapillai, 2018; Otto, 2021; Otto et al., 2021; Sandström & Weimer, 2016). These partnerships foster positive performance outcomes, including language learning, student and staff mobility, international experiential learning, multinational research consortiums, curricular development, etc.; thus allowing each partner to uniquely expand and improve upon its missions of teaching, research and service to society by

implementing the programs that these bilateral and multilateral partnerships enable (Hoseth & Thampapillai, 2018; Hudzik, 2011). **In this way, global universities improve their performance and create better value quality and quantity, for their stakeholders by engaging and cooperating to maximise the benefits of higher education internationalisation, enforcing the notion that universities can actually compete globally, by cooperating globally in a strategic manner.**

Since partnerships themselves are not a new or novel phenomenon, global universities must execute them in the most effective way possible to maximise benefits and gain competitive advantages for all participants. Despite the myriad opportunities for performance enhancement and expansion listed above, previous studies have generally concluded that developing a high quantity of partnerships is not the best strategy for realising these goals (Hoseth & Thampapillai, 2018; Sandström & Weimer, 2016). Global universities must be more strategic in partnership selection, focusing on quality, by seeking out other global university partners that can achieve multiple internationalisation value-creation objectives simultaneously (Sandström & Weimer, 2016). **This is best accomplished through relational partnership building, where the global universities involved seek more profound and nuanced partnerships built upon mutual interests and values, where institutions engage with one another through multiple and diverse programs, thus creating an entire activity portfolio within the partnership.** These nuanced and multidimensional collaborations generate knowledge spillovers through their inherent interdisciplinarity, further enhancing stakeholder value (Lehmann et al., 2020). Naturally, relational partnerships are then more sustainable as well, since they become ingrained into the institutions themselves and are not only fuelled by individual administrative or academic personnel (Hoseth & Thampapillai, 2018; Sandström & Weimer, 2016).

The partnership between Indiana University (USA) and the University of Augsburg (Germany) serves as an example of how global universities leverage a relational partnership to realise value creation for their stakeholders that they could not generate on their own. Originating from a personal relationship between two professors, the respective university apparatuses seized the opportunity to make the partnership institutional – moving from a starting point of isolated research projects to include student publications, internationally-mixed student group consultancy projects, faculty-led study abroad programming, visiting faculty stays and research visits, co-hosted administrative summits, guest lectures and symposiums and semester-long student exchange programs. Over time, Indiana University established an office in Berlin, the IU Europe Gateway (among other worldwide locations), provides staff and space to help support such initiatives. Each additional program and initiative is designed to address one or more traditional university missions (teaching, research and service to society) and has brought new faculty members, administrative staff and students into the fold. This has increased the interconnected depth and breadth of the partnership not only across each university's faculties but also to include one another in their respective broader partnership networks that incorporate other global universities and organisations, further increasing connections, opportunities and spillovers. This nature of intentional partnership expansion has greatly increased the number and quality of personal relationships between the internal stakeholders of the two universities, which, in turn, improves the quality and institutional trust in the overall partnership. With these qualities of shared interests, values and authenticity, the relationship is better leveraged by both institutions to act upon new opportunities, create additional value for one another and seize the resulting benefits (Sandström & Weimer, 2016). Further information regarding this case can be found on the associated university web pages.[1] [2] [3] [4]

Global universities that leverage relational partnerships are able to lean on the trust and experience established in those partnerships to operate more quickly and flexibly than what is ordinarily possible in such large, process-oriented, bureaucratic institutions (Hoseth & Thampapillai, 2018; Sandström & Weimer, 2016). Not only does this provide first-mover benefits for partnering global universities to capitalise on new possibilities in the higher education marketplace, but it also enables participating universities to respond quickly, creatively and appropriately in times of change or crisis such as Brexit or the COVID-19 Pandemic (Otto, 2021).

1. https://international.oneill.indiana.edu/
2. https://www.uni-augsburg.de/de/fakultaet/wiwi/prof/bwl/lehmann/summer-school/
3. https://assets.uni-augsburg.de/media/filer_public/c5/1f/c51fff50-7736-4a30-b87c-7105354aadfe/inside_view_special_issue.pdf
4. https://global.iu.edu/presence/gateways/europe/index.html

In the latter case, the relationship between Indiana University and the University of Augsburg is further proof of this point. Directly after the outbreak of the pandemic, both universities were able to rely on their shared trust and history to swiftly alter plans and move international programs online, utilising new platforms and tools to continue creating value for stakeholders by keeping international education opportunities alive. Through the relational partnership, these global universities were able to pivot into a digital learning and engagement space to continue delivering student exchange programming, student group projects, consultancy services for external organisations, guest lectures, etc. This allowed the partners to continue to create value for their existing stakeholders in teaching, research and service and expand their reach and attract interest from new audiences and participants

How Global Universities are Measured and Assessed

Understanding that the goal and orientation of global universities is geared towards utilising relational partnerships and networks to improve mission achievement in teaching, research and service to society, it follows that at the top level, they are assessed by their overall performance in these categories. While universities of all sizes and reputations are also able to assert themselves as global universities, elite research institutions are deemed to be employing these concepts in such a way as to differentiate themselves from competitors, particularly their local peers (U.S. News and World Report, 2021). While there is certainly debate regarding the nature, composition, use and methodology behind global university ranking and evaluation systems (Marginson, 2007; Rauhvargers, 2011; van Vught & Ziegele, 2011), the U.S. News and World report utilise the above rationale to assess the top 1,500 global universities with select metrics which measure academic and research performance as well as regional, national and international reputation (U.S. News and World Report, 2021).

The geographic distribution of the top 1,500 global universities shows the individual countries that currently excel in this arena (see Table 2), and a look at the rankings, dating back to the origin of this system nearly a decade ago, shows how the concept has gained prominence internationally over time (U.S. News and World Report, 2021). While the U.S. News and World Report's findings are generally highly regarded, other points of view suggest that measurement and assessment of global universities may develop and become more nuanced over time to more adequately represent the effectiveness of leveraging relational partnerships to create value and mutual benefits, regardless of institutional reputation, national/cultural context or prestige writ large (Marginson, 2007; Rauhvargers, 2011; van Vught & Ziegele, 2011).

Table 2: Top 25 Country Locations of Global Universities

Country	Number of universities in the top 1,500	Percentage of the universities in the top 1,500
United States	255	17.0%
China	176	11.7%
United Kingdom	87	5.8%
France	70	4.7%
Germany	68	4.5%
Japan	65	4.3%
Italy	58	3.9%
Spain	48	3.2%
India	46	3.1%
South Korea	41	2.7%
Australia	39	2.6%
Brazil	38	2.5%
Canada	36	2.4%
Turkey	36	2.4%
Iran	31	2.1%
Poland	24	1.6%
Taiwan	21	1.4%
Russia	19	1.3%
Egypt	16	1.1%
Austria	14	0.9%

Chile	14	0.9%
Sweden	14	0.9%
Netherlands	13	0.9%
South Africa	13	0.9%
Portugal	12	0.8%

The Future of the Global University

The recent Covid-19 pandemic emphasises that the world has been facing many natural epidemics or outbreaks with global health concerns in the last two decades, e.g., SARS virus in 2003, Bird Flu virus in 2008 and Ebola in 2010, all requiring global solutions. While every nation maintains and applies its unique politics and mechanisms to stay healthy, cope with inequality, handle migration, etc., global solutions are necessary. These must be based on knowledge created in global knowledge production functions within global ecosystems that have global universities at their core. While much of the recent debate is about joint knowledge production and spillovers to solve natural pandemics, global universities are also looking back to their 'Humboldtian' roots in the sense that they generate knowledge and public value beyond the commercialising of knowledge spillovers in the short term. To do so, they expand their reach, influence and effectiveness by building relational partnerships with one another that allows them to achieve more for their stakeholders together than what they can on their own. **While recent nationalist and protectionist movements may hinder the mobility of students and scientists today, they will not impede the continued emergence of the global university in the future.**

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Knowledge Democracy and Higher Education [1]

Budd L. Hall and Rajesh Tandon

The call for decolonisation of knowledge and higher education grows. In South Africa, this call has been for ending what has been experienced as a form of intellectual apartheid in South African Universities whereby the dominant theoretical foundations of the academic disciplines are of European origin mostly written by white European or North American authors. In Canada, one of the authors of the discussion focuses on how higher education institutions are challenged by Indigenous ways of knowing, learning and teaching. In India, the calls for a decolonising project can be heard from voices of civil society and social movement structures as well as directly from the urban poor, women victims of violence, Tribal peoples and others labelled as subaltern.

Our contribution to this important world report consists of a discussion about the concepts and principles of knowledge democracy, the origins of the domination of Eurocentric knowledge systems, and stories about what higher education institutions in various parts of the world are doing to address the challenges of knowledge democracy. An extended discussion of these ideas can be found in our recent book on Socially Responsible Higher Education: International Perspectives on Knowledge Democracy (Hall & Tandon, 2021).

Knowledge Democracy

Knowledge democracy refers to an interrelationship of phenomena. First, it acknowledges the importance of multiple epistemologies or ways of knowing, such as organic, spiritual and land-based systems, frameworks arising from our social movements, and the knowledge of the marginalised or excluded everywhere, or what is sometimes referred to as subaltern knowledge.

Secondly, it affirms that knowledge is both created and represented in multiple forms, including text, image, numbers, story, music, drama, poetry, ceremony, meditation and more. Third, and fundamental to our thinking about knowledge democracy, is understanding that knowledge is a powerful tool for acting in social movements and elsewhere to deepen democracy and to fight for a fairer and healthier world. And finally, knowledge democracy is about a balance between providing open access for sharing knowledge so that everyone who needs knowledge will have access to it and the control of knowledge by community and Indigenous knowledge keepers. Knowledge democracy is about intentionally linking values of equity, justice, fairness and action to the process of understanding, creating and using knowledge. But before exploring the implications of knowledge democracy for higher education, let us share the dark story of how the knowledge systems of 15th and 16th Century Europe, emanating from the Renaissance, became dominant throughout the world.

1. We acknowledge earlier publication of some of these ideas in Hall and Tandon (2017) Decolonisation of Knowledge, Epistemicide, Knowledge Democracy in Higher Education.

The four epistemicides of the long 16th Century

We are grateful to the work of Grosfoguel and Dussel, who, in addition to de Sousa Santos, have helped us to understand how the ideas of white men from just a few countries such as Italy, France, England, Germany and the USA came to dominate the world of knowledge (Grosfoguel, 2013; Dussel, 1993). How and when were the colonial structures of knowledge created? How have we arrived at this point in time when any of us could be parachuted into any university in the world, settled into a social science lecture and be at home with the authors and ideas being discussed?

To understand this, we have to look at what Grosfoguel has called the "Four Genocides/Epistemicides of the Long 16th Century" (Grosfoguel, 2013). It seems that the story of dispossessing people from the ownership of their ideas in the community began with the creation of mediaeval universities that brought ecclesiastical power to the new universities was just the start of our knowledge story. Grosfoguel mentions four distinct

stories of epistemicide together, which have almost always been treated as separate historical processes. In doing so, we learn in a powerful manner how intellectual colonisation emerged. The four epistemicides are the conquest of Al-Andalus, the expulsion of Muslims and Jews from Europe, the conquest of the Indigenous Peoples of the Americas started by the Spanish, continued by the French and the English and still underway today in the contemporary Western Hemisphere. The creation of the slave trade, resulting in millions killed in Africa and at sea and being totally de-humanised by enslavement in the Americas, was a third genocidal knowledge conquest. Finally, the killing of millions of Indo-European women, mostly by burning them at the stake as witches because of their knowledge practices not controlled by men. These conquests transformed Europe from being at the periphery of an earlier dominant Islamic centre of intellectual power to taking centre stage. But in a historical irony, Spain and Portugal, the leading military and intellectual powers of the 15th Century, have been shut out of the post 16th Century Northern European monopoly of knowledge.

What is important to understand is that these four conquests were both military and epistemological/ideological. At the height of the Al-Andalus Empire in Europe, the city of Cordoba had a 100,000-book library. This was at a time when the largest Christian intellectual centres in Europe would have had libraries of 5-10,000 books. The Spanish burned the library in Cordoba and elsewhere, also destroying most of the codices in the Mayan, Inca and Aztec empires. Women's knowledge, which was largely oral, was simply silenced, as was the knowledge of Africa. African slaves were portrayed as non-human, incapable of Western-style thought. Hegel, for example, commenting on Africans, says, "Among negroes it is the case that consciousness has not attained even the intuition of any sort of objectivity...the negro is the man as a beast (Lectures 218)" (as quoted in Dussell, 1993). The continued linguicide of Indigenous languages in North America and throughout the world today is evidence that the patterns established through conquest in the 16th Century are still deeply entrenched in our minds and most certainly in our higher education institutions.

There are so many examples of how the western monopoly of knowledge has distorted our higher education institutions that we only need to take a look at each and every university in Canada, starting with my own University of Victoria. But simply for illustrative purposes, let me share some thoughts from several African scholars about how they see the situation. Lebakeng, Phalane, Dalindjebo (South Africa), Odara-Hoppers (South Africa-Uganda), Wangoola (Uganda) and Ezeanya (Rwanda) have written/worked extensively on the importance of the recovery of the continent's intellectual traditions. "Institutions of higher education in South Africa were (and still are) copycats whose primary function was (and still is) to serve and promote Western colonial values" (Lebakeng, 2006). Similarly, Ezeanya adds, "In Africa, the research agenda, curriculum and 'given' conceptual frameworks should be continuously re-examined ...with the aim of eschewing all manifestations of neo-colonial underpinnings and emphasising indigenous ideas" (Ezeyanya, 2011).

Ecologies of knowledge and cognitive justice

Boaventura de Sousa Santos observes that we have created an intellectual abyss in the realm of knowledge, which hinders human progress. He speaks of abyssal thinking, which he notes "consists in granting modern science the monopoly of the universal distinction between true and false to the detriment of [...] alternative bodies of knowledge" (de Sousa Santos, 2007).

The global dividing line he is referring to is the one that separates the visible constituents of knowledge and power from the invisible. Popular, lay, plebeian, peasant, Indigenous, the knowledge of the disabled themselves and more cannot be fitted into any of the ways of knowing on 'this side of the line'. They exist on the other side of the 'abyss', the other side of the line. And because of this invisibility, they are beyond truth or falsehood. The 'other side of the line' is the realm of beliefs, opinions, intuitive or subjective understandings, which at best may become "objects or raw material for scientific inquiry" (de Sousa Santos, 2007). The author establishes a strong link between values and aspiration in saying, "Global social injustice is therefore intimately linked to global cognitive injustice. The struggle for global social justice will, therefore, also be a struggle for cognitive justice." (de Sousa Santos, 2007)

Shiv Visvanathan contributes to this discourse expanding the concept of "cognitive justice".

"The idea of cognitive justice sensitises us not only to forms of knowledge but also to the diverse communities of problem-solving. Therefore, what one offers is a democratic imagination with a non-market, non-competitive view of the world, where conversation, reciprocity and translation create knowledge not as an expert, almost zero-sum view of the world but as a collaboration of memories, legacies, heritages, a manifold heuristic of problem-solving, where citizens take both power and knowledge into their own hands."

"These forms of knowledge, especially the ideas of complexity, represent new forms of power-sharing and problem-solving that go beyond the limits of voice and resistance. They are empowering because they transcend the standard hegemonic cartographies of power and innovation. By incorporating the dynamics of knowledge into democracy, we reframe the axiomatics of knowledge based on hospitality, community, non-violence, humility and a multiple idea of time, where the citizen as trustee and inventor visualises and creates a new self-reflexive idea of democracy around actual communities of practice." (Visvanathan, 2009)

The problem arising from the domination of the Western knowledge system is not only that the ways of knowing, the cultures and the stories of the majority of people of the world are excluded, but that given the Western knowledge narrative that links some forms of knowledge with progress, science and the future, it looks as though colonialism has disabled the global North from learning in non-colonial terms. Is the global North stuck in a rut in history's path that does not allow for the existence of histories and knowledge systems of others than the universal history of the West?

Knowledge Democracy in Practice

What does it mean to put the principles of knowledge democracy into practice in higher education institutions? The following examples illustrate some of the ways in which these principles have been taken up in curriculum development, student engagement, community-based participatory research, regional and global networking and more.

Indigenous Ways of Knowing at The University of Victoria (Canada)

The University of Victoria has seen steady growth in efforts to either indigenise or decolonise the university. They built a First People's House in the centre of the university campus. Indigenous Community leaders and Indigenous Faculty and staff at the University jointly manage this house. They have created a position as Director of Indigenous Academics and Community Engagement and an Assistant Vice-President for Indigenous Affairs. But perhaps the most powerful contributions have been the creation of Indigenous academic programmes in Law, Social Work, Education, Nursing, Governance, Humanities, Counselling, Linguistics and the Social Sciences. The most recent programmes created are BA and MA degrees in Indigenous Language Revitalisation. Along with the development of Indigenous academic programming, there has been a deepening of relations between the University of Victoria and the surrounding Indigenous communities where the university is located on Vancouver Island. Before accepting his university inauguration as the new President of the University of Victoria in 2021, President Kevin Hall asked for formal permission from the surrounding First Nations communities to live and work on their land. A ceremony organised by the territorial First Nations communities was held, and the protocol of giving the President permission was granted. This was an unprecedented act in Canadian university history.

Universidad Nacional de General Sarmiento (UNGS, Argentina)

The UNGS is a small public university created in 1992 to meet local and regional education needs not covered by traditional academic offerings. Its main campus is in Malvinas Argentina, a locality in the Province of Buenos Aires marked by high levels of poverty and other related conditions. Since its inception, the UNGS has facilitated the convergence of research, teaching and community services to contribute to the socio-economic development of the local communities. Relationship with the local context is a key component of the UNGS identity and has determined its origin, strategic project, institutional design and ongoing development.[2]

To encourage research partnerships and engagements, the UNGS has established the Community Services Centre to manage, promote and disseminate local and regional development projects that connect students, faculty members and a variety of stakeholders (governments, private firms and CSO) in an institutionalised manner.[3] This unit integrates the service-learning and outreach initiatives presented by UNGS professors that impact on key academic functions. Thus, the three principles that structure the institutional identity of the UNGS (i.e., research, teaching and community services) are embodied in the development of training courses and diplomas for non-academic stakeholders, external consulting services, basic and applied research and local development projects that contribute to the strengthening of science and technology. These community services are offered to achieve two critical goals: (i) to provide solutions to problems identified by civil society actors; (ii) to improve the entire process of knowledge production and the existing training and teaching practices within the UNGS.

Te Whare Wananga O Awanuiarangi (Aotearoa/ New Zealand)

Te Whare Wananga O Awanuiarangi is a Maori University headed by Sir Hingangaroa Smith, a distinguished Maori scholar. The mission statement of this visionary institution is as follows:

> "We are committed to explore and define the depths of knowledge in Aotearoa, to enable us to re-enrich ourselves, to know who we are, to know where we came from and to claim our place in the future. We take this journey of discovery, of reclamation of sovereignty, establishing the equality of Māori intellectual tradition alongside the knowledge base of others. Thus, we can stand proudly together with all people of the world. This is in part the dream and vision of Te Whare Wānanga o Awanuiārangi". [4]

2. See: https://www.ungs.edu.ar/
3. See: www.ungs.edu.ar/ms_centro_servicios

Dayalbagh Educational Institute, Agra (India)

Associated with the Radhasoami sect of Hinduism, Dayalbagh Educational Institute (DEI) is located in Agra, India, within the heart of a colony of 3000 followers of the Radhasoami faith. The colony provides a space for living together irrespective of caste, creed, colour and the following of a devotional life integrating meditative practices, collective labour in the farm and dairy, use of solar electricity and cooking, a collective kitchen, rainwater harvesting, free medical services in both allopathic and Indian systems of medicine. The DEI is a value-based and holistic education institution that combines work-related vocational and crafts teaching with leading-edge scientific programmes. It is an institution where the holistic value-based teachings of Radhasoami Hinduism live in respectful harmony with western scientific knowledge. In Dayalbagh, we see an attempt to establish a new order where women and men live and work in harmony serving humanity. [5]

The Committee of Entities in the Struggle Against Hunger and for a Full Life (COEP) (Brazil)

COEP is a national social mobilisation network established in Rio de Janeiro in 1993 to mobilise institutional and public action to support the popular movement against hunger and poverty. The network's membership now includes more than 1000 member organisations such as public enterprises, non-governmental organisations, private-sector firms, and government departments. COEP was created by a small group of activists led by sociologist Herbert de Souza, known as 'Betinho'. Together with Luis Pinguelli Rosa of the Federal University of Rio de Janeiro, and André Spitz of Furnas, the electricity utility, Betinho invited the presidents of the major public entities to discuss their integration into the 'Struggle against Hunger and Misery'. Soon, over 30 enterprises representing sectors such as banking, energy, telecommunications, health, agriculture and education declared their membership.

4. See: http://www.wananga.ac.nz/about/vision
5. See: https://www.dei.ac.in/dei/

Each year, COEP focuses on a specific theme for social development at a national level, aiming for collective impact at the community level throughout Brazil. Climate change and poverty are currently major themes throughout the networks. An agenda concerned with both preventing and addressing the effects of climate change has been constructed to inform dialogue and public policy as well as implementing specific initiatives (Guthberlet & Tremblay, 2014).

The Knowledge for Change Global Consortium on Community-Based Participatory Research (Global network)

The *Knowledge for Change (K4C) Consortium* is an international consortium of community-based research hubs based on principles of knowledge democracy. There are currently 22 K4C hubs in Indonesia, India, Malaysia, Ireland, Italy, Canada, South Africa, Colombia, Cuba, Uganda, Tanzania and the UK (UNESCO Chair CBR-SR, 2020). Each hub is a partnership between an academic institution and a community organisation. The hubs provide training opportunities for young people in academic and community settings. The K4C Global Consortium is an initiative of the UNESCO Chair in Community-Based Research and Social Responsibility in Higher Education. The K4C Consortium aims to develop research capacities for the co-creation of knowledge through collective action by community groups and academics working together in training hubs around the world on issues related to the UN Sustainable Development Goals, such as Indigenous wellbeing, water governance, poverty and inequality, climate action, gender equality and violence against women. K4C accomplishes this through a decentralised training structure (Lepore, 2020).

Social Infrastructures: Engaging with Communities for Change (South Africa)

Benita Moolman and Janice McMillan, in a recent publication (2021), shared a case study of their experience teaching an undergraduate course on Engineering and Built Environment at the University of Cape Town. They contextualise the course within a backdrop of education as a form of colonial violence in South African history. Knowledge co-creation, community-engaged learning and social justice are noted as key components of the pedagogical design of the course. The course consists of two basic parts. The first part is on critical interrogation of concepts and practices of transformative adult education and community engagement. The second part is based on challenges facing cities and communities in the region. Students are understood to be learners, emerging professionals and active citizens. In their conclusion, the authors note, "a more critical, decolonial lens, shaping processes of knowledge co-creation and framed by social justice principles is needed to inform teaching and learning practice in higher education" (Moolman & McMillan, 2021)

Education Outside the Classroom: University Javeriana (Colombia)

James Cuenca Morales and Claudia Lucia Mora Motta (2021) tell us of their experience at the Universidad Javeriana Cali with the FORJA, a community-based learning strategy whereby students work in communities to strengthen their roles as allies in co-responsibility for community change. Working in the three territories of Buga, Pance and Commune 18. Students work with community members and community organisations to identify projects that address fundamental inequality and exclusion issues. They admit that many academics still believe in the superiority of university-based knowledge but that the FORJA course environment is provides a space for recognising the knowledge that those living and working in the community hold. The FORJA strategy is proving to be a space of transformative energy and knowledge democratisation for students, academics and community members.

Replacing English with Arabic -Qatar University (Qatar)

Emna Belkhiria, Mazhar Al-Zo'by and Arslan Ayari share their story of replacing English with Arabic as the language of instruction at Qatar University (2021). This is, in many ways, a remarkable story, as English has become more and more dominant as a language of knowledge sharing worldwide. But English is also the means by which linguicide, the killing or diminishing of other languages and epistemicide, the disappearing of other language systems occurs. They note that the rapid economic development in the Gulf regions of the Arabic-speaking world has created a situation where native Arabic-speaking populations are becoming a minority in their own countries. Sensitive to the challenges of linguistic subordination, the State of Qatar decreed in 2012 a change in the language of instruction at the nation's flagship University, Qatar University. The goals of the decree were to preserve Qatari culture and strengthen Arabic as a language of knowledge production and transfer. The impact of the language change in Qatar for the strengthening of Qatari culture and identity has implications for higher education institutions in all parts of the non-English speaking world.

Continued Relevance of Tagore's Approach to Higher Education (India)

In the late 19th and early 20th Century, the Indian Nobel Prize-Winning Poet, Rabindranath Tagore lent his remarkable creative mind to the idea of a higher education institution based on Bengali cultural values, a land-based pedagogical philosophy and an organic relationship with the communities in the area where he lived. In doing so, he insisted on respect for the knowledge keepers in those communities. Visva-Bharati, the institution of higher education that he founded, is still very much in operation. Tagore's work predates our contemporary discourse of knowledge democracy and is, in fact, a foundation around which our current thinking evolves. Sarita Anand (2021) shares the story of the Visva-Bharati as it is structured today. Arguably the most distinctive characteristics of contemporary Visva-Bharti practices are the numerous festivals, ceremonies, marketplaces, and regularised interactions between the communities in the region and the lives of students and academic staff. Most of these festivals and events were originally created by Tagore and continue today. The principles of humanism, sustainability, self-reliance, respect for the knowledge and skills of community members provide us with how Tagore's ideas remain a powerful inspiration for us all.

Conclusions

Higher Education is facing the most profound challenges to its purposes, structures and ways of work since its first emergence as mainly an expression of post-renaissance European thinking. The climate crisis, the failure of neoliberal capitalism to provide equitable distribution of wealth, the resurgence of land-based knowledge and calls for decolonisation of knowledge will not disappear. The past two years of the pandemic has once again raised the debate of continued relevance of science, research and knowledge. Struggling to share open access data from field studies, scientists began to realise the 'politics of evidence' as multiple treatments for the virus were being promoted by different interest groups. The public scrutiny of science, scientists and their enterprises during this pandemic has demonstrated the societal anchoring of knowledge production and dissemination. The continued politics of vaccine production, certification and distribution across the world of 7 billion humans has reinforced calls for 'dismantling' the pursuit of the knowledge economy. Millions worldwide have been returning to indigenous wisdom, experiential knowledge and grandmothers' recipes during the pandemic and now facing the impact of climate change. **HEIs are expected to play important roles in the search for sustainable solutions and universal wellbeing. Knowledge democracy represents one set of ideas and principles which will be part of the great turning ahead.**

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Open Science: Observations for Universities as Agents of Paradigm Change

Eva Méndez and Núria Bautista-Puig

Abstract

Universities are fundamental niches for research and knowledge generation. Ensuring that the results of research are freely accessible, and promoting a more collaborative and participatory science, is essential to improving the effectiveness of R+I systems, and to opening up Universities' knowledge to the society that sustains them. Open Science implies a new paradigm promoted by the European Commission and embraced in November 2021 by all UNESCO countries, the aim of which is to move from 'publish as quickly as possible' to 'share as soon as possible'.This document characterises Open Science and includes fundamental reflections for its implementation by Universities, taking into account the key role of higher education institutions (HEI) in the effective shift to a new research paradigm, providing examples, initiatives and pointing out the main problems that researchers face in putting Open Science into practice. However, also reflected here is the commitment of many universities and university alliances to Open Science, particularly in Europe, through the creation of the new European Research Area (ERA), in which OS is a structural element.

1. Introduction. Collaboration, equity and sustainability for a global Open Science (OS)

Research and Innovation (R&I) play a fundamental role in Higher Education Institutions (HEIs), and their results are a vital asset for creating a better society. Research is becoming increasingly complex, digital, interdisciplinary, data-driven, dependent on large-scale computing capabilities and highly competitive. Digital technologies, in particular the World Wide Web, enable distributed collaborative research behaviour (David et al., 2008) and the possibility to communicate knowledge immediately, transparently, collaboratively, openly and globally. The Web, and the openness of research and innovation processes and collaboration, provide an opportunity to envisage a promising transformation of the way we do science. Despite this, **the way we conduct, publish, fund and evaluate research has not changed since the 20th century** (Méndez, 2021).

In universities, we have been talking about open science for many years now, but not always as a serious concept. OS policies and mandates, until quite recently, focused solely on Open Access (OA) to scientific publications, and often conflicted with national policies and with universities' other underlying interests such as rankings, which dominate policies and behaviours, **pushing researchers towards the traditional "publish or perish" and subjecting them to the tyranny of 20th-century metrics and the business of scientific publishers.**

HEIs are key institutions in the 2030 Agenda[1]. One of the biggest challenges facing universities in the 21st century is how to effectively manage their efforts to solve societal problems, such as those tackled through the Sustainable Development Goals (SDGs), in an increasingly complex, competitive and changing global environment (Păunescu et al., 2022). **OS is also an essential enabler of the 2030 Agenda[2], and can be seen as a concrete way to reduce inequalities (SDG 10) and leave no one behind.** It must also be adapted to universities in less developed countries where they do not have the funding needed for research. Investments should create a virtuous circle in which changes in research outcomes generate more funding in the long term (Onie, 2020). "Failure to address structural inequalities directly means that those who are already privileged will see their advantages increase, especially because they have greater influence over the way Open Science is implemented" (Ross-Hellauer, 2022).

1. See: Global University Network for Innovation (GUNI). Rethinking HEIs for Sustainable and Inclusive Societies: https://www.guninetwork.org/files/concept_note_guni_2021_new_visions_for_he_2030_def.pdf
2. See: Towards Global Open Science: Core Enabler of the UN 2030 Agenda: https://research.un.org/conferences/OpenScienceUN

2. The concept of Open Science, and challenges for universities

2.1 Open Science: a new global paradigm for research and innovation

OS is a new way of conceiving research through collaborative work, openness and transparency in all stages of research, and bringing science closer to society more effectively. It requires a radical transformation in the way research is conducted, and requires the current model to undergo a paradigm shift (Anglada & Abadal, 2018).

OS emerged in the fields of economic history and the sociology of science, which focus on the economic dimension of knowledge and intellectual capitalism in the late 17th century. In the sociology of science, the principle of openness is seen as inherent to academic activity and can be traced back to the original precepts underpinning the conduct of researchers (Merton, 1974). The race to be the first to claim credit in science has traditionally provided a strong incentive for scientists to make their knowledge public. The sharing of scientific knowledge created with public money, however, poses a social and political problem.

Most theories and definitions characterise OS as a "movement"; however, as well as the activism side, OS has a political discourse and a set of traits and modes of behaviour that shape the nature of research as a system, and which transcend the basic discussion of "open vs. closed" science. Because of this, we prefer to speak of a new paradigm and a new attitude for and towards research (Méndez, 2021).

Although the European Commission's policies, actions, recommendations and funding programmes have helped to legitimise OS as a term and "brand", it was not until the recommendations of UNESCO, in November 2021, that a consensus definition was reached and the name "Open Science" was chosen over other possible names (Open Scholarship, Open Research or Open Knowledge). Thus, Open Science is defined as:

> "an inclusive construct that combines various movements and practices aiming to make multilingual scientific knowledge openly available, accessible and reusable for everyone, to increase scientific collaborations and sharing of information for the benefits of science and society, and to open the processes of scientific knowledge creation, evaluation and communication to societal actors beyond the traditional scientific community. It comprises all scientific disciplines and aspects of scholarly practices, including basic and applied sciences, natural and social sciences and the humanities, and it builds on the following key pillars: open scientific knowledge, open science infrastructures, science communication, open engagement of societal actors and open dialogue with other knowledge systems." (UNESCO, 2021).

Yeratziotis et al. (2022) highlight the impact of research on society, which should be a natural consequence of OS, as it encompasses all disciplines, for different groups and societal actors, and multiple levels of analysis, methods and complex interdependencies between Academia, Business, Government, Society and Environment. The quintuple helix model recognises the distinct roles that these main actors have in the innovation system, highlighting the importance of actively integrating citizens into research, development and innovation. Ignat & Ayris, (2020) emphasise that OS enables knowledge sharing between the scientific community, society and business, making it possible to increase the recognition and the social and economic impact of science. **OS is more than just open access to data and publications; it is the opening up of the scientific process as a whole, strengthening the concept of scientific social responsibility. The practical implementation of OS creates multiple opportunities for innovation, and enables new products, services, businesses and companies to be developed.**

In addition to the three main public statements of Budapest (2001), Berlin (2003) and Bethesda (2003) (known as the three Bs), which focused on open access to publications, the last 20 years have seen recommendations, manifestos and all kinds of documents supporting OS or aspects of it.[3] The European Commission (EC) has boosted the analysis, feasibility and motivation of OS, creating specific working groups, documents and observations that mark various milestones in its development (e.g. EC, 2016; Hessels et al., 2021; OSPP-REC, 2018, O'Carroll et al., 2017, 2017b, etc.). However, many of these reports show that we are still in a transitional process, as indicated by the inclusion of "Towards" in the title of many of them (EC, 2021; CSES, 2020; Méndez et al., 2020). Nevertheless, universities and other research institutions have always been considered the main stakeholders in this complex and necessary scenario.

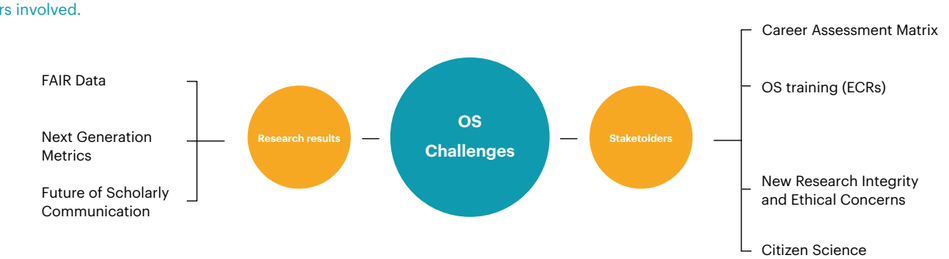
The EC has been the driving force behind OS policies, which have been taken up by the 27 Member States and other European countries outside the EU. Several states have thus launched specific national policies to promote and implement OS. The Scholarly Publishing and Academic Resources Coalition (SPARC Europe) and the Digital Curation Centre (DDC), publish an annual report on the current situation regarding OS policies in Europe. The latest of these reports (Sveinsdottir et al., 2021) recognises that 12 of the 27 EU Member States have an OS policy, with varying strategies: centralised policy at government level (such as France) or through participatory methodologies (such as Finland). Switzerland's policy is worth noting for the fact that universities are the ones leading the transition to OS. Regardless of the level of leadership they have in the corresponding national strategies, European universities are fundamental actors, to a greater or lesser extent, and their evolution is properly monitored through the annual survey of the European University Association (EUA) on OS (Morais et al., 2021).

The EC's latest prospective study by the Rathenau Institute looks at the effects of global variations in OS practices on the European research system. It makes a geographical comparison between China, the United States and the EU to analyse the geopolitical developments and coordination mechanisms used by the EU and these two vast and disparate countries. In 2019, China presented 32% of its scientific publications in OA, compared to 43% in the US and 45% in the EU (Hessels et al., 2021, based on information taken from the Web of Science). The EU is making a coordinated effort to create a global infrastructure – the European Open Science Cloud (EOSC) – where several interested universities have signed up to be members or observers of the EOSC association. In other parts of the world, the same approach is being taken, but at different speeds and with varying levels of commitment. In some countries, HEIs have other priorities and require OS to be redesigned to suit their needs (Onie, 2020) or to ensure that their needs are met through OS. However, creating national infrastructures for research data and the promotion of Open Science is already a fairly common initiative (e.g. the African Open Science Platform; the CSTCloud in China; the Malaysian Open Science Platform (MOSP); the National Research Data Infrastructure (NFDI) in Germany; and the Australian Research Data Commons, (ARDC).) Since 2019, there has been talk of creating a Global Open Science Cloud infrastructure that helps to address complex problems and scientific challenges through interdisciplinary research data. OS is a global effort that requires the whole world to play an active role. UNESCO not only defines OS as a global public good, but also includes the need for international cooperation between different actors in all countries and in key areas.

2.2. The challenges of Open Science and how universities can address them

OS cannot be delayed any longer, and HEIs are playing a key role in its implementation. In the latest HEIW7 report, Ayris & Labastida (2019) highlight the eight fundamental challenges or pillars identified by the EC and emphasise the need for universities to undergo a change of culture in order to face these challenges, as described in the League of European Research Universities (LERU) report. If we remove the specificity of the European EOSC, and summarise it as the need for Findable, Accessible, Interoperable and Reusable (FAIR) research data infrastructures, then these challenges or pillars can be extrapolated to any HEI, not just in Europe, and can be categorised into challenges either related to research results, or to the stakeholders involved (Fig. 1)

Figure 1. Main OS challenges related to research results and to the stakeholders involved.



Source: adapted from (Méndez, 2021)

3. See: Charters and Principles in Scholarly Communication: http://tinyurl.com/scholcomm-charters. To date (March 2022), this living document includes over 120 declarations, manifestos, etc.

In addition to these more or less universally accepted challenges, we must include another: **equity**, which also derives from UNESCO (2021) and **is crucial to ensure that OS is not the norm solely in the most prosperous or developed countries and institutions, but that all HEIs have the resources they need to transition to OS.** Universities must embrace a culture that promotes diversity and equal opportunities, articulating shared values that create a shared research and innovation system, and establishing the necessary legal and social framework to implement it.

As we have highlighted on numerous occasions (Méndez, 2021; Méndez et al., 2020), **OS does not only need policies, statements and recommendations; it also needs Practical Commitments for Implementation (PCIs) from all stakeholders involved.** PCIs are measures that put into practice the principles and values of OS; they are realistic and include a concrete action plan. In Spain, the Digital Agenda 2025 (Government of Spain, 2020) defines the country's priorities in the current context, and the challenges and developments foreseen for the coming years, and includes the actions that the EUA will take to support them. It highlights three priorities: universal and permanent OA to all research results; FAIR research data; and institutional accountability in research evaluation, which is undeniably the game changer (cf. 3.1).

3. Keys to implementing Open Science in HEIs: transforming and collaborating

3.1. The Gordian Knot: The change needed in the research evaluation system

The current research system works under the irrational and anachronistic imperative to "publish or perish", and the success of an academic career is measured by the papers a researcher publishes – not in just any scientific journal, but in those considered "good" according to metrics that, much like the journal impact factor (JIF), cannot measure the quality of a paper but only the popularity of the journal in which it is published. The JIF was originally intended to help libraries decide which journals to purchase for their collections, but it has since become the basic trusted metric used to evaluate research articles (McKiernan et al., 2019) and, worse still, for determining promotion in research careers.

This type of evaluation based on quantitative indicators and exclusively on publications is the biggest barrier to OS, and is recognised as such by everyone involved in the science system. Since 2021, the EC has facilitated efforts to reform the research evaluation system. In December 2020 it published a Scoping Report (EC, 2021) to boost the process of reviewing and building a consensus with stakeholders with the aim of establishing responsible evaluation. This evaluation reform is part of the policy agenda of the European Research Area (ERA). For that purpose, the Commission has brought together a coalition of organisations (led by the EUA and ScienceEurope) to implement the reform. These organisations include other university networks, which have stated their position (e.g. the Young European Research Universities Network (YERUN) and the League of European Research Universities (LERU), and agree on the need for greater multidimensionality in the evaluation process. **Evaluating researchers solely based on the number of highly cited articles they have published in journals with a high JIF underestimates the value of other contributions, limits reproducibility and discourages researchers from collaborating.** The need for multidimensional evaluation is highlighted in the career assessment matrix (CAM) (O'Carroll et al., 2017b) and is also reflected in the Dutch position paper Room for Everyone's Talent.[4]

Universities usually highlight their autonomy when describing their evaluation and promotion systems, but 75% of HEIs acknowledge the prevalence of the JIF as an indicator in individual evaluations. However, some countries are taking a different approach to research evaluation, such as the Netherlands, where universities have created a Strategy Evaluation Protocol (SEP 2021-2027), and individual institutions have established systems of incentives not based on qualitative indicators.

3.2. Science is yours: participatory research structures within universities

Engaging society and societal actors has been a priority for the EU over the last five years (EC, 2017; Lamy et al., 2017). However, there is still a lack of mechanisms to

4. See: https://www.nwo.nl/sites/nwo/files/media-files/2019-Recognition-Rewards-Position-Paper_EN.pdf

systematise the involvement of citizens in HEI research. Several studies have shown that society can play a meaningful role in debates on science and technology, and that this win-win interaction can help to strengthen democracies and decision-making (Marzuki, 2015; Renn et al., 1993). In this regard, **at a time of heightened concern over citizens' lack of faith in science, it is more important than ever to establish institutionalised mechanisms that include citizens in the conduct and governance of science and innovation in HEIs** (Mejlgaard et al., 2018). To engage society in research, OS creates a framework where there is a need to shift from seeing science as a product to seeing science as a process, and to foster competition between researchers for collaboration that goes beyond universities and boosts innovation.

Although many projects include participatory methodologies for this key OS challenge, citizens' contributions need to be more meaningful at numerous stages of the entire research process. For that purpose, universities need to provide infrastructures and programmes to develop such practices. The way universities choose to establish this type of practice varies, from makerspaces (hackerspaces or FameLab) (Niaros et al., 2017), to science shops (Leydesdorff & Ward, 2005) and living labs (Schuurman et al., 2011) (also recently called Open Labs). Living labs are spaces for testing, validation, development and co-creation at all stages of a design and commercialisation process (Leminen et al., 2017) and have been implemented by both companies (Merz et al., 2007) and universities (Nesterova & Quak, 2016).

Committed and innovative universities must put citizens at the heart of OS, in line with the principles of Responsible Research and Innovation (RRI). There has been significant progress in recent years, but there is still a long way to go before this is a widespread approach in universities.

3.3. Research quality: scientific integrity and reproducibility

Another aspect that universities need to pay attention to **is quality of research, which can be compromised by initiatives and behaviour falsely presented as OS.** OS sometimes breeds opportunistic behaviour, such as editorial practices that have resulted in fraudulent journals, and others that – while not considered outright fraud – have encouraged predatory behaviour. A new ethical code of good practice is needed to guarantee the reproducibility of science and a new integrity in the universities of today to guarantee a proper transition to the OS paradigm.

The new ethics required by OS and data-driven science presents a fundamental challenge and still lacks a shared or global vision that goes beyond pre-established codes of ethics (e.g. ALLEA, 2017). Reproducibility is a continuum based on three main research processes: reproduction (re-creation of a study by a third party, using the original setting, data and analysis methodology), replication (more general re-creation of results, using the same analytical method but on different datasets) and re-use (more flexible re-use of results beyond the original research context (transdisciplinarity) (Lusoli, 2020).

HEIs must establish ethical and technical protocols for data sharing that guarantee broad reproducibility/replicability and reuse, including the publication of negative results, which are currently discriminated against in scientific output. From a technical point of view, making data FAIR is no small matter. It requires investment and monitoring by universities, which are not always prepared to go any further than funders' requirements to create a data management plan (DMP). Publishing all the data that underpins a piece of research can save resources and avoid repeating failed experiments. We cannot estimate how much it costs HEIs to make their data compliant with FAIR principles, but we do know how costly it is if they are not (PwC EU Services., 2018).

3.4. Strength in numbers: university networks and alliances for implementing Open Science.

From a supra-institutional point of view, university networks in Europe (EUA, YERUN, LERU, CESAER, etc.) and internationally (GUNI, IUA, ACA, etc.) have played – and continue to play – a very important role. European university alliances have also joined them through EC-funded projects in the EU. This initiative presents an opportunity to work together, to reflect and to deepen university collaboration in a multilateral environment. **University alliances can serve as role models or test-beds** for new approaches (Claeys-Kulik, 2021), particularly to bring about the **real, cross-institutional implementation of OS through solid PCIs.** To maximise synergies in research and innovation policies, the

EC complemented the funding of the Erasmus+ European Universities Initiative through a specific call for proposals for the Horizon 2020 Science with and for Society (SwafS) programme. All partnerships therefore have a project in which **"mainstreaming Open Science practices" was one of the transformation modules** highlighted in the call. OS is an essential part of all the projects funded in this call, and thus also in the partnerships and institutions involved in them: for example, YUFERING (YUFE alliance, Fig.3) and RIS4CIVIS (CIVIS alliance), which have a specific OS work package (WP); and ENHANCERIA (ENHANCE alliance), where OS is a cross-cutting theme throughout the project.

4. Final observations: Knowledge+Open = Universities 2030

Sometimes it can feel like the ideals, values and recommendations of OS remain the same, and the only thing that changes is the target year for bringing about the change. The EC initially set 2020 as its target year for making all publications open; we are now in 2022 and still a long way from meeting that target. The target year for universities is now 2030, as well as for OS and the SDGs. Universities are trying to establish OS policies, but these are increasingly being referred to as "open-washing", which is when action plans are undermined by the pressure of the anachronistic and absurd publication system, or by the purely binary method of monitoring compliance with requirements (e.g. research data is listed as either open or not open, while the level of compliance with FAIR principles is not assessed).

Looking towards 2030, the EUA[5] is presenting **Universities 2030 as institutions that are open, transformative and transnational; sustainable, diverse and engaged; strong, autonomous and accountable.** The EC-commissioned report Towards a 2030 Vision on the Future of Universities in Europe identified several transformation modules. One of these was "knowledge-driven universities in the context of digital changes: the transition to open science (through FAIR and open data) and Open Access". The report also highlighted the need for greater citizen trust in the knowledge produced by universities through collaboration (citizen science) (CSES, 2020). With the same 2030 target, the final report of the Open Science Policy Platform (OSPP) (Méndez et al., 2020) proposed the five attributes that a **shared knowledge-based research system should fulfil by 2030:** an academic career structure that rewards diverse outcomes, practices and behaviours; a research system that is trustworthy and transparent; a research system that enables innovation; a research culture that facilitates diversity and equal opportunities; and a research system that is built on evidence-based policies.

5. See: Universities without walls: A vision for 2030 https://eua.eu/downloads/publications/universities%20without%20walls%20%20a%20vision%20for%202030.pdf

Figure 2. The 2022 Open Science calendar of the YUFE alliance, YUFERING project. DIY-OS Calendar (YUFERING), *January*

Source: adapted from (Méndez, 2022)

Although universities have made an effort to incorporate knowledge and OS into their systems since the beginning of the 21st century, **they are still a long way from becoming Open Knowledge Institutions.** This concept – which was also highlighted in the GUNI *Higher Education in the World 7* report (Benneworth et al., 2019) – defines universities in 2030 as Open Knowledge Institutions, collaborating at various levels (country, region), with different partners (multi-stakeholders) and from a transdisciplinary perspective.

Aside from all the definitions and references given in this article, **OS means giving science back to the researchers who carry it out, and to the society that funds it. Science is like a parachute: if it is not open, it cannot help us.** Universities have a fundamental role to play in creating an ecosystem of innovation and research that allows knowledge to become open and of value for society.

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2.4 Sustainability. Reinventing the role and place of HEIs for a sustainable future

Transgressive learning, resistance pedagogy and disruptive capacity building as levers for sustainability

Arjen E.J. Wals

Abstract

If higher education is to make a significant contribution to the transition towards a more sustainable world, it will need to break the resilient practices of 'business-as-usual' that normalise growth orientation, individualism, inequality, anthropocentrism, exclusion, exploitation and even catastrophes. Doing so requires more than cultivating often-mentioned sustainability competencies and qualities such as handling complexity and ambiguity, anticipating and imagining alternative futures, taking mindful action, having empathy and agency, and so on. It also requires the capacity to disrupt and to learn from resistance to disruption. This contribution introduces and discusses transgressive learning, disruptive capacity building and pedagogies of resistance, such as learning-based counter-hegemonic responses that can unearth and uproot mechanisms of exploitation, oppression, extractivism, colonialisation and marginalisation. Transgression, disruption and resistance will inevitably lead to tensions, conflicts, controversy and discomfort, but this is where critical consciousness and spaces for fundamental change can arise. More hopeful, energising and regenerative cultures can develop when this disruptive work can be combined with participation in social movements and transition niches that provide concrete utopias and viable alternatives

Overcoming systemic dysfunction

It is increasingly recognised and accepted that the current sustainability crisis is deeply ingrained in 'Western', 'colonial' and 'modernist' mental models and the dysfunctional values and relationships (between people and between people and the planet) that they produce on a global scale, even in the most remote places. These mental models, mind-sets and ways of thinking can be characterised by their tendency towards commodification (turning public goods, nature, etc. into tradeable units that have economic value and can be consumed), reductionism (creating boundaries, distinctions, sectors and disciplines), efficiency and accountability (and associated forms of management and control) and competition (celebrating meritocracy, continuous innovation, excellence, survival of the fittest and the implicit acceptance of inequality) and growth thinking (the idea of continuous personal and economic growth).

At least from a sustainability perspective, these maladaptive and dysfunctional qualities and ways of thinking have also become subsumed by our education systems. In many schools and universities these patterns are willingly and unwillingly reproduced and amplified. In a sense, they have become part of what might be referred to as the hidden curriculum of unsustainability. Viewed as such, all education is sustainability education as no matter what is taught, enacted and experienced in our schools and universities, it will always have an impact on sustainability in either a positive or, as is mostly the case today, negative way. This realisation is pushing an increasing number of schools and universities, sometimes pressured by youth movements, to rethink the education they provide.

Sustainability as learning

Sustainability is not the final destination of an agreed product to be achieved or created by humanity, but rather a continuous search for a dynamic equilibrium that will allow all people and fellow species to live well on planet Earth without overstepping ecological boundaries. Sustainability-oriented learning can be described as an organic and relational process of continuous framing, reframing, tuning and fine-tuning, disruption and accommodation, and action and reflection, which is guided by a moral compass inspired by an ethic of care (Wals, 2019). Such learning implies or even demands a certain freedom to explore alternative paths

of development and new ways of thinking, valuing and doing. The notion of transgressive learning and disruptive capacity building is somewhat new in discourses around sustainability-oriented education (Lotz-Sisitka, et al. 2015; Wals and Peters, 2017; Chaves and Wals, 2018). It stems from the realisation that in order to move towards a more sustainable world, it is crucial to critique and transform highly resilient systems, structures and routines that are inherently unhealthy and unsustainable. The quest for a more sustainable world begs two questions: what is it that we need to sustain, in ourselves and in the world, and what is it that we need to disrupt, in ourselves and in the world? The latter question has been much ignored in education, including education for sustainable development.

Optimising what is or transitioning to what might be

Much attention is given to responsiveness, resilience and adaptation in education. After all, prevailing but problematic logic states that the world is changing rapidly and people need to keep up with the changes or they will be left behind. At first sight such logic seems sensible but upon closer inspection it becomes clear that it is, at least in part, fuelled by a neo-liberal agenda and associated economic globalisation. In education this is sometimes masked by concepts such as 21st Century Skills or, more recently, even the Sustainable Development Goals (SDGs). As an example of the latter, SDG 8 calls for 'Decent work for all and *economic growth*' (emphasis mine) and not 'Decent work for all and *a regenerative or circular economy*'. This way of framing leads to an *'optimisation frame'*: one that leaves the underlying values, principles and mechanisms that result in ongoing systemic global dysfunction untouched and, worse still, strengthens them.

Given the urgency of the planetary crisis humanity finds itself in, a crisis which has not been caused by all humans, I should add, a radical response is needed. Instead of the aforementioned optimisation frame, this response requires a 'transition frame', one that can break up maladaptive destructive structures and routines, and their associated values and principles. This dismantling is needed to open up spaces for alternatives that are healthier, more just and equitable, and indeed more sustainable. Doing so requires more than merely cultivating the often-mentioned sustainability skills and qualities, such as dealing with complexity and ambiguity, anticipating and imagining alternative futures, taking mindful action, having empathy and agency, and so on. Rather, it also requires the capacity to disrupt, to make the normal problematic, the ordinary less ordinary, to provoke and to question, to take risks for the common good, to complicate matters rather than to simplify them, to become uncomfortable – together – by asking moral questions and posing ethical dilemmas, and to learn from the 'push back' and resistance from the normalised unsustainable systems that all the above creates.

Resistance pedagogy

Transgressive learning (Lotz-Sisitka et al., 2015; Wals and Peters, 2017; Chaves and Wals, 2018), disruptive capacity building and resistance pedagogy can be characterised by learning processes and contexts/environments for learning that invite a counter-hegemonic response which unearths and uproots mechanisms of exploitation, oppression, extractivism, colonialisation and marginalisation. Resistance pedagogy allows people (e.g. teachers and students) to address injustices and forms of marginalisation and exploitation that they themselves identify, by finding forms and spaces that can oppose the authorities and normalised established systems that are responsible for their existence (Bracher, 2006). In Latin American social movements, resistance pedagogy is often linked to Freire's notion of critical education as a means of helping people "perceive critically the way they exist in the world with which and in which they find themselves" (Freire 1970, p. 64). Critical sustainability education seeks to help students become aware of the social and ecological inequalities that exist in their everyday lives and that are omnipresent in the world, both locally and globally.

Chandra Mohanty adds that resistance lies in self-conscious engagement with dominant, normative discourses and representations and the active creation of oppositional analytic and cultural spaces. She points out that resistance which is random and isolated is clearly not as effective as that which is mobilised through systemic politicised practices of teaching and learning (Mohanty, 1989).

Education as a practice of freedom

bell hooks[1] approaches resistance pedagogy differently, in a way more pedagogically, by advocating "an engaged pedagogy that can counteract the overwhelming boredom, disinterest and apathy that so often characterise the way professors and students feel about the teaching and learning experience" (hooks, 1994, p10). In *Teaching to Transgress: Education as the Practice of Freedom* (hooks, 1994), she argues that education needs to go beyond, or rather stay away from a focus on achieving prescribed levels of some kind of literacy, the development of professional skills and essentially helping students conform to the status quo. Instead she argues that education needs to nurture a reflective and critical stance towards social realities. hooks' engaged pedagogy can be considered a "transgressive" pedagogy in that deep engagement, and indeed excitement, can be viewed as potentially disruptive of the atmosphere of misguided seriousness which characterises so much learning in schools and universities (hooks, 1994). Such excitement, she argues, comes from creating a space for emergence, surprise and an environment of attentiveness to who is there and who is not there and what is happening or what needs to be happening.

While hooks recognises the severe confinements of structures, systems and routines in schools and universities, she also believes that the classroom is potentially the most radical space of possibility, change and transformation. hooks urges educators and students alike to open their minds and hearts so that they can know beyond the boundaries of what is acceptable, so that they can think and rethink, so that they can create new visions. "I celebrate teaching that enables transgressions – a movement against and beyond boundaries. It is that movement which makes education a practice of freedom" (ibid., p22).

1. bell hooks is a pseudonym for Gloria Jean Watkins who, as a writer, chose the pseudonym bell hooks in tribute to her mother and great-grandmother. She decided not to capitalise her new name in order to place the focus on her work rather than her name and on her ideas rather than her personality.

Becoming uncomfortable

Going against and beyond the boundaries of what is acceptable as a practice of freedom also requires being willing and able to leave the comforts or routines of our everyday lives, as staying within them minimises possibilities for productive resistance (Kuntz, 2020). For sustainability educators the question is then: how can we create spaces that enable learners to leave their comfort zones, to enter the not yet known and the previously deemed impossible? Kuntz advocates for philosophical inquiry as a means to open up such spaces. A first step of such inquiry is the mapping of what he calls the habitualised conventions of our everyday lives in order to "manifest entry points for differently resistive practices, built on alternative logics, extending a diversity of effects-becoming different..." (ibid., p. 26). He refers to Foucault's ethics of discomfort, which points out the transformative power of feelings of unease, especially among those in somewhat privileged positions. "To operate in terms of flows, disjunctures and dynamic relations... as a resistive practice requires a different ethical articulation; one unbound from the conventional moorings of stasis, synthesis and repetition" (ibid, p. 28). Part of the discomfort, he crucially points out, is that any claims made as a result of such work are necessarily tentative as they fail the conventional test of certainty. Yet, he continues, it is the open-ended nature of potential - what might happen - that generates resistive practice, one that refuses predetermined aspects that are extrapolated from current hegemonic conventions.

Implications for sustainability education

These insights would seem to be crucial for educators with a concern for sustainability. Kuntz ultimately identifies three elements of resistive inquiry: (1) the challenge of mapping "the convention of today"; (2) enacting resistance without being subsumed by the resisted; (3) an ethical obligation to refuse the seductions of prescribing for others even as we perhaps desire a course forward towards a differently encountered today (ibid, p. 29). Mapping the convention of today includes the essential step of being aware of one's own predispositions and the comfort they can provide, while also being mindful of their limitations, if not now then maybe in

times to come, and calls for maintaining a critical distance and navigating a fine line between holding on and being willing to let go. Again, in the words of Kuntz, it calls "for not allowing presumptions to remain lodged in totalising certainty yet not thinking them fragile enough to be overturned by contingent facts; maintaining a distant view that also addresses the nearby, or the local" (ibid, p. 30).

Foucault (2000), referring to Merleau-Ponty, points out that it is crucial "to never consent to being completely comfortable with one's own presuppositions. Never to let them fall peacefully asleep, but also never to believe that a new fact will suffice to overturn them; never to imagine that one can change them like arbitrary axioms, remembering that in order to give them the necessary mobility one must have a distant view, but also look at what is nearby and all around oneself." (Foucault, 2000, p. 448). In earlier work he had already pointed out that today the point is not so much to discover what we are, but rather to refuse what we are. "We have to imagine and to build up what we could be to get rid of this kind of political "double bind," which is the simultaneous individualisation and totalisation of modern power structures. (p. 785).

More recently, Braidotti added that we need to "detoxify our bad habits, in our way of consuming, of thinking, and of relating with others, instead entering a state of critical displacement that refuses the biased habits of thought that, through their repetition, maintain the exploitative and violent relations of "today."" (Braidotti, 2019a). The zig-zagging between local-global, past-present-future and what is and what might be, "affords a critical relation to one's situatedness, a type of resistive dislocation through philosophical engagement with our contemporary moment. Through inquiry we might provoke the detoxifying distance necessary to map the circumstances of our moment that, in turn, animate the injustices of which we are a part" (Braidotti, 2019b, 161).

Doing so won't be possible without disruption and will inevitably lead to tensions, conflicts, controversy and discomfort, but it is therein where critical consciousness and spaces for fundamental change can arise (Wals, 2021). When this disruptive work can be combined with participation in social movements and transition niches that provide concrete utopias and viable alternatives, more hopeful, energising and regenerative cultures (Wahl, 2016) can unfold.

Resistance pedagogy and transgressive learning in practice

Earlier I wrote that in order to engage students and staff meaningfully in the great sustainability challenges of our time, our schools and universities need to be: *relevant* in terms of connecting with the life-world, the community and the issues that matter, *responsive* in terms of being capable of dealing with continuous change, emergence and surprise, *responsible* in terms of being aware of the values that individuals, schools, structures, etc. amplify, ignore or silence, *re-imaginative* in terms of engaging learners in imagining and creating viable and energising alternative futures, *relational* in terms of establishing deeper connections with people, non-humans, matter/materials and places, and, finally, *reflexive* in that a healthy community is a learning community which also implies that sustainability is a continuous search rather than a destination (Wals, 2019). This chapter adds another 'r': for resistance.

There is a whole range of hopeful and generative practices emerging around the world; from student-led transformations in higher education, to citizen-led transformation of urban green spaces, to sustainability-minded activist scientists engaging in transformation of energy, water and food systems, to school communities trying to green their schools and curricula in meaningful ways, to circular economists beginning to challenge some of the fundamentals that underlie capitalism. Many of these practices are transgressive in that they go against forces and normalised routines and systems that push a future pre-determined and pre-scribed by others that, from a sustainability point of view, is highly problematic. By inviting diversity and dissonance, and utilising multiple ways of knowing and being in the world, sustainability-oriented ecologies of learning can play an important role in co-creating the knowledge and wisdom needed to live more lightly, meaningfully, equitably and healthily on the Earth, while being mindful of the intrinsic values of all that is around us.

One example of resistance pedagogy in action might be T-Labs (www.transgressivelearning.org). While T-labs exist in many forms and articulations, they have a number of key elements in common in that they typically:

- depart from existential concerns and questions regarding the socio-ecological wellbeing of people and the planet, that are rooted in specific people and places but always nested in a bigger world;
- involve and invite multiple perspectives and vantage points that can help all affected by these concerns and questions develop a deeper, more integrative and systemic understanding of what is at stake;
- recognise, utilise and combine multiple ways of knowing (scientific, experiential, local and indigenous) and multiple methods of co-creating interventions that might lead to a resolution or improvement of the situation (including cartographic mapping, trans-sectional walks (Box 1) and backcasting);

Box 1: Trans-sectional walks as a way into critical sustainability education

The transformative and transgressive potential of place-based, localised and 'rooted' education is often neglected. Trans-sectional walks provide an excellent entry point for becoming more attentive and conscious of how sustainability or a lack thereof is manifested in the places where we live.

Small groups of students, ideally with different backgrounds, walk towards a pre-identified destination that can be reached within 20 minutes or so. Each group has its own destination to make sure that there is also some variation in the walks. On their way to the destination they are to identify something that to them represents 'unsustainability'. They will likely stumble upon more than one thing or activity but need to agree on one that they wish to share with the wider group. The identifying of what they deem to be unsustainable and the prioritising of what to share with the others, leads to both attentiveness and deeper conversations informed by students' own perceptions and predispositions. Each group takes a picture of what they finally agree to share and sends it by phone to the teacher waiting in the classroom for the images to come in. On the way back to the university, the students do the same thing, but this time they are to look for signs of sustainability.

Back in the classroom, the teacher will have collected all the images provided by all the groups representing the 'unsustainable' and the 'sustainable'. Each group briefly elaborates on their choices and all the others can ask questions. Discussions reveal the ambiguous and wicked nature of sustainability, the boundaries that can or should (not) be drawn, and provide a way into the ethical, habitual and systemic elements of (un)sustainability, especially when questions are asked about how these 'local' issues are nested in larger global issues. Trans-sectional walks are often a starting point for identifying issues that can be explored in more depth during the remainder of the course. What to look for during such walks can vary. One might also ask students, for instance, to look for signs of empathy or a lack thereof.

- pay attention to the development of knowledge and understanding but also to the socio-emotional well-being and agency of those involved;
- are explicitly normative in that they work towards a more just society that allows people to live more equitably without compromising planetary boundaries;
- do not shy away from problematising the conventional and the "normal" by resisting and disrupting systems and structures that willingly or unwillingly work against socio-ecological justice;
- seek to move beyond analysis and critique by looking to change and transform socio-ecological practices and the systems of structures that affect these practices;
- consider the quest for socio-ecological justice to be an iterative and emergent process that requires continuous experimentation, monitoring and evaluation to allow for frequent recalibration of what socio-ecological justice entails and what needs to be done to achieve it.

Although not necessarily rooted in resistance pedagogy, examples of such forms of transgressive learning, thus far usually outside or on the edges of universities, can often be found in loose intentional networks like the Youth Climate Strike movement, Extinction Rebellion or Fridays for Future, but also in intentional communities seeking to go off-the-grid by creating more localised sustainable energy cooperatives, food systems and

green urban renewal. Often these initiatives allow for community-building and socio-emotional engagement in the issues alongside critical investigation of facts and myths, as well as the use of arts-based and imaginative processes that lead to creative and hopeful alternative practices and possibilities. The current transition niches and social movements in which they are often anchored represent a great opportunity for higher education, as they provide living laboratories for counter-hegemonic education. Fortunately there has been a surge of initiatives, practices, tools and methods that recognise both the urgency of our planetary crisis and the fact that forms of resistance and transgression make both pedagogical and existential sense[(2)]. A key challenge for universities seeking to contribute to a more sustainable world is to connect their education and research to these niches and movements.

Resources

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2. Some principles, tools and examples can be found here: www.transgressivelearning.org;
https://www.sustainableplaceshaping.net/arts-based-toolkit/;
https://www.wur.nl/en/show/71-Visions-on-our-role-in-social-environmental-transformative-change.htm;
https://ecoversities.org/

Learning from Process Ecology to transform Higher Education in the Anthropocene

Anne Snick and Raad Sharar

Abstract

Current crises such as mass species loss, 400 ppm greenhouse gasses in the atmosphere, and the massive disruption of wildlife by human overpopulation are unprecedented in history, making it impossible to learn from the past about how to sustain life in the future. Moreover, these disruptions are brought forth by human behaviour, especially the Western model of development that colonialism has imposed worldwide. Universities played a crucial role in fuelling this development. They emerged in Medieval times, embracing a mechanistic (Newtonian) and separatist (Cartesian) ontology and embedding it in their architecture, separating natural sciences from humanities, ignoring the dynamic interconnection between subsystems, and marginalising holistic types of knowledge. Today's crises are anomalies revealing that this paradigm is maladapted to the autocatalytic, non-linear reality of life on Earth. Higher education focuses on transferring discipline-based knowledge, hindering the emergence of more holistic approaches. However, HEIs can adapt by learning how to advance a life-supporting, responsible paradigm from natural ecosystems. HEIs must become ecosystems for the co-creation of knowledge aligned with life and create open spaces for transdisciplinary learning, including non-academic perspectives and pursuing a vision of a regenerative, decolonised world. This can be done rapidly by complementing existing curricula with learner-driven programmes using a complexity-based, transdisciplinary framework. Teams of students are currently testing this approach, and the results are promising. However, HE policies are needed to allow this transition to scale rapidly.

Introduction: context & justification

Current crises are unprecedented in history, making it impossible to learn from the past how to sustain life in the future. Moreover, these disruptions are brought forth by human behaviour, especially by the Western model of development that colonialism has imposed worldwide.

Universities have played a crucial role in this development. Academic institutions were shaped in the 17th century, embracing a mechanistic (Newtonian) and separatist (Cartesian) ontology and embedding it in their architecture, thereby ignoring the dynamic interdependencies between more-than-human and human subsystems. Consequently, Higher Education (HE) focuses on transmitting discipline-based knowledge and rational approaches while marginalising more holistic and whole-person ways of learning.

Today's crises are anomalies revealing that this paradigm is misaligned with reality and undermines the prospects of future generations. **The concepts of knowledge (research) and learning (education) have to be radically recalibrated for HE to become a sustainable practice.** This article proposes that HE can shift towards a life-enhancing paradigm by learning from thriving natural ecosystems.

The text first explains the ontological context of the Anthropocene and elucidates why **the mechanistic and separatist epistemology that prevailed during the Holocene no longer suffices to make sense of today's complex reality, inform responsible decisions and educate future generations.**

The article then presents a model of process ecology clarifying what makes systems sustainable; this is proven to depend on a system's capacity to maintain a balance between resilience and ascendency. This framework helps to understand why HE is so slow to adapt to societal evolutions, and to analyse how to increase its sustainability. For future citizens to learn how to navigate complexity and design responsible alternative futures, HEIs must transform into open learning ecosystems, fostering the co-creation of diverse kinds of knowledge aligned with the processes of life.

The text thirdly proposes a practical strategy for fostering the emergence of this kind of learning. By complementing existing curricula with learner-driven

programmes grounded in a complexity-based, transdisciplinary framework, swift adaptation is possible. This 'bifocal' approach also allows the pitfalls of both anti-scientism and 'greenwashing' to be avoided. We illustrate this with a programme that teams of students are currently testing at KU Leuven, and with a vignette written by one of the learners involved.

Next, the article offers some critical reflections on this approach, discussing its potential (lack of) impact and its capacity for scaling and spreading to different parts of the world. This too is illustrated by means of a vignette presenting a learner-driven initiative in the Global South.

In conclusion, some recommendations are formulated about what learners, universities and societal decision-makers can do to make this scale rapidly.

1. Why change education? Diagnosis of our time

Due to economic globalisation, human actions today have an impact on Earth's geophysical processes. Human expansionism has shifted the Earth from the exceptional stability of the Holocene (the era starting some 12,000 years ago, allowing humans to settle and build civilisations) towards the unstable conditions of what scientists call the Anthropocene. The unlimited pursuit of economic growth, massive use of fossil fuels and unrestrained extraction of natural resources result in a depletion and pollution of natural ecosystems and an unstable climate with more extreme weather patterns. Phenomena like mass species loss, 400 ppm greenhouse gasses in the atmosphere and decimation of wild nature by expanding human populations are unseen in human history, and no one knows how life can evolve in such conditions. The Western techno-industrial system is founded on ancient cultural beliefs that humans are separate from and superior to the rest of nature, and that humankind is entitled to own, alter and exploit the planet (Crist, 2019; Lent, 2017).

Universities have played a crucial role in propagating this human-centric approach to nature. They took shape in late Medieval times, when a mechanistic (Newton) and separatist (Descartes) worldview prevailed, opposing the human species (the 'subject' of science) and other living or non-living beings (the 'object'), and reducing the planet to a (supposedly endless) stock of resources for unrestrained human use (Prigogine & Stengers, 2017). Natural exploitation brought unseen wealth for some people, whereas increased agricultural productivity contributed to unprecedented population growth. These 'successes' reinforced the belief in this paradigm, obscuring its long-term effects; they seemingly justified the marginalisation of indigenous and traditional epistemologies that define humans as part of nature and call for reciprocity, restraint and respect when dealing with the Earth (Mignolo & Walsh, 2018). In line with the Western view of 'progress', education is narrowed down to transmitting knowledge and pursuing technological control of life. Learning is then the task of teachers passing on their (specialist) knowledge to (unknowing) students. The human-centric ontology and separatist paradigm thus became institutionally embedded and is reproduced implicitly and non-reflexively throughout HE. Students and young researchers are mainly evaluated on their capacity to reproduce and develop specialist scientific insights or technologies. Other human faculties (such as creativity, empathy or cooperation) are neglected, just as other perspectives on nature (such as considering its beauty or spiritual meaning) are deemed irrelevant to progress.

Current global crises can be seen as anomalies (Kuhn, 1962) revealing that the mechanistic and separatist epistemology is not aligned with the planetary dynamics life depends on. Consequently, education can no longer be conceived as the 'reproduction of culture', since that paradoxically decreases the perspectives of younger generations. Today, many sciences are starting to understand that species (including humans) co-evolve interdependently. Humans depend for their health on the microbiome that their body hosts; soils and food systems depend on the intricate collaboration between countless species; the climate takes shape in the dynamic interplay of diverse planetary spheres (Chapman, 2015; Goel et al., 2021; Sheldrake, 2020). These insights reveal that humans are not separate from and in control of nature, but are entangled in complex co-evolutionary processes. Unlearning the ancient anthropocentric ideology and learning to 'land on earth again' (Latour, 2017) is a crucial dimension of the educational transition. Decolonising universities and acknowledging the value of indigenous knowledge takes courage, since the colonial model of 'progress' is part of how Western academics define themselves and changing one's identity at will is quasi impossible. Learning implies not just acquiring knowledge, but also dealing with fear, denial and resistance in the face of the current crises and the loss of familiar identities. It implies learning to 'make sense of life' again by aligning ourselves with the complex and uncontrollable dynamics of life and by embracing all kinds of knowledge that can be helpful in making sense of the Anthropocene.

For several decades, the need for educational transformation has been recognised (Renn, 2020). However, even after forty years of education for sustainable development (ESD), mainstream curricula still convey the traditional worldview, at best pursuing incremental improvements like 'green' or 'circular' growth (Sterling, 2021). Higher Education is locked into the mechanistic paradigm by its very architecture (faculties as ivory towers disconnected from each other, nature and society), but also by its funding, publishing and evaluation mechanisms, etc. Efforts at educational transformation mostly focus on changing the curriculum, i.e. on entrusting teachers with the task of imparting new knowledge to students, yet without questioning the underlying pedagogy of 'knowledge transmission' and 'cultural reproduction'. **Education for sustainable development often consists of transmitting facts about how humans overshoot the planet while failing to propose alternative (sustainable) pathways; it also often focuses on a change in one (technological) dimension while still (implicitly) embracing the economic growth ideology and the anthropocentric ontology.**

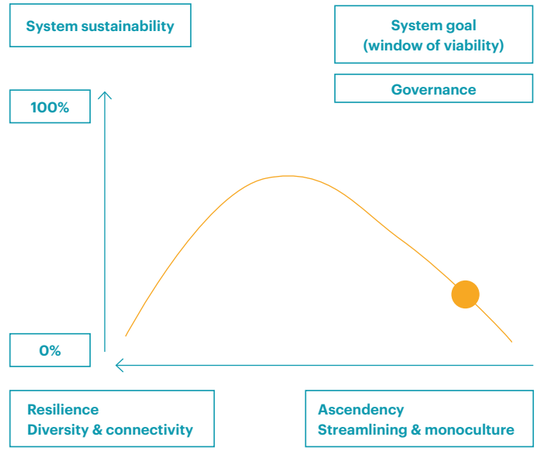
HE's mainstream paradigm is unfit to make sense of today's complex reality and to prepare youth for a future that cannot be a continuation of the past. Many young people are aware of this; they distrust education and take to the streets to call for change. Some of their peers do not want to hear about sustainability-related issues, because it depresses them (Thomas, 2014). Many academics embrace the eco-modernist belief that technology can save the planet, ignoring the fact that technology becomes political as soon as it is used and therefore requires a preliminary ethical and societal reflection (Owen et al., 2021; Symons & Karlsson, 2018). **The pedagogical transition therefore requires a shift both in the contents of education (from a mechanistic and anthropocentric to a complexity-based and ecocentric worldview) and in the pedagogical relation (enabling young people to learn how to co-evolve with the rest of nature). Universities, however, are not designed for such learning. The question is therefore what models and strategies can allow the HE system to transform and adapt.**

2. A framework for HE transformation

The future cannot be an extrapolation of the past but requires a deep transformation of how we define our relationship with nature, aligning ourselves again with the dynamics that govern life. The approach proposed here builds on insights into sustainable ecosystems revealed by process ecology, a scientific model used to study the organisation of complex flows of energy and nutrients within (natural and technical) ecosystems (Goerner et al., 2009; Lietaer et al., 2012; Ulanowicz et al., 2009). Systems end up being sustainable when they achieve a balance between two opposing characteristics: ascendency and resilience (see figure 1).

Ascendency is the capacity to channel activity along the most efficient pathway by streamlining processes and eliminating superfluous pathways. Monocultures, for example, are extremely efficient ways to grow plants. However, pursuing maximum ascendency means decreasing the number of alternative pathways that can take over the system's vital activities if the usual processes falter; monocultures therefore score low on sustainability. A single disease or storm can destroy entire crops and once the system passes critical 'points of no return', it may collapse (the red dot on figure 1).

Figure 1: Process Ecology Sustainability Curve.



Source: author's adaptation from *Lietaer et al.* (2012).

Because of those inevitable changes or disruptions in the context (or 'landscape pressures'), systems also need a degree of resilience, i.e. the capacity to create redundant (inefficient) pathways that can keep the system functioning in the event of a crisis. A farm may survive a storm or drought by growing diverse plants with varying harvesting dates and complementary ecosystem functions. Nevertheless, in an ecosystem only consisting of tiny niches competing for resources (i.e. with high resilience and little efficiency), the energy gets dissipated and the system stagnates (resulting in low sustainability). This curve explains why agro-ecological and indigenous farming are sustainable: they select combinations of diverse crops (resilience), allowing maximum productivity on a given surface (ascendency), growing plants that optimally share light, water and nutrients while feeding nutrients back into the soil (Kimmerer, 2013).

Sustainable systems keep both parameters in balance, and in multiple habitats and environments, they show a surprising consistency in their degrees of ascendency at around 40% (Ulanowicz, 2016). Resilience is often misunderstood as the system's capacity to return to its former state (and 'sustain' established patterns, which in fact increases their ascendency and may weaken their sustainability). In dynamic systems, resilience means the capacity to establish innovative and efficient pathways towards a new balance, pursuing long-term co-evolution.

"Governance" in this context refers to mechanisms maintaining (or restoring) the balance between (resilient) free creativity and (ascendant) mainstreamed order at optimal levels. It regulates the system by adjusting its processes in response to context changes. For example, a thermostat adjusts flows (by closing or opening valves) in response to fluctuating ambient temperatures. The correcting feedback has to kick in before the system is too far removed from its goal (e.g. the desired temperature), thus keeping it within a 'window of viability' (e.g. a pleasant temperature range). Governing should happen close to the system, so that feedback can kick in rapidly. Bottom-up (niche) alternatives that 'think outside the box' reveal the resilience of a system; however, to increase the sustainability of the system they also need top-down support (ascendant measures) allowing them to become embedded in a new regime (Chapman, 2015; Geels & Schot, 2007).

This framework helps to understand the current functioning of and possible alternatives for HE. A decisive factor is the goal the system pursues (Meadows, 2008). If a society pursues economic growth, it no longer treats its economic-financial subsystem as a means of achieving societal goals (e.g. community wellbeing and ecosystem health), but treats it as a goal in itself, reducing people and the planet to 'resources' (or means) for financial growth (Snick, 2021). Mainstream education today aims to develop the necessary competencies for young people to become productive in a competitive economy based on the unlimited exploitation of natural resources. Current crises reveal that this framing of education undermines humanity's future; transforming HE therefore requires a new vision of what human progress and development involves, based upon new values and attitudes towards nature. However, university curricula focus on scientific facts, not on co-creating visions of desirable futures. Ethics is a discipline in itself, with its own jargon and specialist literature. As such it is mostly treated as an add-on to other sciences in the curriculum, rather than a preliminary, fundamental reflection on the meaningfulness or desirability of technological advancements or economic growth, or the conditions under which they can contribute to a dignified human life on Earth (Owen et al., 2021).

The strong institutionalisation of academia makes it rank very high on ascendency but low on resilience; it is hard to 'reform' a system that is deeply embedded in careers, identities, buildings, funding mechanisms, evaluation systems and legislation. Moreover, HE is the gatekeeper for the education of future generations; it holds a quasi-monopoly on issuing validated diplomas and certificates. Universities in the Global North increasingly function with the same business model as economic corporations, which means that financial parameters become dominant and influence the goal academia pursues (Ezeanya-Esiobu, 2019).

In spite of scientific reports that time is running out before ecosystem degradation reaches critical tipping points, HE remains locked in to business as usual, still preparing young people for a model that is proven to be unsustainable. The last few decades have seen many calls to reform HE; however, a shift in its mainstream models and practices has still not been achieved. A wealth of inspiring niche innovations is emerging inside and outside of academia, but these remain side-branches or optional courses and are far from becoming the 'new normal' (Tesconi, 2019). Since teachers' careers depend on their adherence to the paradigm, they are discouraged from exploring resilient alternatives. Governance is more geared towards reinforcing the existing (specialist) paradigm than towards reinforcing emerging (niche) alternative pathways. Universities in all continents are striving to catch up with the standards of Western academia, thus reproducing its anthropocentric worldview and epistemology. Consequently, alternative epistemologies such as indigenous knowledge, regenerative economics or ecofeminism – crucial sources of resilience – are further marginalised, producing the academic equivalent of a monoculture (Mignolo & Walsh, 2018; Taleb, 2014). What is framed as 'development and progress' thus paradoxically entails the loss of knowledge and a decrease in alternative pathways in the face of potentially catastrophic anomalies.

3. A bifocal strategy for transforming HE

In the light of this diagnosis, the most promising strategy for transforming HE is to focus on niche innovations (offering resilient pathways) that have potential for rapid scaling (acquiring ascendency). The following SWOT-analysis of the current HE context can shed a light on available pathways.

The weakness of the HE system is its adherence to an anthropocentric and separatist worldview, its extractivist economic model, and its strong institutionalisation in concepts, identities, buildings and regulations. Combined with the colonial undercurrent of economic globalisation, this model continuously spreads and increases its ascendency, in spite of scientific consensus that this entails the risk of catastrophe and collapse. Most efforts at making HE more sustainable focus on transforming the curriculum (Moreso & Casadesús, 2017); however, the lack of success in doing so over recent decades is a clear indicator that curricula do not offer sites of resilience.

An undeniable strength is the fact that young generations no longer accept the dominant education system and are demanding a shift. Youth movements (such as Students Organising for Sustainability International, Fridays for Future and Extinction Rebellion) are well organised and highly engaged; they call attention to scientific insights into the anomalies of the current paradigm and their voices are increasingly heard by people in political and economic decision-making. They are organised in decentralised ways, using online platforms to access information and knowledge and mobilise their peers, allowing them to scale rapidly.

The threat present in the current system is the shrinking window of opportunity for avoiding catastrophic tipping points. The recent IPCC report is seen as a 'code red for humanity', since it indicates that humanity has only a few years left to radically shift the system (Masson-Delmotte et al., 2021). The longer society waits to adapt, the higher the probability it will have to deal not just with complex problems, but with chaotic ones, including floods, pandemics, mass migration, forest fires, etc. In the face of chaotic crisis, the most important aim is to restore order (often requiring authoritarian measures, such as lockdowns), which is an inadequate context for outside-the-box thinking and adapting to complexity (Snowden & Goh, 2020).

Opportunities are twofold. Firstly, there is a growing consensus among policymakers that a new model of development is needed. Agenda 2030, with its 17 Sustainable Development Goals (SDGs), was approved by more than 178 countries. A caveat, however, is that given the separatist knowledge model, the SDGs are currently often approached as a list of disconnected goals, ignoring the effects the pursuit of one goal may have on other ones. However, if approached as an interconnected agenda, the SDGs may become a driver for a more systemic and holistic approach to research and education (Snick, 2020).

Secondly, a movement of social innovation is emerging, initiated by societal players breaking away from the extractive, individualistic and colonial ideology that dominates academia. For example, policymakers encourage cities or regions to practise Responsible Research and Innovation or embrace doughnut economics, entrepreneurs explore regenerative business models, civil society movements pursue community wellbeing and design local currencies to serve their goals, indigenous people organise to reclaim a pluriverse of epistemologies, etc. (Fritsch et al., 2021; Hansen et al., 2020; Mignolo & Walsh, 2018). These innovations offer living laboratories to explore alternatives, sites of societal resilience which can serve as 'classrooms' for learning about sustainable pathways.

In the light of this SWOT-analysis, **the most promising strategy for innovating HE appears to be shifting the focus from teacher-driven curriculum reform towards learner-driven transdisciplinary programmes.** This

approach does not criticise or alter discipline-based teaching, but provides an additional focus. It takes place in complementary learning spaces where learners from various (disciplinary, cultural and social) backgrounds are encouraged to look at current issues from divergent perspectives, deal with the emotions the societal crisis evokes, unlearn the ecocentric ideology and learn to embrace a radically new, ecocentric vision of what it means to be human in relation to the rest of nature. This model of learning uses the knowledge from various disciplines and from emerging social innovators to explore and experience a new vision for society and to co-create insights into what pathways could help communities to move in that direction.

Over the last couple of years, teams of learners (students and coaches) at KU Leuven (Belgium) have experimented with this approach, and the outlines of its new pedagogy have gradually become visible. The basic assumption is no longer that nature functions as a mechanistic system which humans can dismantle, improve or control; rather, the complexity and non-linearity of natural processes is accepted as the planetary context humans must learn to navigate with humility (Grancitelli et al., 2020; Smeers et al., 2020).

- Complexity means that no single discipline or scientific model can reveal the 'truth' about the world; in order to make sense of reality, learners are encouraged to look at it from as many angles as possible, integrating academic with traditional, experiential or artistic approaches, and including the perspective of more-than-human beings (Crist, 2019).
- Non-linearity means the future cannot be extrapolated from ('data' about) the past (Hossenfelder, 2018; Jasanoff, 2018; Rouvroy, 2012), but depends on humans proceeding in a more responsible way, treating nature with restraint, respect and reciprocity, and adapting their demands to what the ecosystem really has to offer (Bendell, 2020). Co-evolution is influenced as much by the narratives humans use to find meaning in the world as by the technological and economic processes they deploy to achieve that worldview (Snick, 2020). These narratives and technologies in turn affect the biophysical processes (increased entropy and depletion), which specialists respond to by doing 'more of the same' (deploying even more pervasive technologies in a linear view of progress). Non-linearity, however, requires considering the role of narratives (e.g. 'progress' or 'wellbeing') as well as technologies in restoring the balance between humans and the rest of nature.
- Experiential learning – for example via immersive activities, field trips or service learning – lets learners envision and get inspired by alternative practices; this cannot be achieved by transmitting facts and figures, but requires 'leaving the ivory tower' and learning with the head, heart, hands and hope. In times of Covid these 'live' field trips may have to be replaced by watching documentaries about regenerative practices (Dion & Laurent, 2015; Tickell & Harrell Tickell, 2020).
- Learners work together and in dialogue with innovative societal players who share the goal of a sustainable world; this mutual learning culminates when they co-design a concrete proposal for an alternative approach to a topic of their choice. They thus unlearn the dominant premise that an 'expert' first has to reveal the truth about (the future of) the world to then disseminate this knowledge for society to 'implement'. Rather, they understand at a deep level that what the future will look like depends on the values they embrace, the choices they make, the innovative pathways they co-create, and the (financial and other) technologies they use. They also understand that what counts is not so much the specific 'product' they design, but mainly the co-creative and transdisciplinary learning process they embark on. Once the process is 'understood', it can be used again and again to learn and redesign practices in various domains.
- A distinctive feature of this approach is that the notion of 'learners' is not identical to 'students', but also includes facilitators and other (regenerative) societal players. The 'learner-driven' concept highlights that this kind of programme is not 'expertise-driven', but enables mutual learning about how to adapt to life. This is not primarily a matter of revealing and transmitting knowledge, but mainly one of taking responsibility and mustering the moral courage and creativity to think outside the box, take part in co-designing a radically regenerative future, and accepting that (academia in) the Global North has a lot to learn from the indigenous people it so long treated as 'primitive' or 'underdeveloped' (Goel et al., 2021; Snick, 2020).

Based on that methodological framework, and depending on the specific capacities of local HEIs, a variety of concrete programmes is possible, ranging from a week-long summer school to extra-curricular programmes lasting one or more years. However, in order for this approach to scale rapidly, it is crucial for learners to be empowered and encouraged to coach their peers in this kind of learning process. At KU Leuven, one of the HEIs where this approach is being prototyped and tested, the programme started (in 2019-20) with one team consisting of three students and a coach. In the second year (2020-21), learners from the first-year project coached two new teams of eight learners, working on different challenges while using the same complexity-based, transdisciplinary and co-creative framework. In the third year (2021-22), nine of the learners from the second iteration are engaged in coaching three new teams; this shows the potential of this approach to spread rapidly if the right conditions are created.

The following vignette describes the experiences of a learner (Raad) who participated in the second iteration of the program at KU Leuven, coached by participants from the first iteration of the programme.

Raad: Vignette 1

I have been studying anthropology for about six years, first on a bachelor's degree at BRAC University in Bangladesh and then on a master's degree from KU Leuven, Belgium. Anthropology is in essence a study of people, cultures and societies; a study of the anthropogenic fabrics of the world. Yet a surprisingly large part of my educational experience has been based inside classrooms reading early works of social thinkers and then sitting for rigid exams based explicitly on these readings. This was my first point of frustration. How could such a people-centric discipline be taught in a way that was so detached from real people and their experiences? Societies and people are ever evolving. How is it that the works of armchair anthropologists and social thinkers from centuries ago still demand so much attention in the current curriculum? Even the prescribed articles and books were written in a alanguage that was not easy to read, making anthropology as a discipline only accessible to academics. This was my second point of frustration. A discipline learning about people and making breakthroughs in research that has the potential to contribute tremendously to social change should be more easily accessible to a wider public.

We learnt about the Anthropocene and read authors like Bruno Latour (Latour, 2000), who has championed collaboration between the natural and social sciences. However, the practical aspect of his teachings is sadly missing from coursework and is only available to students who opt to pursue research on this subject in particular.

I was confronted with a completely different level of frustration when I started my master's degree in Social and Cultural Anthropology at KU Leuven (Belgium). While the above-mentioned problems remained, here I was further troubled by the colonial aspect of the discipline. Even though the students came from diverse cultural backgrounds, it still remained an environment where dialogue between student and teacher was limited. It felt like a lost opportunity, since decolonisation could be achieved by welcoming the active contribution of students from formerly colonised backgrounds, co-creating with us and allowing our own experiences and knowledge to be taken into account in the learning process.

These frustrations led me to join a learner-driven programme that aimed to explore how Science, Technology, Engineering and Mathematics should adapt to the complexity of the Anthropocene (called 'STEAM+'). The first overwhelmingly interesting aspect of this programme was the fact that our team was multidisciplinary. Secondly, the challenge was multifaceted and relevant to scenarios for the current world. As an anthropologist looking for a different, more inclusive approach to education, this programme instantly 'ticked all the boxes'.

The programme opened my mind to the innovative ways education can really work. It showed me various pedagogical methods in which classrooms become redundant and people can learn in a more holistic and dynamic way, from their environments and each other, and co-create solutions

to problems in a more inclusive and sustainable manner. As part of our challenge, my team created a board game addressing one aspect of the climate change reality plaguing the world today: the suffering of the oceans. We learnt as a team, drawing from the diverse backgrounds, experiences and knowledge of each team member. We settled on creating a learning game, hoping this could be used as a tool to learn about ocean problems and ways in which those problems can be solved. We designed the game in a way that would hopefully get the players engaged in creating solutions and not just learn about the issue as an abstract faraway event with no direct relevance to their lives. The game helped players really feel the need to care about the current plight of oceans as they played, instead of having an "expert" dictate that need solely through facts and logic. It was at this point that I finally saw the collaboration of natural and social sciences come to fruition; something I had previously only seen as a possibility in classrooms. It was also at this point that I saw a completely different and unorthodox way education could really work; a way that was learner driven and broke away from the mainstream pathway of education systems. What the game helped me to understand was that learning is simple and uncomplicated, and can be taken from literally anywhere. My experience with the programme took me back to the essence of what education should look like: inclusivity and co-creation, foregoing the fact that there is any hierarchy to knowledge.

4. Reflections on governance

The learners' reactions on how this programme affects their lives are very positive (Grancitelli et al., 2020; Smeers et al., 2020). Moreover, since it does not aim to reform the curriculum, but constitutes a complementary, extra-curricular educational space designed for learning in current Anthropocene conditions, it avoids the pitfall of (being perceived as) anti-scientism. This programme does not criticise or attack specialist knowledge transfer that focuses on deterministic parts of reality, as this knowledge and the technologies it produces may be crucial for adapting to the new planetary reality. However, transdisciplinary learning complements traditional curricula with a supplementary kind of learning, in which the focus is on complex, non-linear interactions between various (human and natural) subsystems (Chapman, 2015; Prigogine & Stengers, 2017). To use a metaphor, transdisciplinary learning can be compared to bifocal glasses, allowing the small-scale perspective to be seen as a constituent part of the larger, more complex picture.

In light of the analytical framework proposed here (see figure 1), some critical reflections concerning the sustainability of this bifocal approach to HE can be made.

Under what conditions can a bottom-up (learner-driven) approach acquire sufficient ascendency to impact the entire HE system? Bottom-up approaches are often depicted as local and small-scale, and the question concerning their potential for shifting the system as a whole is pertinent in light of the shrinking window of opportunity for avoiding catastrophe. As the vignette illustrates, this type of programme clearly motivates learners who are already questioning the validity of a traditional, discipline-based and teacher-driven pedagogy. However, not all students share this perspective (Symons & Karlsson, 2018; Thomas, 2014).

A related concern is whether a bottom-up, extra-curricular approach is not utterly powerless in a context where (mandatory) curricula continue to reproduce the models and worldviews of the 19th century. The strength of the bifocal approach (offering a curricular, teacher-driven education in combination with a transdisciplinary, learner-driven pedagogy) shifts the impact the curriculum has on learners. To illustrate this, some three weeks into the programme, one of the learners at KU Leuven reported that what he learnt in the transdisciplinary programme allowed him to take a critical stance towards his professors' teachings. If it is impossible to make the teachers (as 'senders') change their message, a powerful solution is to empower learners (as 'receivers') to critically evaluate the message against their shared understanding of complexity, non-linearity and ecocentrism. The students know they have to 'reproduce' what the professors tell them in order to get their diploma, yet they do not let this distort their vision of a sustainable future. Having a space where they can discuss and exchange among themselves (with no professors around) appears to be a crucial

condition for this empowerment to emerge (Smeers et al., 2020). One problem is that the academic infrastructure does little to encourage this mutual learning, both by providing hardly any spaces for it (all faculties being equipped with auditoriums built for one-way communication) and by valuing (with credits or diplomas) only disciplinary learning. For HE to become a sustainable ecosystem of learning (rather than a monoculture of teaching), the governance mechanisms need to shift their focus. Process ecology reveals that 60% of transactions (learning activities) should focus on resilient, outside-the-box learning. Even if learners can 'reclaim education' in a bottom-up way, the HE governance bodies have to take responsibility for making this scale rapidly.

For bottom-up learning to have a significant influence on HE as a system, governance measures in support of them (i.e. increasing their ascendency) are needed. This kind of transdisciplinary programme does not require huge financial investments (no new laboratories have to be built), but can only scale rapidly if institutional leverages are put in place. Learners who engage in this kind of programme can receive credits or some other kind of certification. Learners who coach their peers should be supported to build their own community and coordinate among themselves. A similar development can be found in the global movement of Green Offices. These are a bottom-up movement of students active in 'greening the campus', and many of them receive some kind of structural support from their HE institution. This kind of support could also be given to bottom-up programmes for 'greening the learning'. Since relevant learning also takes place while engaging in a Green Office, some HEIs may consider giving a certificate to students active in them; similarly, participation in a transdisciplinary programme should be validated. Participation and coaching in a transdisciplinary programme could be encouraged by including it as a criterion for Ph.D. students applying for a student mobility programme (such as, for example, the European Universities Initiative (European Commission, 2018).

1. Find more information on the website Ecoversities | reclaimingknowledges, relationships and imaginations. https://ecoversities.
2. Find more information on the website An introduction to the Global Tapestry of Alternatives (GTA). https://globaltapestryofalternatives.org/introduction (GTA, n.d.)
3. Find more information on the website Learning Planet. (n.d.) https://www.learning-planet.org/en

Interestingly, one of the students from the first year at KU Leuven reported that when she applied for a job, the company was more interested in her participation in the transdisciplinary programme than in her master's degree; companies are confronted with the increasing complexity of the world (more than academic staff) and are looking for workers that know how to navigate complexity or align the company with policy frameworks like the European Green Deal or the UN Agenda 2030. The adoption of such policies indeed creates opportunities for shifting the HE system: if, for example, the European Commission understands that achieving its aims requires a radically different kind of learning than what business schools and universities provide, it can reflect on what leverages it should put in place to upscale learner-driven programmes. Networks like GUNi can support demands for policies and other governance measures in support of learner-driven programmes.

A last concern is the potential for this kind of learning to spread across the globe and be accessible to learners in most of the world. A complicating factor is that 'development policies' continue to reproduce the Western (anthropocentric, specialist-driven) pedagogy, and that (in pursuit of SDG4 - 'education for all') this colonial pedagogy is presented as superior. However, one of the 'strengths' identified in the SWOT is the emergence of social innovations (mostly) outside academia. A growing number of initiatives 'reclaim education' by supporting local learners and teachers to develop alternatives to the rationalist and anthropocentric pedagogies that powerful institutions impose worldwide. Examples of this include Ecoversities[1], the Global Tapestry of Alternatives[2] or Learning Planet[3]. Decolonising higher education is not only a priority for indigenous people, but learning from indigenous people about more sustainable ways to relate to nature is of vital importance to learners worldwide. The following vignette illustrates that **learner-driven initiatives can also be powerful drivers of empowerment and decolonisation in countries where access to HE is more limited.**

Raad: Vignette 2

After my bachelor's degree, I worked in the development sector in Bangladesh for about two years. I joined Nijera Kori - We Do It Ourselves, a Bangladesh-based NGO, as Programmes Officer in reporting, research and communications.

Nijera Kori is, in many ways, a unique organisation within the NGO universe in Bangladesh. The organisation focuses on the empowerment of landless rural women and men by helping them form independent landless groups and supporting them through awareness raising and capacity building initiatives which enable them to autonomously establish their rights as citizens. It was important for the organisation to emphasise the fact that the landless groups would be able to claim and establish their rights as citizens rather than as customers, consumers, beneficiaries or users. Members are empowered to take up challenges within their own spheres for a better and more meaningful life for themselves and their immediate community, and to establish their rights over the institutions that decide on the allocation of resources and services for the poor.

In the capacity building and training sessions, the landless groups were given information on agriculture, law and gender equality. Through these sessions, the group members continued to mature, developed a greater understanding of their rights and overcame gender bias, organically and systematically changing the oppressive structures of their society. A central mission of Nijera Kori was to ensure the voices and lifestyles of the landless groups were taken into account. The organisation never decides on what is beneficial for the groups. Rather, after giving the landless group general knowledge of gender norms and other social realities, the organisation encourages the landless groups to come to their own decision on how to move forward.

During my stay with the organisation, among the many projects that I have been a part of, one that stood out was the initiative the organisation took to provide football (soccer) training to young girls from a particularly patriarchal and fundamentalist area. Simply training them to play matches and encouraging them to play the game regularly taught them, alongside their parents, the importance of physical exercise for young women. This in turn helped them realise even more rights that they deserved, like the right to education, the right to proper nutrition and freedom of movement. Once these girls were empowered, they themselves went on to encourage more girls beyond their village to start playing the game, in the process bringing them the same level of empowerment.

Furthermore, Nijera Kori advocates learning through cultural activities. Throughout the year, in different parts of the country, rural men, women and children perform in several cultural events organised by the landless groups themselves. These events include cultural discussions, stage dramas, music and dance. Awareness, solutions and problems of the areas are depicted in the songs, gestures, postures and other forms of cultural representations. Frequent meetings are held among the landless groups where they discuss issues pertaining to their social obstacles and together design cultural events through which they are able to raise awareness among even more members of society. During the training and workshops, the participants compose new dramas covering issues such as women's rights; rights of agricultural workers; against fundamentalism; rights to Khasland water bodies; and people's/folk songs. This process at Nijera Kori, where they let the participants take the lead, is a true example of a learner-driven programme in the field of development sector.

As pointed out above, development policies continue to reiterate Western pedagogy and most NGOs in today's world feed into this reality. Learner-driven programmes such as those taken up by Nijera Kori, where the beneficiaries experience independence in their own decision-making and learning processes, is a crucial step towards decolonising these existing Western narratives and giving importance to indigenous and local knowledge structures instead of assuming them to be backwards.

The above example in itself shows how effective it can be to just let participants find their own ways to ameliorate their own situation. They take into account their own lived realities (unlike outsiders working in an NGO) and co-create solutions with the organisation that result in a more sustainable outcome.

5. Conclusions and recommendations

To achieve a transition towards complexity-based (transdisciplinary) and learner-driven (co-creative) HE, we no longer accept the dependent position whereby the transition has to be imposed or facilitated top-down, as this proves to be too slow a strategy. Instead, one can build on the power and motivation of youth to question the current pedagogical institutions and empower them to shift from anger to activism, while at the same time encouraging meta-resilient players (teachers, HE leadership and societal decision-makers) to join, support and reinforce this learning pathway. It is not a costly innovation (as no high-tech labs are needed), but values the expertise, creativity, visionary courage and empathy of all learners (inside and outside of academia) (Snick, 2021).

Learners are already making this approach a reality, as the transdisciplinary programmes and other co-creative platforms described above reveal. Currently, the world runs on extractive forms of living, a lifestyle leading to possible environmental collapse. Learner-driven approaches are a more inclusive form of education and can help humanity to glimpse a way out of this predicament. To that effect, universities and other educational institutions can actively support these programmes and adopt the learner-driven approach in their educational programmes, as a (bifocal) complement to existing curricula. Through their platforms, networks like GUNI can help bring this approach to a wider public, thereby making it accessible to all individuals across the globe.

Further information

To learn more about on the vision and approach of Nijera Kori:

http://nijerakori.org/

Learners and coaches involved in the learner-driven programme started at KU Leuven (Belgium) share their experiences on LinkedIn:

https://www.linkedin.com/company/young-persons-guide-to-the-future

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The contribution of South African higher education institutions to tackling exclusion and sustainability challenges

The Case of University of Johannesburg's Izindaba Zokudla project in Soweto

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Abstract

One of the most significant consequences of the Covid-19 pandemic has been the worsening of already high inequality in South Africa through a disproportionate loss of employment among low-wage workers. Higher education institutions have the potential to contribute to inclusive transformation as producers of scientific knowledge that can be deployed to help disadvantaged communities solve local development challenges. This article uses a case study of a university-community engagement project to explore how South African higher education institutions deployed knowledge exchange projects to build inclusive and sustainable smallholder farming communities. Key informant interviews indicate that government support is necessary to scale up basic community capacity to optimise knowledge exchange between the university and disadvantaged communities. Incentive structures that reward scientists' impact on the community more are also more likely to increase community engagement and strengthen local inclusivity and sustainability outcomes.

Introduction

Knowledge is a weightless production factor with the potential to serve as one of the main inputs in tackling the societal challenges confronting marginalised communities in developing countries (Jacobs et al., 2019). As specialised institutions of knowledge production, higher education institutions are expected to play a prominent role in producing relevant scientific or technological solutions to the local societal challenges facing the communities in which they are embedded (Kruss & Visser, 2017; Jacobs et al., 2019). A study conducted by the Southern African Regional Universities Association (SARUA) pointed out that during the apartheid regime, the political governance structure was strongly reflected in South African higher education systems and significantly biased the production of knowledge while hampering the distribution of benefits (Kotecha, 2012). The pervasiveness of apartheid practices in higher education institutions was primarily the result of the white apartheid government's conception of race and racial politics, which had shaped the higher education policy framework laid down in the 1980s (Bunting, 2021, p.35). This paper examines how South African higher education institutions contribute to tackling exclusion and sustainability challenges in communities in which they are anchored in the post-apartheid era.

In most developing countries, resource-poor rural communities are oftentimes those that most need to apply specialised, university-produced knowledge to address their local challenges. Their inclusion in the innovation process aimed at addressing their specific problems is therefore particularly important because it leads to better development outcomes (Arza & van Zwanenberg, 2014; Petersen et al., 2016). The mechanisms through which universities exchange newly created knowledge with industry in collaborative and commercial transactions (e.g. Etzkowitz, 2002; Chakrabarti and Rice, 2003; Niosi, 2006; Perkmann & Walsh, 2009; Ankrah & Omar, 2015; etc.) or engage with external stakeholders with adequate financial, intellectual and managerial resources to absorb academic knowledge have received considerable academic coverage in literature on university-industry collaboration and community engagement (see Perkmann & Walsh, 2007; 2008; Perkmann et al., 2013; or Kruss & Visser, 2017 for an overview). Collaboration in research and innovation between universities, the private sector and the public sector, in the so-called triple helix, has therefore become a new distinctive approach towards leveraging innovation efforts (Etzkowitz & Leydesdorff, 1995; Leydesdorff & Etzkowitz, 1998; Lawton Smith & Leydesdorff,

2014). The U.S. innovation landscape, for example, has seen a veritable mushrooming of university-government-industry collaborations in the form of cooperative research centres (CRCs) that seek to provide organisational solutions to the challenge of cooperation in science and technological innovation (Wessner, 2013). As a result of the increasing benefits of such collaborations, support for CRCs has become the main channel of government agencies' funding strategies to promote transformative or paradigm shifting research (Boardman & Gray, 2010). Collaborative development and transfer of technology between local universities and local industry underlies much of the success of innovation clusters such as Silicon Valley, Route 128 and the Research Triangle of North Carolina, as pointed out by Etzkowitz (2002), Chakrabarti and Rice (2003) and Wessner, (2013), among others.

In contrast, much less attention has been paid to elucidating the structures of knowledge exchange between universities as knowledge producers and rural communities where financial, intellectual and managerial resources are scarce, as pointed out by Theodorakopoulos et al. (2012). In developing economies, interactions between universities and other players occur in a context that differs more or less significantly from that of developed countries. The type of collaboration modelled as public-private partnership research centres (CRCs) or Centres of Excellence (CoEs), while successful in university-industry technology transfer, is ill prepared to yield the desired knowledge exchange and technology diffusion to resource poor communities in the face of knowledge asymmetry between knowledge producers and the intended technology recipients. This problem is particularly significant for cases in which the technical solutions to be applied are complex and the intended end users of the technological knowledge are members of under-resourced rural communities (Petersen et al., 2016; Jacobs et al., 2019). Collaboration within such structures is tedious when the mostly tacit, localised knowledge basis of the intended technology recipients has limited overlap and/or complementarity with the specialised, mostly codified technological knowledge required to develop and apply the optimal technological solution to the challenge to be addressed (Jacobs et al, 2019).

With the increasing recognition that problem-solving skills and ability do not automatically follow from curricular studies and specialised knowledge, there is an emerging need not only to broaden the opportunity to acquire specialised knowledge, but also to stimulate among members of the communities connected to knowledge centres the capacity to apply the knowledge produced in this way to tackling practical problems that necessitate problem-solving skills (Sutz, 2005; Trauth et al, 2015). Efforts to mediate the necessary knowledge exchange through university-industry-state collaboration (the triple-helix) are often rendered ineffective by the difficulties that higher education and research institutions face when dealing with rural communities to propagate new production methods, as noted by Theodorakopoulos et al. (2012). According to the same authors, those difficulties are due to the following four reasons: (1) potential recipients of new technology have difficulties expressing their knowledge of the methods they use in appropriate language to those concerned with technology diffusion; (2) the benefits of new technologies are not immediately evident to these recipients; (3) the institutions have incomplete knowledge of the new methods and how to connect them with existing practices; (4) there is no systematic process in place to obtain information on how the technology transfer happens and to document the gains achieved.

To overcome those obstacles in the rural agro-food industry in Colombia, knowledge brokers (intermediaries) are proposed as a means to mediate between technology producers and rural technology recipients organised into communities of practice (CoP). Quite often, however, those difficulties are exacerbated by a context characterised by resource poverty and the absence of potent institutional arrangements, so that the proposed approach of using knowledge brokers may still be unworkable for economically marginalised rural communities. The existence of a strong desire within potential knowledge recipient communities to immediately reap the benefits of adopted technology and the knowledge transfer difficulties mentioned above often result in an expectation gap between what the knowledge producer can offer and what the recipient communities can absorb to achieve their intended objective (Theodorakopoulos et al., 2012).

The question we seek to answer in this paper is therefore: how can university-community engagement programmes deploy knowledge exchange projects to contribute to building inclusive and sustainable development in South Africa? This question is particularly relevant, considering the expectations that society places on universities in developing solutions to overcome the intricate challenges of poverty inequality and unemployment compounded by the constraints

imposed by Covid 19 and the recent social unrest in South Africa.

Most universities engage mainly in passive modes of technology transfer to communities, which usually takes place through presentations or seminars. This renders the transfer of skills associated with that technology very impracticable. Such a mode of knowledge diffusion is therefore unlikely to be effective in rural communities where the proportion of illiterate, technically unskilled people is large. However, the active mode, which is commonly deemed by many observers to be effective in rural areas, provides a technical demonstration of the scientific knowledge by putting in place a working system where technical application of this knowledge is deployed. End users are trained in the utilisation, management and maintenance of the corresponding technological equipment (Le Grange & Buys, 2002). Knowledge transferred under this mode is also aligned and customised to the users' current environment in a way that enables them to take ownership of it.

This study contributes to these debates by probing what happens at the interface of knowledge exchange to shed light on what can be done to bolster the contribution of university-produced knowledge in addressing community challenges. The paper is structured as follows: the section below presents the theoretical rationale of applying cooperative learning to overcome the hurdles of knowledge asymmetry between knowledge producers at universities and in marginalised rural communities in South Africa. The second section presents an empirical illustration of the application of cooperative learning in university-community engagement at the iZindaba Zokudla farmers' School and Innovation Lab, an initiative of the University of Johannesburg and the community of black smallholder farmers in Soweto. The final section concludes with remarks on the sustainability and inclusivity of the co-learning outcomes of the project.

The cooperative learning approach

Cooperative learning (also called co-learning) is a capacity building approach that encourages a move from the concept of learning as an individualistic and competitive endeavour to a collective responsibility for knowledge sharing and development in order to achieve a certain task or solve a given problem (Johnson & Johnson, 1989; Johnson et al., 1998). By learning together, team members are likely to learn more in a shorter amount of time while developing social skills and teamwork (Clark, 1999).

The application of cooperative learning has its roots in the social interdependence theory (Deutsch, 1949; Johnson & Johnson, 1989). Positive interdependence (cooperation) results in promotive interaction as individuals encourage and facilitate each other's efforts to learn. Positive interdependence results in promotive interaction, whereas negative interdependence results in oppositional or "contrariant" interaction.

Co-learning makes use of the instructional organisation of learning into small groups or teams to ensure that group members work together to maximise their own and each other's learning (Johnson et al., 1998; 2014). It helps develop the skills necessary to work on projects too difficult and complex for any one individual to complete alone in a reasonable amount of time. By using cooperative learning techniques, learners eliminate competition and work better together so that they can learn the vast quantity of information required of their training programmes and professions (Clark, 1999).

Whereas situated learning in communities of practice has been suggested to overcome the complexity of knowledge transfer to rural communities in the presence of knowledge brokers (Theodorakopoulos et al., 2012), the resource constraints of marginalised communities mean that the corresponding transaction costs can be prohibitive. Because of its greater capacity to facilitate skills accumulation, it has been suggested that cooperative learning be used to overcome the hurdles posed by the complexity of the external knowledge to be acquired (Deutsch, 1949; Clark, 1999; Arocena & Sutz, 2000; Teed et al., 2015).

Creating a learning community

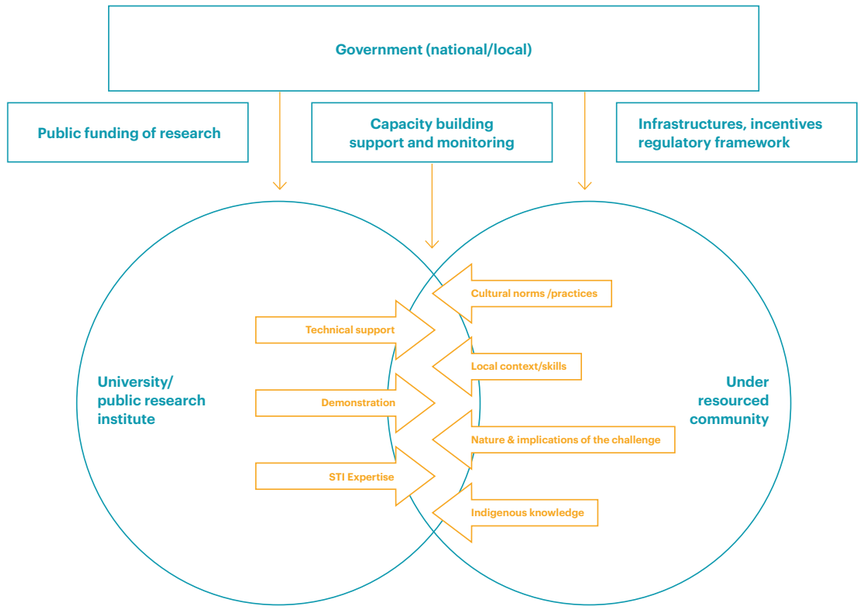
A community is a limited number of people who share common goals and a common culture (Johnson & Johnson, 2008). For a community to exist and sustain itself, members must share common goals and values that define appropriate behaviour by community members and increase their shared quality of life. Within a community, everyone should know everyone else and realise that relationships are long-term (as opposed to temporary brief encounters). Creating a learning community requires emphasising the overall positive interdependence among members.

Knowledge generation and management at universities and absorptive capacity in partner communities play an important role in determining the rate at which creative solutions can diffuse across value chains (Lämsa, 2008)[1]. However, whereas the application of specialised scientific and technological knowledge has often resulted in technological innovations to address societal challenges, more or less sizable mismatches have regularly arisen between university-generated knowledge and the needs of the communities that it was supposed to meet (Wolfson, 2010).

The existence of such mismatches has created the need for an adaptation mechanism between technological knowledge producers and recipients, in which knowledge sharing facilitates a co-learning process that can help overcome the constraints of the knowledge asymmetry inherent in the linear transfer of technological know-how, especially when asymmetry involves tacit knowledge. Co-learning acts as an ignition phase in the process of knowledge co-production between researchers and other and key stakeholders, which is crucial for the successful development of new ideas and innovative solutions (Pohl et al., 2010). Organisational learning and knowledge co-creation based on a continuous and dynamic interaction between tacit and explicit knowledge can thus be a potent tool to overcome the constraints of linear innovation and technology transfer models (Lämsa, 2008).

For externally produced knowledge to diffuse to community members, Nahapiet and Ghoshal (1998) proposed a knowledge exchange mechanism con-

Figure 1: Knowledge exchange between universities/research institutes and communities in a co-learning space



1. In the United States, for example, research universities are often major drivers of economic development in the areas in which they are located (Chakrabarti & Rice, 2003; Wessner, 2013) because the lion's share of university research is spent on engineering disciplines and applied sciences and is thus directed towards problem-solving (Rosenberg & Nelson, 1994).

sisting of networks of strong, crosscutting personal relationships developed over time that provide the basis for trust, cooperation and collective action. Figure 1 gives an illustration of knowledge exchange involving knowledge asymmetry between specialised knowledge producers and members of under-resourced communities. Successful exchange is facilitated by bringing holders of different types of skills and knowledge together to establish such personal relationships and share their views.

This process of creating a shared understanding of problem-solving knowledge corresponds to what Benneworth and Olmos-Penuela (2018) call the "coupling of knowledge circuits through cognateness" between knowledge creators and knowledge transformers. Cognateness is understood as a shared knowledge base and a common understanding of problems enabling players to incorporate usable knowledge from external sources (Cummings & Kiesler, 2005; Benneworth & Olmos-Penuela, 2018).

As stressed by Lippman (2013), the spatial design of such a space for collaboration and knowledge exchange is of significant importance because of the necessity to establish interpersonal relationships that foster mutual learning (Vigotsky, 1978); Vygotsky's theory of the zone of proximal development suggests that learners can develop their skills and strategies faster by working with others who are more expert in a given task. It has found

a contemporary application in the concept of "reciprocal teaching", used to improve students' ability to learn within their zone of proximal development.

Indeed, spatial design influences how people engage with one another and affects their ability to fully participate in activities. When designed thoughtfully, collaborative learning spaces help create optimal experiences for learning by allowing members to cooperate or work independently according to the specific requirements of the learning task (Lippman, 2013).

Figure 2 gives an illustration of such a space, where face-to face interactions are prioritised in order to facilitate trust building and cooperation.

The section below pays specific attention to the co-learning and co-creation processes that take place in a community engagement project run by scientists

of the Department of Anthropology at the University of Johannesburg and members of a local community

Figure 2: An example of a cooperative learning space design, with seats for trust-building interactions and tables for collaborative working on tasks.

(Photo taken by HSRC)

based in Soweto, one of the most famous townships in the outskirts of Johannesburg.

Empirical illustration of university-community co-learning: Izindaba Zokudla project

The co-learning findings presented in this study are based on interviews, documents and observational data collected from the Izindaba Zokudla (Conversations about Food) project in September 2021. The project is based in Soweto, Johannesburg, where the University of Johannesburg (UJ) has a satellite campus.[2]

Project background

Izindaba Zokudla aims to create opportunities for urban agriculture in a sustainable food system. This project was initially launched as an action research project with said aim in South Africa, Africa and rest of the world. The project's success is partly attributable to the use of multi-stakeholder methods being pioneered by project partners in the "Global Innoversity".

The methods used aimed not only to incorporate multiple stakeholders into the design process, but also to develop technologies, products, systems and practices that have social, environmental and economic benefits.

2. For more information, see https://www.izindabazokudla.co.za/.

The project started in 2013 as a service-learning technology development initiative and has since grown into a system of innovation that encompasses events, stakeholder integration and other activities that have created an ecosystem wherein emerging and smallholder farmers can be empowered. This project was born when researchers from the Department of Anthropology and Development Studies at the University of Johannesburg held a 3-day workshop to develop a "Strategic Plan" for urban agriculture in Johannesburg (Malan, 2020). This forum aimed at implementing a participatory technology development service-learning project eventually became 'iZindaba Zokudla, which juxtaposed technology development, service learning and urban agriculture with popular and university participation, entrepreneurship, food systems change and multi-stakeholder engagemen

Co-learning approach

The aim of the iZindaba Zokudla project is to build a framework or institutional foundation for meaningful action research that involves community members, university researchers and industry players, with the aim of triggering a systemic and sustainable change in local food systems. It aims to create opportunities for urban agriculture in a sustainable food system in Johannesburg. The project encourages the consumption of food produced in or nearby local communities. One of the values of the project is to promote a diversity of stakeholders in its endeavour to transform food systems using applied research on smallholder farming methods and sustainable and regenerative agriculture in South Africa. The project also provides a platform enabling emerging farmers to set up enterprises that can produce food for local markets as a key component of a locally based sustainable food system.

iZindaba Zokudla's main work includes the following:

- linking different people and connecting different stakeholders related to the food system, such as farmers, researchers, entrepreneurs, etc.;
- promoting networking and sharing of scientific knowledge and technical skills with other users, through engagement;
- conducting research to gain a deeper understanding of the constraints and bottlenecks in local food systems;
- running an interactive learning school with an emphasis on agriculture and financial management;
- knowledge exchange through posts from community members as well as research calls and output posted on the community of practice.
- The project also offers short online courses supported by the World Bank

Outcomes

iZindaba Zokudla's learning outcomes reflect its mission of creating a multi-stakeholder platform to transform local food systems into an economically productive, environmentally sustainable and socially beneficial network linking multiple stakeholders. This project has enabled many emerging enterprises to develop new activities and launch new products. Its multi-stakeholder nature has also allowed it to influence the country's agricultural policy through submissions to parliament and petitions with regards to urban farmers' problems and challenges. This has led to key innovations, including the creation of the Lab itself, the Khula! app and aparate.co. It has also resulted in the creation of seed libraries for the "rainbow maize" cultivar and the establishment of its value chain, which emerged from the initial visits made by the Slow Food Ark of Taste's representative to the lab in 2016. The launch of the rainbow maize seed libraries was enhanced by workshops organised in collaboration with the African Centre for Biodiversity and Bioversity International in 2016. Since then, a number of other seed libraries have been established by the farmers themselves.

In pursuing its goal to change urban agriculture, iZindaba Zokudla also established the Farm Lab, which provides local youth with skills training in organisational development and supports them with marketing, business development and information on agro-processing techniques. Before the outbreak of Covid-19 and the ensuing lockdown restrictions, the Farm Lab brought people together for various activities and regularly hosted 100 to 300 participants on days when such activities were organised. Activity participants included farmers and food processors, students volunteering at the lab (as part of the University's Community Engagement), outside entrepreneurs coming to buy from farmers and stakeholders, as well as those who were there out of curiosity. Farmers brought produce to sell

at the lab and discussed ways of supporting each other to confront their multiple challenges. They also made use of networking opportunities at lunch time, and some of them even formed (business) partnerships.

In partnership with various stakeholders, the iZindaba Zokudla Farmers' Lab has also been organising the Soweto Eat-In since 2016, an event in the form of a food festival that showcases the best in heritage and indigenous foods. They also organised the 'School Garden Dialogues' with Educators in Soweto, the iZindaba iLanga energy workshops with the Process, Energy and Environment Technology Station on UJ's Doornfontein Campus, as well as other unique events that aimed to facilitate the entry of emerging food entrepreneurs in a sustainable food system in South Africa. The focus on sustainable entrepreneurship is a key feature of this initiative, as it presupposes that real change can only be accomplished by entrepreneurs and enterprises that in many respects exemplify sustainability. This also explains the dearth of direct evidence for the efficacy of iZindaba Zokudla, as the project itself cannot make much real change, given that its activities are all aimed at stakeholders accomplishing the task of social change. This, however, ties up enterprise development with the theme of this project: accomplishing a transition to a sustainable food system.

From our discussions with the beneficiaries of this initiative, it emerged that the main outcome has been the involvement of previously marginalised community members in the iZindaba Zokudla monthly Farmers' Lab, which translated complicated technical and scientific terms into simple, easily understandable concepts: this resulted in the creation of new activities and the establishment of new enterprises. Peer learning is another important outcome, whereby some farmers who had prior knowledge or specific experience in agriculture used the opportunity offered by the lab to teach fellow farmers.

Box 1: The Khula! app as an example of how co-learning can create impressive results.

Khula! is a South African app and supply-chain solution that was created in 2016 by Karidas Tshintsholo and Matthew Piper while they were still studying at the University of Cape Town (UCT). Even though the developers of this app were students at UCT, not UJ, it was facilitated by the iZindaba Zokudla Farmers' Lab. They helped organise the initial workshops and the iZindaba Zokudla Farmers' Lab was used to sign up farmers for the first version of this app.

The aim of this app is to assist black farmers who have been excluded from formal markets because their produce is too small. Farmers using the platform are currently supplying fresh produce to hotels and big markets such as the Michelangelo Hotel in Sandton and the Sandton Convention Centre, among other establishments.

In 2018, the app took top honours at the MTN Business App of The Year Awards in a special category called Best Agricultural Solution. In August 2021 the Khula app announced $1.3 million expansion funding to scale operations across the country. (http://www.khula.co.za/)

Knowledge co-creation

The setup of the Farmers' Lab offers opportunities for full interactive learning and knowledge co-creation between UJ researchers and local community members. One way of achieving this is ensuring that scientific and other jargon is fully explained in concepts that are easy to grasp. In knowledge exchange discussions, expert and non-experts are juxtaposed on a public stage. Interviewed participants recalled that when the Farmers' Lab discussed biogas, a local farmer who had a biogas unit on her farm and a university expert were recruited to explain biogas adoption to local community members. The local farmer offered a complementary lecture to the university expert. The same process is used in other instances where an expert is paired with a local farmer or community member who has experience in the topic being discussed. Local farmers are now able to teach their peers, provide advice and sometimes

even challenge the university expert with their local indigenous knowledge. This knowledge co-creation has even extended to how to sell their produce, as well as graphic design workshops where local designers work hand-in-hand with university design experts to develop optimised irrigation system designs.

The main concern was the lack of government support that would have enabled the scaling up of local community capacity to take advantage of more substantive investment opportunities

Another limitation on co-learning is the language barrier that seems to be hindering participation by the elderly. When UJ lecturers come to teach them and cannot speak the local languages, it creates frustrations. Participating local community members suggested that more programmes be prepared in isiZulu and other local languages to broaden participation. They also proposed the idea of supplementing the Farmers' Lab initiative with other measures, including government support for local capacity building and financial assistance to help shore up investments in smallholder farming.

Concluding observations

Whereas the legacy of apartheid made it difficult to apply knowledge produced in higher education institutions to address the local challenges of disadvantaged communities, the post-apartheid era has seen the emergence of multiple university community engagement projects, whereby scientific knowledge produced by universities is shared with members of disadvantaged local communities to improve their living conditions in a sustainable manner. Sharing scientific knowledge with members of disadvantaged communities requires overcoming multiple hurdles of knowledge transmission within a context of knowledge asymmetry between epistemic communities. The cooperative learning approach offers the opportunity to overcome these hurdles more easily, by building trust among learning partners and encouraging learning collaboration to increase the speed at which local capacity can be developed among the knowledge end users. As illustrated by the case of the Izindaba Zokudla project involving the University of Johannesburg and smallholder farmers from disadvantaged communities in Soweto, a university-community co-learning approach offers multiple opportunities to co-create readily applicable practical knowledge to help community members confront their local challenges and develop sustainable solutions that increase their inclusion in the local and national economy. The success of such an approach rests on developing a long-term vision underpinned by mutual trust, whereby existing knowledge held by disadvantaged community members is merged with university-produced scientific knowledge to design the most appropriate solutions. Participation of the end-users in the conception and implementation of practical solutions to their challenges increases the sense of local embeddedness and represents a key aspect of both the inclusivity and sustainability of co-learning outcomes.

Community engagement with extensive interactions is necessary to coordinate knowledge sharing and strengthen local absorptive capacity in order to optimise the benefits of co-learning. Accordingly, a reorientation of the incentive systems within knowledge-producing institutions is required to accommodate and attach value to the time and energy spent on enhancing the problem-solving capacity of the local communities in which universities are embedded.

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2.5 ICTs and digitalization. A digital-human future towards more inclusive and accessible HEIs

Multi-layered digital inequalities in HEIs: the paradox of the post-digital society

Laura Czerniewicz

Abstract

This paper explains the ways that digital inequalities are becoming more complex in higher education (HE). It shows that while the foundations of access to devices and connectivity are improving to an extent, the fundamen-tal social inequalities of electricity and affordability are severe. The paper shows how the rapid digitalisation of HE catalysed by the Covid-19 pandemic introduced risks pertaining to student and staff data sovereignty. There is an elaboration on the role of technology in knowledge representation and visibility; the Matthew Effect in edu-cational technology, the biases of algorithms; and the underside of the "any time anywhere" promise.

In answer to the question "How can HEIs, ICTs and digi-talisation address these inequities and contribute to inclusive and accessible HEIs?", the first answer is that sometimes it can't, and that technology might be ina-ppropriate or even unethical. The argument is made for a serious commitment to a research agenda regarding the ways that HE has been changed by dominant technologi-cal systems and discourses. There are also opportunities to leverage the gains of designing for equity in prac-tice and in policy. And finally, there is room to use the affordances of the technology itself to build completely transformed systems for equitable ends.

ICTS and digitalisation in Higher Education: Problem? What problem?

The question of whether and how technology can assist higher education in becoming more inclusive and accessible is not a new one, with decades of efforts, promises, failures and research building a substantial knowledge base. As society at large has made digital integration essential for participation, new forms of exclusion are coming to bear into, in and on higher education, abetted by unequal power relations and compromises to be negotiated within the Higher Education (HE) ecosystem. The intensive digitalisation catalysed by the pandemic and concomitant "online pivot" means that **HE is in danger of fast becoming a site of surveillance capitalism, with the concomitant dangers for equity, little transparency and unequal terms of engagement.**

It is not possible to review ICT and inequality in higher education in isolation: addressing inequality must be considered within broader social realities. Society is sometimes described as being post-digital because it is impossible not to be impacted by the digital, even, ironically, as digital inequalities grow.

However, digital structures and practices are unevenly distributed and experienced within social structures, which are in turn refracted into universities. In a virtual cycle, universities reproduce these structures and practices, while knowledge production and dissemination in universities also shape and reframe social practices.

The intersection of the digital with dominant economic models has created what Zuboff calls rogue capitalism, i.e. surveillance capitalism - an economic model which uses human experience as data for the purposes of profit making and behaviour modification (Zuboff, 2019). From an HE perspective, "our mind and psychic life have become the main raw material which digital capitalism aims at capturing and commodifying" (Mbembe, 2019). The value of data in HE was illustrated pre-covid-19 by the financial value of companies which own and provide student data.

The pandemic saw the rapid entry and scaling-up of private companies into the HE sector with massive educational technology investment in a sector confirmed as a market opportunity. Of course, there had previously been private companies in the HE ecosystem, and rightly so. However, because of the urgency of responding to lockdowns and campus closures in 2020, speedy negotiations in tandem with underfunded universities meant that there was insufficient time for needy universities to hammer out equitable terms of engagement. It also meant that there was a likelihood that short term decisions and agreements, hastily made

for immediate ends, would become entrenched in the long term.

Technology and inclusion in HE involves complex interconnections between several sectors and stakeholders. The links between digital divides and educational socio-economic indicators have been emphasised by researchers across the world (for numerous examples see Stewart, 2021) and unsurprisingly have proved critical during the pandemic. These have played out in inter-dependent and contextual ways, which makes dealing with HE and ICT inequalities one of the most wicked policy problems.

Addressing inclusion in HE means simultaneous engagement with several of the Sustainable Development Goals: quality education (4), decent work (8), infrastructure (9) and reduced inequalities (10). Exclusion also operates at several levels: individually (students and educators), institutionally, and across the sector nationally, regionally and internationally. It also requires disentangling how divides play out and how peripheries manifest, as well as the terms under which forms of capital intersect.

All these issues have been spotlighted since the first lockdowns and university closures early in 2020, when students were sent home to study and educators had to teach from home. There has been widespread agreement that the multiple forms of existing inequalities in university communities were exposed. Now that they have been seen, they cannot be unseen (Czerniewicz et al., 2020).

The questions for those concerned with ICTs and inequality for addressing inclusion in HE must always be: who profits, who loses, which interests are served, which agendas are marginalised, what is the balance of power and what are the terms of engagement?

Old and new digital divides

The digital divide is alive and well; indeed the digital paradox is that even as the basics of the divide are addressed through access, more complex layers of exclusion are added; digital inequalities thus morph into new complicated forms. Nevertheless, fair and equitable technological infrastructure is the foundation of inclusion in HE: electricity, devices, ubiquitous connectivity and cheap data. These are essential but insufficient.

The ability of residential universities to ameliorate differentials in access to technological infrastructure on campus fell away during the pandemic, when students and academics were sent home to learn and teach.

The most basic access requirement is electricity. Yet 790 million people have no access to electricity and 2.6 billion people in developing countries do not have access to constant electricity (World Bank, 2021). Many students, especially in rural areas, had no electricity to study from home.

Basic connectivity is becoming globally ubiquitous: ninety-three per cent of the world population has access to a mobile-broadband network. Yet this percentage is only 77% in Africa. Globally, about 72% of households in urban areas had access to the Internet at home in 2019, almost twice as much as in rural areas (only 38 per cent). The urban-rural gap was small in developed countries, but in developing countries urban access to the Internet was 2.3 times as high as rural access (International Telecommunication Union (ITU), 2020b).

The cost of data is a serious barrier. There is a 30,000% difference between the cheapest price for data and the most expensive, with the most expensive data being in three African countries (Malawi, Benin and Chad), while India, Israel and Kyrgyzstan have the least expensive (Ang, 2020). A significant affordability gap remains between developed and developing countries, especially for baskets that include at least 1.5 GB of data. ICT services in the majority of the least developed countries (LDCs) remain prohibitively expensive. In many developing countries a data-only package with the minimum 1.5 GB of data still costs the consumer more than 2% of monthly income. And in several countries the median price can be more than three times the 2% affordability target. The gap between developed and developing countries in terms of value for money is growing (International Telecommunication Union (ITU), 2020a). Of course, in addition to cost, the adequacy, appropriateness and fixability of devices are relevant considerations.

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These factors are outside of the education sector but have a direct impact on it. As long as technology infrastructure is not considered and implemented as a public good, those with resources will be advantaged. It is for this reason that in a networked and global world, national elites were able to access what was needed to study online in every country during the pandemic.

Divides at sectoral level have widened as universities grapple with digitalisation.

Underfunded universities were thrust into the digital age at speed in 2020, unable to escape the digital and related realities of their students' lives as institutions scrabbled to improve access and connectivity. Their varying abilities to do so exposed the stratification of national systems; some universities had deep pockets, large endowments and wealthy students. Others had none, or lost their additional forms of income, and some universities have closed (Higher Ed Dive Team, 2022).

There has been growth in the number of public-private relationships being formed, partly in response to some of these challenges. These relationships are being forged and negotiated by over-stretched public universities, many of which are coping with slashed government funding, hungry students and exhausted overloaded educators. Wealthier universities are in a better position; they have brand power, can afford to develop in-house capacity, are able to develop and implement privacy frameworks, can and do employ privacy officers, and have the capacity to negotiate terms with vendors such as Online Programme Managers (OPMs). These are the ways in which, adjusting to the requirements of a digital university in a post digital world, uneven university systems are being further stratified.

Datafication and its discontents

The amalgamation of the digital into higher education, through the dominant extractive economy, introduces complex and often invisible power dynamics into public higher education. The terms of engagement are imbalanced, hidden behind dense language and easy promises. There are especially profound implications for those with barriers to participation at individual and institutional levels. This has introduced several new inequities into the student experience and the sector.

As institutional systems, research, teaching and learning have become digitalised, so it has come to be that metadata (if not content) in the form of clicks, uploads, downloads, information use, etc. can be extracted and used by the company whose system provides the service being used. This data has financial value and provides opportunities for profit making. For those who use big tech companies' products as teaching and learning platforms, there are more serious ramifications as this metadata can be aggregated with that of other products in the company's basket.

Understanding these new technically convoluted education technology systems creates new forms of inequities. While the interface is designed for ease of use, decoding the data provided, what has been called its "shadow text" is hidden from view and accessible only to epistemic elites, who alone have the expertise and the technological machine learning resources to decode it (Perrotta et al., 2021). This makes disputing company assurances and negotiating with them arduous: another form of inequality is introduced into higher education as only those with sophisticated expertise can engage with the data systems.

For students, privacy and cookie settings are the first point of encounter with data. These are generally obscure and unclear (Amiel et al., 2021), with a minute minority likely to respond to these settings at all. In less obvious ways students are caught up in surveillance practices, whereby their experiences are turned into data. Their "consent" means little when they have no effective choice and the ostensible "agreements" are obfuscated. "Free" tools extract a data price, and it is only those with the financial ability to pay for tools and services who really have the option of refusing to use such tools.

Responding to this dense and convoluted terrain requires multifaceted inter-connected digital literacies, critical literacies, information literacies and data literacies (Pangrazio & Sefton-Green, 2020). Those with access to extensive cultural capital are more likely to be positioned to take meaningful control and ownership of their own data. There are thus inequalities within the student population, as well as between students and the tools they use.

Nationally, it is not the purview of one department to put in place practical and legal structures to ensure fair and equitable data sovereignty and to make strides towards resolving digital divides. The tasks are fragmented across several departments or ministries of telecommunications, education, labour, infrastructural planning and so on. It is a national imperative to ensure that such coordination takes place to ensure citizen rights for all, especially those most marginalised by limited access to economic and other capital.

Knowledge and learning

There are numerous forms of exclusion in higher education with and through technology. This piece briefly touches on four points which are especially relevant following the pandemic; the role of technology in knowledge representation and visibility; the Matthew Effect in educational technology, the biases of algorithms; and the underside of the "any time anywhere" promise.

The geopolitics and decolonising of knowledge are currently burning issues, with the focus of research and discourse largely on epistemology, power, voice, legitimacy and representation. Threaded through this mix is technology, which is of course not neutral and enables, echoes or amplifies existing and unequal power relations. However, the debates about decolonising the curriculum and those regarding the role of technology tend to be siloed in different disciplinary fields.

Firstly, there is the simple matter of local research and knowledge being online. For many, if it is not online it does not exist. Unfortunately, the dominant open access models have paradoxically replaced access paywalls with publishing paywalls, effectively excluding knowledge and voices from the peripheries. Despite the affordances of free-to-share technology, the current business model for scholarly communication has not led to fairness or equity (Poydner, 2019).

Search engines are active players in knowledge production and representation, given the role they play in surfacing and distributing information. Here too, technology, and specifically algorithms have been shown to be skewed towards profit making (Headlee, 2020). **It is of great concern to universities, as sites of knowledge production, that technological affordances are bolstering knowledge inequalities.**

Algorithms (defined most simply as automated decision-making with large data sets) are playing more of a role in student university experiences, as students' journeys through education becomes more digitalised - from application for university, to programme selection, to using learning technologies for their studies, to examinations. Beyond education, the risks of algorithmic bias have been widely explored, through books largely from the US including Algorithms of Oppression, (Noble, 2018), Automating Inequality (Eubanks, 2018) and many more. In an African context, AI-related technologies have been described as masculine, white, heteronormative, able-bodied and Western (Foster et al., 2020). Reviews of research on algorithmic bias in education have found several examples, noting that such research is relatively sparse (Baker & Hawn, 2021). As algorithms and AI percolate the sector, the lack of research poses a risk to inclusion and equity.

The use of learning technologies has in itself been shown to be a risk to equity in the student body. During the pandemic, online tools were adopted at scale and speed. Without sufficient and focused learning design to ensure inclusive participation in many contexts, the indications are that extensive use of learning technologies during this stressful period has had the Matthew Effect on students. Drawing on the biblical reference, the term was popularised by Merton in 1968 to describe accumulated advantages. The Matthew Effect in learning tools has thus meant that such tools have been most beneficial for well-off students with the social and cultural capital to exploit them (Reich, 2020).

Finally, the recent global online education "experiment" following the pandemic has laid bare the inequalities in the "any time anywhere" promise of flexible education. There is no model student, no "roaming autodidact" - a self-motivated, able learner that is simultaneously embedded in technocratic futures and disembedded from place, culture, history and markets (McMillan Cottom, 2016). Instead, there are students living real enmeshed domestic, familial, working and studying

lives struggling to find the time and the space to study. Designing for a model student means designing for the privileged elite and disadvantaging the majority of the student population.

In light of this very brief overview of ICTs in HE though an equity lens, what can be done?

How can HEIs, ICTs and digitalisation address these inequities and contribute to inclusive and accessible HEIs?

Sometimes it can't

In a post-digital world, there is enormous pressure on universities not to be "left behind" in order to be part of and prepare students for "the Fourth Industrial Revolution". Yet sometimes technology is not the answer, sometimes the solution it offers is out of sync with the problems of HE, and sometimes the use of technology is unethical. Recognising these instances can be extremely difficult, and they are certainly contested.

In the first instance, the question is whether technology is needed at all, whether non-technological practices work well or even better. Technochauvinism - the belief that technology must be the solution (Broussard, 2018) - leads to unnecessary digital applications which might well be introducing inequities, as certain groups will not be able to participate. Also falling into this category is recognition of when a complicated technology is unnecessary, as a simple one would do.

In the second instance, it might be decided that the potential value of a tool is outweighed by the potential harms or inequalities. There are examples of universities which have made a blanket decision not to use online proctoring tools because of the invasion of student privacy, as well as the exposure of poorer students' home circumstances; or where it has been decided that facial recognition systems will be banned.

Making these decisions is hard, partly because they are political and partly because there may not be reliable evidence to inform the debate.

Getting to grips with the issues

There has been too little time to pay attention to these ballooning issues. So much is new, especially at scale, and so much has happened so speedily that there simply has been little chance to grasp the complexities, the unanticipated outcomes and the dangers. Universities are already so pressurised, that technological solutions are tempting when they are sold as easy, promising simple solutions to intractable problems.

There is much that is not yet understood; here universities can make a valuable contribution since research is part of their core business. In particular, there needs to be research on educational technologies of all kinds in terms of inclusion and equity. The areas needing scholarly attention are numerous. At micro level, how students with barriers to learning experience technological tools and datafied educational practices; the responses, experiences, literacies and outcomes for different student groupings with varying access to cultural, social and economic capital; in which circumstances which technologies prove useful for students with barriers to learning; the ability of educators to support inclusivity. At institutional level, the nature of the new roles required of public universities in what are effectively forms of market making (Komljenovic & Robertson, 2016), while protecting their public university mission; the forms and choices regarding governance structures to both protect privacy and enable open research; how dominant technological discourses are infused into and resisted in teaching and learning practices. Nationally, the ways that existing divergent policy and regulatory frameworks can be brought together to identify risks for exclusion and be revised for inclusion and equality. Internationally, given how the pandemic has exposed digital inequalities across the entire sector, not only in low-income countries, and given the power of big tech companies to override national and international laws, identifying points of leverage to ensure that the public missions of public universities are not simply lost.

Iterating towards equality

- **Leveraging what has been learnt about equitable design**

  Covid-19 and the concomitant online pivot has been a terrifying educational experiment which has had very material effects on students, educators and the sector. It has also confirmed and amplified much of what scho-lars and professionals already knew - especially that one size does not fit all. It has revealed how painfully difficult the holy grail of "scaling up" is. It has made clear the limitations of adaptive learning and the extent to which it has not fulfilled its promises. What has come into focus is that certain learning technologies are useful for specific purposes in particular contexts.

Using them generically for the sake of efficiency is to the disadvantage of some, leaving academics and designers to answer the impossible question of what number of "some" is too many.

This period has also shone a light of the numerous ways programmes and curricula have been and can be designed with diversity and inclusion at the forefront. Such equity-focused design has been explored world-wide, in even the richest countries. Student learning has been enabled in many places with low connectivity or no connectivity contexts and online classrooms with varying levels of access. There are also examples where students have been involved in decision-making and co-creation of resources.

Improved learning design and the increased take-up of universal design learning (UDL) through the multiple modes necessitated by the pandemic has offered improvement for increased diversity in the sector, partly because of massification in the system. These are activities and approaches to build on and grow.

- **Developing equitable ethical data policies and frameworks**

Inequalities and unequal power relations can and are being tackled at policy and regulatory level. These are largely under the banner of FAT - Fair, Accountable and Transparent. Such efforts occur within curricula, institutionally, nationally and internationally. Some of these efforts occur outside the HE sector but impact on HE in immediate ways. Examples are the General Data Protection Regulation (GDPR) at regional level, and the Protection of Personal Information Act (POPIA) at national level. These kinds of policies are aimed at individual data sovereignty and control, with implications for both the running of universities and the way that research can be undertaken and reported.

Within universities, valuable regulatory frameworks regarding student data and learning analytics protect students. Such frameworks highlight the principles of privacy; data ownership and control; transparency and consent; anonymity; non-maleficence and beneficence; data management and security; access; responsibility; minimising adverse impacts and enabling interventions (Corrin et al., 2019). In addition, there is a need for other ethical considerations such as lack of justice, inequality and power embedded in the learning analytics system (Cerratto-Pargman & McGrath, 2021).

Perhaps the most demanding area is the formation and development of digital, data and critical literacies, as research has shown that such literacies are much more effective when integrated into curricula. Stand-alone literacy development is essentially a Band-Aid solution. Given how complicated and emergent the terrain is, this is a big ask of overburdened educators who may themselves not have those very capabilities.

There are equity implications in practice as well as in policy. Technical, administrative, procurement and legal services within institutions make decisions about tools, platforms and services which impact on equality. Procurement processes need to ensure that due consideration is given to technologies which may cause or impact on barriers to learning. In hybrid environments, such teaching and learning models are likely to account for students being both on and off campus in diverse environments. In addition, it is the responsibility of those in these positions to negotiate terms and conditions with educational technology companies and vendors, keeping an eye on the agreements regarding student data in particular.

Transforming the system

For parity of participation - Fraser's definition of social justice (Fraser, 2005) - to be possible, the HE sector would need to be foundationally transformed in terms of the allocation of resources, values, funding models, governance structures and systems. Perhaps ironically given how technologies have been used to date, digital technologies intrinsically have affordances which enable sharing and collaboration at low or no cost. They are ideal for cooperative and commons-based models which are premised on sharing and collaboration.

It is arguable that this fundamental restructuring of universities is not possible given the broader social and economic context in which they are located. Nevertheless, it is important to envisage a higher education system which uses technology for equity and social justice. At this post-pandemic time, the shape and future of universities are under scrutiny. This is a time where pluriversal knowledge structures, open education, knowledge commons and learning commons can be dreamed into being. This is tough but possible through the building of alliances and collegial collaboration. As sites of knowledge production, radical innovation and deep expertise, universities are the ideal location for radical transformation.

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Higher education and digitalisation in the pandemic: Latin American lessons for the challenges of the future

Ana Laura Rivoir

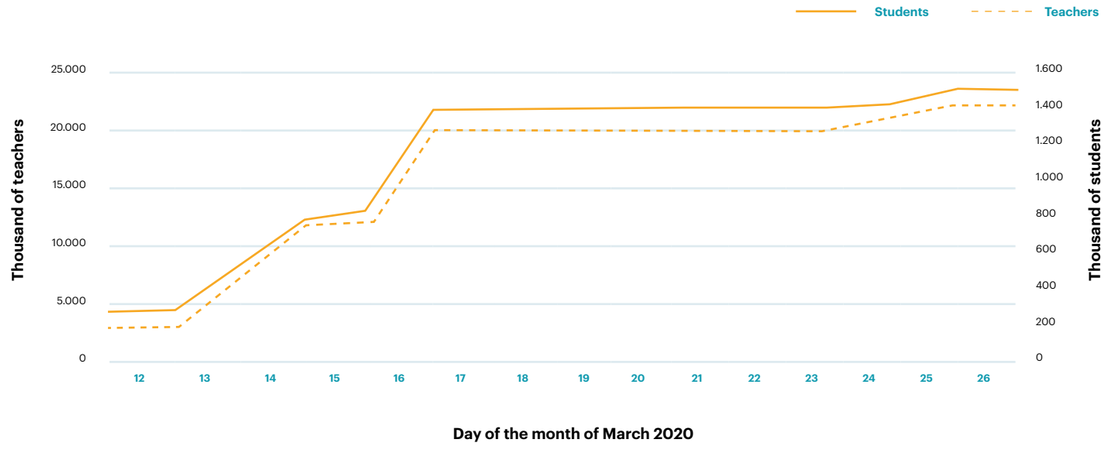
Abstract

The situation of the Covid-19 pandemic during 2020 and 2021 has created significant challenges for education in general and higher education in particular. Institutions have made a considerable effort to maintain teaching by resorting to online tools. In Latin America, they faced problems of infrastructure and connectivity and a lack of digital capabilities and skills, due to conditions in higher education institutions (HEI) and countries. The paper presents an overview of the initial conditions of the digitalisation of higher education in Latin America and the existing inequalities. The following aspects are analysed using the available data: the changes experienced, and the processes associated with emergency distance education, lessons learnt from the introduction of new modes of teaching, and risks associated with fulfilling the right to education and advancing in its democratisation. Finally, some recommendations are given for progressing in the transformation of higher education using a blended mode, and some of the actions that are needed in this area.

Latin America: Higher education and digital development at a time of pandemic

With the advent of the Covid-19 pandemic, higher education institutions (HEIs) in Latin America took up the health measures implemented by their governments just as their counterparts did around the world, including the suspension of in-person classes. For HEIs, however, this decision posed two major challenges: finding ways to stay connected to their students and findings ways to maintain their offering of training and

Graph 1: Estimation of the total number of students and instructors affected by the suspension of in-person classes in March 2020 in Latin America and the Caribbean.



Source: UNESCO-IESALC, (2020).

education. Both challenges called for the use of digital technologies.

This paper analyses the various initiatives and processes implemented by HEIs in 2020 and 2021 under the umbrella of emergency remote education (ERE).

Maintaining educational links amid the pandemic in a context of inequality

In Latin America and the Caribbean, the shutdown of higher education ultimately struck every HEI, affecting 98% of the region's roughly 24 million students and 1.4 million university instructors (Pedró, 2021). As Graph 1 shows, the number of teaching staff and students who were affected by the suspension of classes rose steeply from mid-March 2020 to the end of the month.

With the suspension of all in-person classes, the vast majority of HEIs took the decision to pursue remote education. At the time, their action doubtless signified a major policy decision to uphold the right to education. By December 2021, only Uruguay had fully reopened its classroom doors. The remaining countries in the region carried on with some form of hybrid or blending learning that involved various combinations of remote and in-person learning (IESALC, 2021a).

In 2020, Latin America witnessed a sharp increase of 60% overall in the use of online education, but the rise was not homogeneous given the gaps in access, use and connection speed that existed across the continent (CEPAL, 2020).

The adopted measures have affected students unequally. As in the rest of the world, the growth of higher education in Latin America has boomed in recent years. According to IESALC (2020), the past twenty years have seen the steepest rise, with the gross enrolment ratio jumping from 23% in 2000 to 52% in 2018. Many factors account for the rapid growth, most notably economic development, the increased aspirations of the middle classes, the rise in the number of private HEIs, and the spread of distance and open learning. However, poverty and geographic mobility still stand in the way of greater access to higher education for portions of the population.

When the pandemic came, therefore, Latin America was still dealing with inequality in access to higher education. For example, young people in urban areas had a 22% higher likelihood of attending higher education than their counterparts in rural areas. Moreover, the percentage reached as high as 35% in Colombia and Bolivia (Ferreyra et al, 2017). Such inequality also existed within countries, where there was an average gap of 14 points between regions in terms of access rates to higher education.

With the switch to virtual education, inequality also affected connectivity and access to ICTs, especially the internet. According to CEPAL (2020), 66.7% of people in Latin America and the Caribbean had internet connection in 2019 and the main disparities in access related to socioeconomic status. In 12 countries in the region, 81% of people in the top quintile had access, whereas only 38% in the bottom quintile did. The same kinds of inequality affected students, where 80% of households in the top quintile had laptop computers compared to only 10% of households in the bottom quintile. In addition, 67% of households in urban areas had internet connection, whereas only 23% of rural households did. In Bolivia, El Salvador, Paraguay and Peru, 90% of rural households did not have internet.

Moreover, **connectivity alone is not enough. This is because low connection speeds affect educational use, limiting the effectiveness of digital solutions for online education.** The problem proved particularly serious during lockdown, when different members of a household needed to use the internet at the same time. In June 2020, 44% of the countries in the region did not reach the download speed required for carrying out several online activities at the same time (CEPAL, 2020). With the suspension of in-person classes, the impossibility of internet use in households became a determining factor in the continuity of education.

According to the UNESCO-IESALC report (2021), taking into account that over 50% of the higher education on offer in the region is private and that a significant number of public HEIs also charge tuition, the region's governments and institutions facilitated mechanisms of financial support or access to credit in response to the worsening economic situation. Some countries and HEIs also gave financial assistance to households to obtain internet access and equipment.

Other forms of assistance were targeted at HEIs. In Chile, for example, the government took resources assigned to competitive funds in 2020 and redirected them to online training projects. In Brazil, the government's assistance to HEIs involved the purchase of materials, equipment and connectivity for federal universities. Colombia and Peru opened spaces for pedagogical and technical skills development to cope with the emergency. Colombia developed a regulatory framework to guide HEIs on how to handle the emergency with technologies, and designed a sponsorship programme known as the "Plan Padrino" to promote collaborative efforts among public and private HEIs to develop academic activities supported by ICTs (UNESCO-IESALC, 2021).

In addition, Peru invested in the acquisition of internet packages for students and teaching staff. In Colombia, the Ministry of Information and Communication Technology started implementing two of the four initiatives in the "Last Mile" programme, installing internet access by landline for initially more than 250,000, covering an equal number of families in socioeconomic strata 1 and 2 (UNESCO-IESALC, 2021).

According to IESALC (2021b), HEIs sought to give continuity to their academic and administrative activities after the disruption of the pandemic by making significant investments in equipment and material that they delivered to university students to carry on with their studies, as Table 1 shows.

Table 1: Help with material and equipment delivered by HEIs to students to carry on with virtual academic activities.

Country	University	Connectivity	Equipment (computers and/or tablets)
Public universities			
Argentina	Universidad de Buenos Aires (UBA)		
Brazil	Centro Universitario das Facultades Associadas de Ensino - FAE		
Brazil	Unicamp - Universidade Estadual de Campinas	✓	✓
Brazil	Universidade Federal do Rio de Janeiro	✓	✓
Chile	Universidad de Chile	✓	✓
Chile	Universidad de Talca	✓	✓
Colombia	Universidad Nacional de Colombia		✓
Colombia	Universidad de Antioquia		✓
Mexico	UNAM	✓	✓
Mexico	Universidad Mayor de San Marcos	✓	
Uruguay	Universidad de la República		✓
Private universities			
Colombia	Corporación Universitaria Minuto de Dios	✓	✓

Colombia	Universidad de los Andes	✓	✓
Costa Rica	Universidad Latina de Costa Rica		
Costa Rica	Universidad Hispanoamericana		
El Salvador	Universidad Francisco Gavidia		
El Salvador	UCA		
Honduras	UNITEC/CEUTEC		
Mexico	Universidad Iberoamericana, A. C.	✓	✓
Peru	Pontificia Universidad Católica de Perú (PUCP)	✓	✓

Source: Own elaboration from data of UNESCO-IESALC (2021) based on a survey called "Encuesta Covid-19 y apoyo financiero a estudiantes universitarios en América Latina. Se aplicó a siete entidades de gobierno, nueve ICE y 20 universidades."

The majority of the universities in question delivered assistance in the form of "technology grants". Beneficiaries were chosen on the basis of socioeconomic status. In 2020, the University of the Republic in Uruguay created a "laptop grant", which consisted of free loans of computers as part of an agreement reached with the Ceibal project (UNESCO-IESALC, 2021).

In short, higher education on the continent had to face the twofold challenge of shifting in-person learning to virtual learning in conditions that were far from optimal either for connectivity or for access to ICTs. In response, steps were taken to mitigate inequality in order to sustain educational activity and keep the greatest possible number of students connected and learning. From this period and these experiences, we still have some investments made by governments and the HEIs themselves, both in infrastructure and in initiatives to improve access.

The pandemic and emergency remote education (ERE) in higher education

For decades now, technologies have been used in education, particularly higher education, and a great deal of knowledge has been gathered on the subject. The need to use ICTs to bring about changes in ways of teaching, together with the importance of teaching innovation in higher education, has long been put forward by experts.

The growth in technologies confronts HEIs with the need to expand technological infrastructure, make curriculum changes and train university instructors (Hardgreaves, 2003; Brown & Adler, 2008; Briones et al., 2008; Hilu et al., 2015). Despite these proposals and recommendations, **the incorporation of ICTs has proceeded much slower than desired, particularly in relation to changes in pedagogical models.** This became clear when the closure of the universities made it an urgent need to use ITCs and change to virtual learning (Maggio, 2020).

Many HEIs in Latin America have taken enormous strides to improve infrastructure and connectivity, enhance instructor training and use, and build the capacities of all actors in general. Technological development, however, has accelerated and with it so have the uses and appropriations of the population, particularly the younger segments of society. As a result, the higher education system faces a widening gap between the everyday use of technology among people in HEIs and the incorporation of technology into processes of teaching and learning. To the extent that university education does not bring in new means, particularly ICTs, and innovative new ways of teaching, it will be fall farther and farther behind the transformations and sensibilities of the new generations that enrol each year. At the same time, a host of new pedagogical opportunities will go untapped (Albertos et al., 2017; Serres, 2013; Sonsoles et al, 2010).

The events, actions and processes experienced during the pandemic could furnish answers to how we can or wish to change the use of technologies in the future.

To cope with closure, HEIs applied practices of "emergency remote education" (ERE). Hodges et al. (2020) have given this label to initiatives seeking to ensure educational continuity in contexts of crisis or catastrophe. Because of the pandemic, it became abruptly necessary to adapt planning and programming to emergency circumstances and work situations, making significant use of ICTs and other existing resources and capacities. The rapid shift from in-person learning to virtual learning relied on institutional support and guidelines, instructors' capacity for innovation, and peer communities. Overall, HEIs issued very broad guidelines and instructions. According to Maggio (2021), the key step in the first part of 2020 was to make the content of courses available to students in digital format.

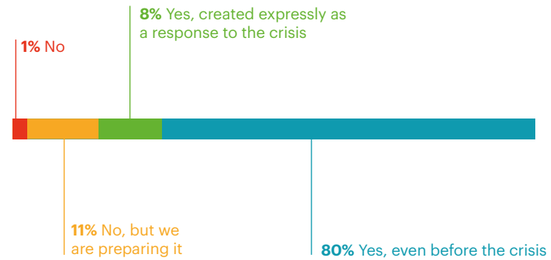
Under these circumstances, the existence of open educational resources, whose impetus and recommendation have been pushed by UNESCO[1] for decades, made it possible to draw on materials rich in information and content that could be worked on and constructed collectively (Aibar et al., 2015; Rivoir et al., 2017). Many HEIs on the continent took note of the availability of accessible digital resources and study content. Given the circumstances, they were also able to count on the collaboration and efforts of teaching staff and, therefore, encountered better conditions for rapid headway through this particular stage of access to content, if they did not actually leap past it.

of teaching staff and, therefore, encountered better conditions for rapid headway through this particular stage of access to content, if they did not actually leap past it.

In a second stage, synchronic classes were introduced through different systems of video conferencing, which did not necessarily entail a change of pedagogical approach (Maggio, 2021). According to the findings of the UNESCO-IESALC (2021) report, most HEIs recommended to their teaching staff that they use virtual classrooms, but an equally large number recommended the use of video-recorded lessons. Close to 40% pointed to a combination of the two strategies, but also encouraged other means, such as the use of email and WhatsApp. Significantly, it should be noted that one-fourth of universities did not give recommendations to their teaching staff. Indeed, this is doubtless one of the typical characteristics of emergency remote education (ERE).

At the same time, it is also important to note that most HEIs surveyed by IESALC (2021b) used platforms that existed prior to the emergency (80%), while only 8% set up platforms specially in response to the situation and 11% stated that they were in the midst of implementing platforms (see Graph 2).

Graph 2. Prior existence of technology platforms for distance learning.

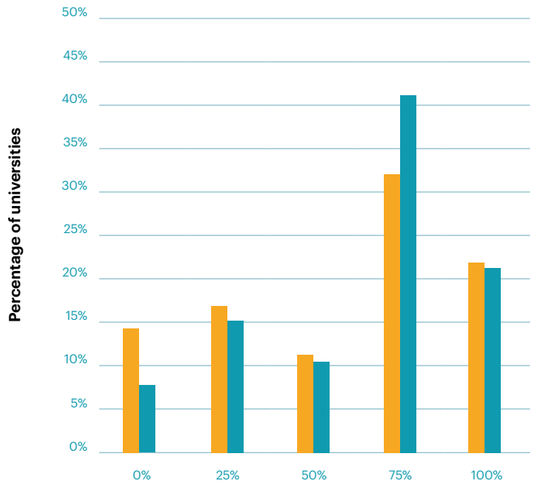


Source: IESALC (2021b)

According to the survey, the most commonly used platform was Moodle, although others included Google Classroom, Blackboard, and many other commercial platforms or platforms designed and developed by the universities themselves. However, the real use of platforms was far from universal, since only one-fourth of HEIs indicated usage. Also, only 68% of university instructors connected regularly, although the percentage rose to 80% in the case of students (see Graph 3).

1. See: https://es.unesco.org/themes/tic-educacion/rea

Graph 3. % of universities by volume of teaching staff and students connected, in 25-point bands.



Source: IESALC (2021b)

Among the barriers to better usage of platforms, the study found that universities largely highlighted the digital competences of their teaching staff, followed by those of their students, or by those of their teaching staff and students together. In second place, they mentioned limited internet access in households. Third, they noted the limited capacity of university servers to support the traffic generated during the emergency. Lastly, they indicated that the very design and configuration of platforms could create problems for their use and even become reasons for disconnection and quitting.

In addition, students achieved positive results when they engaged in a massive use of platforms and took advantage of resources at the intended pace and in the intended order. However, the excessive amount of readings, activities and evaluations proposed by teaching staff did have negative effects, overburdening and saturating students and generating a loss of meaning in the tasks. Remote classes had the advantage of being watchable on demand if they were recorded, enabling students to manage their own learning. To a large extent, however, remote classes were copies of traditional in-person classes, even going so far as to transfer responsibilities for learning to students by prioritising what Edith Litwin called "autodidactismo" or "self-directed learning" (cited in Maggio, 2021).

In conclusion, the vast majority of HEIs responded to the suspension of in-person classes by maintaining their activity through emergency remote education (ERE). It was an important policy and political decision to uphold the right to education. It was also a process sustained by instructors' commitment, students' adaptability and resilience, and the efforts of HEI staff who were more wrapped up in logistics and administration. However, it became clear that there was a low degree of ICTs incorporated into daily use and instructors needed to develop their digital competences more. Heightened development is required not only in times of crisis but also to enable HEIs to meet the opportunities and benefits of technological development in the twenty-first century in order to enhance higher education.

It is very likely that "forced digital immersion" has, in turn, enabled intensive development of instructors' digital competences, which could be capitalised on to make a qualitative leap in ways of teaching.

Emerging futures based on the experience of emergency virtualisation amid the pandemic

In line with the preceding analysis, emergency remote education (ERE) in HEIs constitutes a disruptive moment. While ERE grew out of a need to act in response to the adversity of the pandemic, it also drew on the capacities of institutional adaptation. The dramatic intensification of virtualisation has triggered an accumulation of experiences and the development of capacities that together create an opportunity and may become a launching point for changes in approaches to teaching and learning at tertiary level.

Given that the situation was unique, the future scenarios are uncertain and the results and processes have not yet been sufficiently evaluated and analysed. However, we can definitely say that nothing will be the same again after this experience.

It is very likely that every HEI that had a strong national context of connectivity and access, as well as its own investment and prior experience in virtual education and the use of technologies, has been able to cope with ERE better than HEIs that did not have such policies or programmes. We must not forget, however,

that there were students who lost contact or directly abandoned their studies because they could not afford tuition or could not carry on with their courses in digital format. The impacts on educational continuity should be analysed more fully by level (i.e. undergraduate and postgraduate levels), because there is evidence that the effects differed. For example, we need to determine the extent of the impact caused by students' living conditions relative to their care responsibilities, travelling expenses and other aspects that may have had a positive or negative effect on students' educational links and progress in their studies.

Starting from this reality, Maggio (2021) sets out a number of aspects that have become consolidated in practice: a) the prioritisation of basic content; b) the absence of changes in course syllabuses to account for teaching practices implemented when classes went virtual; c) virtual campuses with limited functionality that did not encourage innovation; d) the centrality of the instructor in models of video conferencing; e) the use of a wide range of resources and methods with fruitful lessons and experimentation; f) the experiences of student collaboration through networks and other mechanisms, in many cases without institutional oversight or evaluations (Maggio, 2021).

The experience of students was not homogeneous. Some rated virtual work positively and called for its continuation after the emergency. Others felt that they had been harmed because they lacked access or sufficient digital competences. The same thing happened with teaching staff (Miguel Román, 2020). Not all students welcomed the shift toward virtuality; they also reported unease over issues of connectivity, the unsuitability of work methods, and the lack of preparation among instructors (Alzaga & Bang, 2021).

The desired transformations require technology use and pedagogical innovation. To that end, the development of digital competences is important, but so are cultural changes and changes in educational practices. All of this takes time and calls for sustained action to consolidate efforts (Silva et al., 2019). During the pandemic, many instructors appear to have found new ways of teaching, while students discovered new ways of studying and learning. Thus, it appears likely that teachers have come to the realisation that content is not everything, but rather that they can prioritise particular aspects for further consideration through reflection, exchange and discussion. Another lesson may have come in the form of instructors adopting different formats as useful course elements (e.g. audio-visuals, schema, presentations and class summaries), distancing themselves from traditional lectures and seeking to deliver content more effectively. Technology-mediated exchange served not only as a replacement for some in-person spaces but also as a potential complement in the future. Another feature relates to the review of evaluation methods and the potential for continuous assessment.

In all likelihood, teaching staff who had prior experience and training in the pedagogical use of digital technologies have been better able to cope and engage in innovative performance. In this respect, HEIs that trained their instructors in digital competences will have made the transition to virtualisation more successfully and will now have a greater chance to carry on with the processes that they have instigated.

It is also important to bear in mind that any changes in the labour relations with teaching staff and the evaluations of students very much enjoyed institutional support and validation during the period of emergency. Many of these efforts, however, cannot count on the same backing in "normal" times, particularly if we take into account the return to in-person classes. It now becomes necessary to evaluate and consider these aspects in the context of the transformations to pursue.

With the gradual return to in-person classes, the issues that concern us are how to sustain the transition to hybrid or blended learning and where it will take us. These questions open up scenarios that involve risks and opportunities for the transformation of higher education. Based on an understanding that what is important now is to update, transform and adapt ways of teaching and learning in the twenty-first century while treating pedagogical and didactic innovation as the driving force, one of the worst scenarios would be nostalgia and trying to get back to the starting point or old normal. Yet, at the other extreme lies the transition to total virtualisation, underpinned by a phenomenon predating the pandemic and involving strong trends toward the commodification of higher education. This approach would involve the formulation of HEIs as content suppliers for students to pass courses and obtain degrees, hiring "content experts" to churn out content, given certain resources. The role of instructors would thus vanish, taking with it any chance of a thoughtful, critical education that produces knowledge. Such changes would not be desirable, since the core

aim is still the transformation of HEIs into institutions that are relevant, inclusive, sustainable, innovative and socially responsible. Above all, if the goal is to ensure an inclusive, just, ethical approach focusing on the human being, changes will be needed at different levels based on the recent experience in virtualisation.

Final considerations

Latin American HEIs started off with inequality of access to higher education and to connectivity and ITCs. Indeed, both factors became starkly clear with the suspension of in-person classes. Virtualisation emerged as a way to expand opportunities for educational continuity, but also deepened the inequality for some sectors in accordance with the installed capacities of each HEI and each country. The absence of sufficient, sustained policies of digital inclusion served to exclude various sectors or severely disrupt their ability to carry on their studies.

While it is still too early to assess the scope of any changes, some evidence points to the implementation of certain transformations that experts, innovative teachers and specialist areas in HEIs have sought for decades. It is likely, therefore, that hybrid or blended modes of teaching that combine in-person classes and remote learning will remain in place or at least that their advantages will be acknowledged and demanded by students. The reduction in travel and associated costs for households are strong factors. On the other hand, persistent inequality of access to connectivity was and still is an obstacle to the exercise of the right to higher education.

To support the right to higher education, HEIs and countries in Latin America need to consider a series of measures and challenges in the medium to long run:

1. needs to be extended to a greater proportion of the population. The investment in infrastructure and connectivity at the level of countries is crucial, as is the need to make devices more accessible to anyone who does not have access through the market.
2. HEIs must aim at improving the use of digital technologies for learning purposes, seeking changes in teaching and learning. These are pedagogical challenges that involve the organisation of teaching and the actors involved, primarily instructors.
3. The digital competences of teaching staff, which could not be developed through thoughtful reflection in the face of emergency remote education (ERE), now need to be developed to enable the application of pedagogical innovations. Instructor training and incentives for change need to be a sign of the future.
4. Given that deeper transformations will involve changes to curricula, regulations and administration that can require long processes, headway may be possible through gradual changes, including at the level of courses.
5. Steps must be taken to ensure that any initiated innovations will continue. To this end, institutional support is important, not only at the level of curriculum design but also in terms of the functional and institutional recognition of the teaching staff who are involved.
6. New institutional arrangements, including labour arrangements, must be implemented. It turns out, however, that obligatory change, uniformity and compulsion are not advisable. At a time of transition to hybrid or blended learning, a good way to begin the transformation right now is to permit the coexistence of a variety of course modalities, ways of teaching, and resources and practices, which would be optional for students and teaching staff alike.

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Technology ecosystems to rethink universities in the digital age

Mercè Gisbert Cervera

Abstract

The last two decades have been characterised by the widespread integration of technology into education, and universities and higher education have been no exception. During this time, the use and application of technology in teaching and management (more than in research) have been approached more from an instrumental perspective. Tools and applications have taken centre stage. Although most universities around the world have digitalisation plans, virtual campuses and numerous technological tools and resources, evidence of the reality and the pandemic have highlighted the fact that we are still a long way from achieving the digital transformation needed to tackle the challenges we face. It is necessary to go a step further by considering higher education institutions as a digital ecosystem from an organisational and strategic point of view. The perspective needed to ensure that this ecosystem is balanced involves adopting a shared vision of all areas (management, teaching and research) and all groups (teaching staff, students and administration and services staff), with a clear commitment to integration, equity and sustainability, both institutionally and socially.

1. Introduction

The nature and pace of the transformations affecting today's society require that we speed up processes and prepare ourselves for the prospect of constant change. Universities in general and higher education institutions (HEIs) in particular are no exception. Over the past two decades, we have associated the pace and necessity of change with the digital society and a level of technological development and digitalisation that has come to touch on every area of our lives. Digitalisation, however, is not the only aspect that we must take into account in HEIs. We also need to look at how digitalisation may or may not contribute to lessening the impact of other crises that now mark the reality in which we live: the climate crisis (if we cannot find a remedy, we may well be "killing off" our future), migrations (both voluntary and forced) that call for intercultural, multicultural and transcultural views of the educational process; and no less importantly a labour market in constant flux that has become an unavoidable part of the world today. Nor must we forget that HEIs train future professionals for a professional world that is being redefined every year, while we in the universities take as long as two to three years just to carry out the design, approval and verification of a new official educational proposal.

In addition to the foregoing list of crises, we must also include everything that the crisis caused by the Covid-19 pandemic has brought to light. On one hand, technology has the power by which to design alternative learning scenarios to meet the training needs of a far-reaching educational community through distance learning. Clearly, the evidence indicates that physical space can be overcome. Also, as we saw when we overhauled university degrees to adapt to the EHEA (the European Higher Education Area), the pace is set by the student (not by the content or instructor). Front and centre among the needs of HEIs is the need to review the entire digitalisation strategy. While HEIs may have become digitalised, they have made almost nothing automatic yet. Indeed, the whole university community (researchers, teaching staff, students, and administrative and service staff) has not yet sufficiently developed its digital competence. As a result, some digital tools and strategies have suffered from the fact that this particular community is literate but not competent. Lastly, the lack of a digital strategy (for teaching, research and management) has stood in the way of addressing the needs of the organisation "in real time".

Given the initial position set out above, the digital transformation of HEIs is a matter of training (aimed not just at digitalisation, but also at innovation and change) and institutional strategy, but it is also a matter of personnel strategy and being capable of adopting digital technology as a context, framework, scenario, strategy and tool. In no way is any of this intended to downplay the talent of the institution's human dimension. Rather, the challenge that it poses is to humanise technology

and turn it into the greatest ally of people. Technology on its own (much less artificial intelligence) will not bring major change unless it comes with a good institutional strategic plan, a sound plan to give people the skills required to use it well, and a sustainability plan to renew all equipment as often as needed to guarantee its smooth operation and give access to everyone on an equal footing. In short, we in the HEIs must seek to ensure access to technology on the same terms for all (equality) and in accordance with the needs of each (equity).

2. A changing digital context

The digitalisation of daily life and the adaptation of our environment to the digital format have heralded a clear societal transformation from which HEIs are not exempt. Accordingly, in terms of access to technology, we must not only consider the economic capacity of the public, which obviously matters, but also the level of competence needed to make good use of technology. With respect to the responsibility of education policies and HEIs to the goals of equality, cohesion and equity, it is necessary to promote measures that counteract the effects of the risks involved. During the pandemic, the threats of technology have surely become more apparent. At the same time, we must consider all of the opportunities that such an extreme situation has produced.

In terms of responsible public policies, international bodies first turned their focus to the importance of equality, cohesion and equity over two decades ago, highlighting the need to take steps to prevent the effects of what was then called the digital divide (OECD, 2001). In the first few years of the twenty-first century, digital inclusion was viewed as an essential step toward social inclusion in a technological world where people interact. In 2021, the European Commission (EC) presented a vision of digital goals for Europe in 2030. Then, in 2022, the EC issued a declaration on digital rights and principles for a human-centred digital transformation, including freedom of choice, security and protection, solidarity and inclusion, participation and sustainability (European Commission [EC], 2022). Over the past decade, some countries like Uruguay have become a clear touchstone by moving forward with a digitalisation plan like Uruguay's Ceibal Plan to furnish citizens with devices and training and set up observatories to monitor the results (Morales, 2019).

Bearing in mind the characteristics of the digital society, however, it is not enough to think only in terms of inclusion and exclusion. We must consider every principle that is required to ensure educational equity and that can be brought to bear in HEIs. The International Commission on the Futures of Education, which was set up by UNESCO in 2019 to pursue Agenda 2030 for Sustainable Development, put forward nine key ideas in 2020 that it regarded as fundamental for the future of education (International Commission on the Futures of Education, 2020). The nine ideas focus on strengthening education as a common good, promoting access to technology and even advancing international solidarity.

HEIs are also social institutions. As a fundamental part of society, they must aim to serve the public good and ensure that excellence and public service are compatible. This is a service that is oriented to the interests and needs of the context, but also useful for the promotion of international collaboration, which is what will be needed if we are to tackle major global challenges and push ahead in knowledge creation, science and human progess. For this to be possible, though, we must furnish students with access to techniques and strategies not only for their employability, but also to turn them into critical thinkers who are wise and able to grasp the world in which they find themselves. A digitalised world will require them to develop specific competences to face the challenges of technology.

In terms of their guiding aims, HEIs must seek to lessen the extent of inequity in the world. By way of example, two figures suggest how groups and geographic areas do not all enjoy the same opportunities: only 1% of refugees have access to higher education, whereas 36% of all other young people in the world do. If we could ensure that migrants have access to university on an equal footing, it would increase their social integration, freedom of action and quality of life (UNESCO, 2018).

Similarly, one of the latest publications produced in the context of Latin America and the Caribbean (CEPAL, 2021)[1], which sets out data collected in the wake of the initial waves of Covid-19, indicates that the gaps

1. Cepal study based on data collected in the following countries: Argentina, Bolivia (Plurinational State of), Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela (Bolivarian Republic of).

between different population groups as a result of poverty are trending upward in rural areas (among children and adolescents), in indigenous and Afro-descendant communities, and in groups with lower educational and economic levels.

Enrolment in higher education has grown in recent decades, rising from 17.1% in 1998 to 27% in 2008 to 38% in 2018, but the increase has been very uneven across the world's regions. Sub-Saharan Africa has the lowest level of access to higher education (5%) and Latin America's enrolment figure is less than half the equivalent for high-income countries (Altbach, 2016).

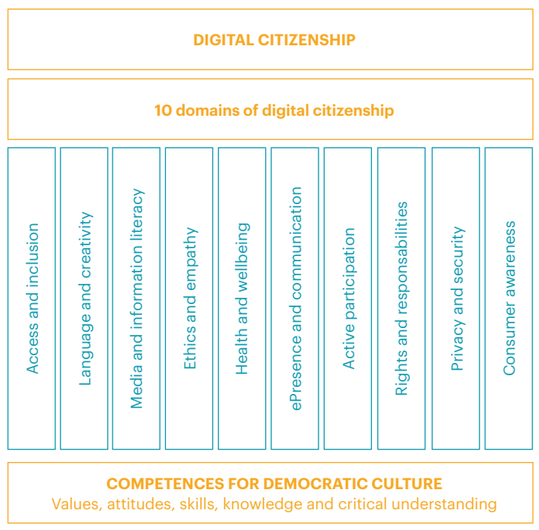
The Covid-19 pandemic has laid bare a host of serious issues, including shortfalls in different educational systems including HEIs. The pandemic has also intensified inequality stemming from significant problems of connection and access to the digital world. It has widened the educational gaps for the most disadvantaged groups and accentuated the lack of digital competence among a portion of instructors who need to be able to cope with the situation. The undervaluing of formal and non-formal educational spaces (both online and in person) has proven to be yet another major obstacle (Bas Vilizzio et al., 2021). Once normality returns, therefore, it is obvious that the right solution will not, under any circumstances, be somehow to return to the pre-pandemic situation, because it did not always prove efficient from the standpoint of managing institutional resources or providing access to training processes. The situation in which students found themselves during the healthcare crisis was not equitable in terms of connectivity or access to technology.

Computer access, connectivity and housing conditions are only some of the problems that have led to a rise in the number of students abandoning their studies. The post-pandemic scene, which is marked by the severe economic consequences of Covid-19, has witnessed increased unemployment and higher poverty among families. The gravity of the situation has been even more pronounced in less-developed countries and regions and among more vulnerable sectors of the population, such as students who hail from rural communities (Farnell et al., 2021).

In terms of equity, digital inclusion depends increasingly less on access to technology and increasingly more on the knowledge, attitudes and skills required to manage technology. In this respect, needs are being generated in the area of infrastructure (energy storage, updating devices, connectivity, etc.) and in the training required to make good use of technology (digital literacy, specialised skills, digital competences, etc.) (Gisbert & Lázaro, 2020).

Digital citizens are trained in formal, non-formal and informal contexts, very often learning invisibly everything that will help them to develop as social beings (Cobo & Moravec, 2011). Of the three contexts, the formal one is the one that we can control. It is also the one that will enable us to ensure that future citizens receive the training they require to meet the needs of today's digital society. HEIs, therefore, must also take on the role of developing the digital citizenship competence. The Council of Europe (Frau-Meigs, O'Neill, Soriani & Tomé, 2017) has summarised the 10 domains of this competence as shown below in Figure 1.

Figure 1. The 10 domains of digital citizenship



Source: Frau-Meigs, O'Neill, Soriani & Tomé, 2017

The failure to dedicate the time and resources needed to develop the 10 domains only serves to push the number of digital outcasts ever higher as technological development speeds up. From an educational perspective that includes higher education, this is a reality that we will be able to reverse and improve only if we are able to create genuine technological ecosystems for learning that are aimed at the development of the digital citizenship competence across the board and on equal terms for all (Gisbert & Lázaro, 2020).

In such an ecosystem, HEIs can play an important role by making available all necessary technological resources and infrastructure (libraries, learning and research resource centres, labs, digital classrooms, etc.) not only to their own academic communities, but also to the wider society. Particularly with respect to students, HEIs can play a key role by providing compensatory tools to students who need them. That is, when HEIs furnish all of the sometimes state-of-the-art technological resources mentioned above, the provision of compensatory tools can help to bridge shortfalls in the personal environments of students and therefore ensure that they receive the best possible training to meet the challenges of society and the labour market. Also, another good way to encourage the development of digital citizenship is for HEIs to promote open labs that take a social perspective and are free for any members of the public who wish to attend. Labs of this sort provide a space and pursue a strategy by which different participants seek together to renew the methods of innovation and creation through the use of processes that are collaborative and open, not only analogue but also digital (Lépine & Martin-Juchat, 2020).

2. HEIs addressing inequalities that stem from the knowledge gap and the lack of access to the internet and technological devices

Equity should be one of the core elements of all education policies to ensure a level playing field for each and every individual who seeks a quality education. While it is true that various international forums, government statements, and the education legislation of each country incorporates the principle of equity and inclusion, the reality is that there are still many groups who cannot gain access to education in general or to higher education in particular on an equal footing. Ethnicity, culture, gender and language are still variables that work against equality of educational opportunities. The problem proves even more serious in the case of ethnic minorities, indigenous peoples, migrants and people who have some type of special educational need.

We take the digital gap to be the distance between those who merely have access to technology and those who have the capacity or opportunity to use this technology. Following the conception of Tello (2007), I regard the digital gap as the divide between those who are connected to the digital world and those who cannot enjoy the benefits of such a connection. Lázaro, Estebanell & Tedesco (2015) define four factors that can promote digital inclusion and, therefore, social cohesion: 1) the strategic management of public policies; 2) a broad guarantee of access to technology; 3) the continuous training of educators on technology issues, and 4) evidence-based evaluation and monitoring of implemented policies.

We need to reflect on today's society and the new models of knowledge creation that it entails, consider the level of digital inclusion (rather than looking at the digital gap) that is needed to achieve the transformative education HEIs must ensure, and look thoughtfully at how citizens and professionals must be developed in a digital context. It is well past time to focus our discourses and strategies more on inclusion than on gaps. HEIs also need to be aware that they often fail to take account of the socio-economic profiles of their students, especially in the case of countries in the so-called First World. Our HEIs must make the transition from an academic perspective to a social one.

Moreover, we need to engage with stakeholder groups, such as HEIs, NGOs, governments, international organisations, migrant associations and human rights organisations, in order to work together on this transdisciplinary subject, and we need to put our heads together to improve on our shortcomings. International cooperation will become important not only, for instance, to share computer tools, platforms and experiences in digital learning, but also to collaborate in the training of educators. The creation of learning scenarios in digital contexts offers the potential added value of internationalisation and the possibility of access to training anywhere, anytime – that is, at any point in our lives when education or training happens to be most suitable for us.

Digital inclusion is connected to a variety of processes: a community's availability of telecoms infrastructure

and networks; accessibility to services offered by technology; and the competences and knowledge needed to make good use of technology. At the same time, the literature on technologies tends to present them as a major factor in equalising opportunities and connects them to public policies that need to be enacted to transform reality. In this respect, the discourse needs to shift its focus toward forms of knowledge access, exchange and co-creation by individuals and communities (Gisbert & Lázaro, 2020; Lago Martínez et al., 2016; Morales, 2019).

The various applications that have been implemented and made available to society at low cost, or indeed at no cost, have turned millions of users into captive "customers" of strategies, interests and even worldviews. So much so that the large corporations that are involved should be required – on the grounds of corporate social responsibility – to ensure that a share of their profits is ploughed directly back into society so that it becomes a better place each day for citizens to live (Picard & Pickard, 2017). If this were the case, the non-formal context in question would become an important ally of HEIs, facilitating access to information much more generally. HEIs, therefore, should seek to involve this non-formal context as an integral part of their training proposals, while also ensuring fundamental ethical principles and an individual and collective commitment to the responsible use of technological resources (Carrera et al. 2016).

Certainly, one of the most interesting examples of how to put technology, training and knowledge at the fingertips of less advantaged sectors of the population with the help of low-cost devices and a worldwide reach is the initiative of Salman Khan and his Khan Academy. Originally, Khan created Khan Academy only to offer private classes from Boston to students in New Orleans. Soon, however, the experience spurred him to design and develop a worldwide educational system with low-cost devices, a good didactic component and pleasing voices. It is no longer necessary to have expensive hardware, highly prepared staff, specific venues, installed servers or a distribution network, if you can use the internet as your distribution network, YouTube to store videos freely, a conventional computer with a camera, and a graphics tablet that is able to run free or low-cost recording software, all by following a "do it yourself" philosophy (Sheikh et al., 2021).

Daphne Koller and Andrew Ng at Stanford University set out to build a highly successful course with the same technologies and came up with Coursera (Mass et al., 2014). Anant Agrawal also pursued a similar approach, first with MITx and then with edX in conjunction with MIT and Harvard University (Pujar & Bansode, 2014). The technology was mature. From that point onwards, it was only necessary to apply it intensively. In the first half of the last decade, MOOCs became fashionable even if they did not persist as a strategy. The reality of the pandemic, however, has shown us that having MOOCs implemented would have helped to make the lockdowns more bearable. We would have had material and resources accessible on any device, anywhere and anytime. Both the experience of the Khan Academy and the experience of MOOCs as a mode of course delivery can enable large-scale access to training and therefore contribute to inclusion and equity in technological contexts with only minimal necessary infrastructure.

4. Institutionalising the digitalisation of HEIs

In recent years, the talk at HEIs has turned to blended and flexible learning as well as hybrid learning models. This particular narrative gained oxygen during the pandemic, but the reality is that online resources at in-person HEIs have served only to supplement the prevailing mode of instruction, which is still synchronous and on site. Even so, the pandemic has demonstrated the need to design training activities for delivery through technologies designed for digital environments and drawing on supplementary human support (in person or online).

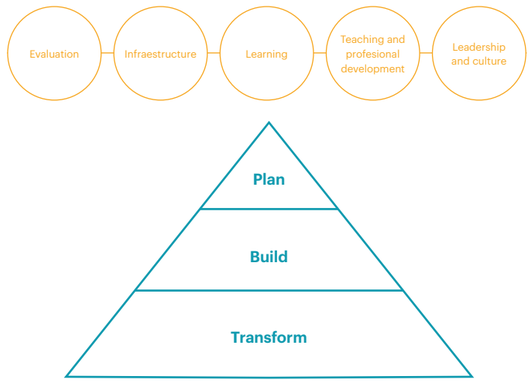
As a result, it is now clear that **HEIs are not so much about what they teach as they are about how to teach in a manner interconnected to the world, giving meaning and skills to students so as to enable them to engage in their own transformation while also providing them with the tools needed to develop as citizens** (Boix, 2016). This is one of the major contributions that we in HEIs can make to ensure inclusion and equal opportunity, and we can make it happen by putting a set of overarching competences into our training programmes. Prior to the pandemic, the global education movement was already gaining ground (Camilleri, 2016). Indeed, one of its aims is for HEIs to be cognizant

of the need to foster the principles of respect, inclusion and especially equity.

Viewed overall, these approaches, which have been designed in technological environments, call upon our imaginations to transform the context of HEIs gradually over time according to a plan. However, we will not be able to do so with a top-down strategy, because the approaches also entail a process of cultural change that will take place at most in the medium term. That said, real change will be possible only if there is good institutional leadership, professional growth for educators, optimal infrastructure and a well-planned evaluation process that can provide evidence of students' development in terms of learning results, from the cognitive and emotional perspectives (see Figure 2).

The perspective depicted in Figure 2 can take different forms in practice. All involve teaching and learning strategies that are flexible, inclusive and enable users to develop in terms of their perspectives and needs. Maker spaces (Hynes & Hynes, 2018), open labs (mentioned earlier) and living labs (van den Heuvel et al., 2021) are all examples of spaces conceived with a functionality that is oriented toward the co-creation of knowledge and the application of new learning methods. They are also spaces where analogue and digital tools co-exist. In general, the strategy adopted to promote learning in such spaces becomes as important as, or even more important than, whether the available technological

Figure 2. Articulating the technological scenarios for learning from a pedagogical perspective



Source: Gisbert & Lázaro, 2020

devices are state-of-the-art. Even so, there is still a tendency to focus the discussion more on the technology than on the teaching strategy.

As an example, we have the Monterrey Institute of Technology with its open lab project,[(2)] specifically the Mostla project, which is a lab to reinvent education using state-of-the-art technology tools. Nonetheless, the truly significant aspect of the experience is the contribution of the Mostla project to the professional development of current and future educators.

Technology-based open and living lab concepts enable us to ensure access to all learners on an equal footing as long as the conditions for connectivity and access are optimal. We must not forget, however, that we can also imagine spaces of this kind that are not strictly digital. Indeed, we will encounter the blended or hybrid approach in many of the cases.

The pandemic has once again revived the debate over the quality of higher education and its genuine contributions and limitations. On top of an educational model designed for 100% in-person learning in which technology has typically played no more than a token role, we have suddenly been compelled by reality to implement an entirely remote learning approach. The learning process in general and the evaluation process in particular have had to be redesigned from scratch. Moreover, the resulting evaluation process has drawn sharp criticism. It has become clear yet again that not only do HEIs need to promote access to knowledge, but they must also equip students with critical thinking skills and make them capable of interacting with other students in the co-creation of knowledge (Farnell et al., 2021).

Ultimately, HEIs must focus on students, their needs and their links to every part of the institution. That is, personalised pathways must be developed for each student. Also, we need to imbue our institutional strategies with the views, perceptions and experiences of students. They need to be considered in the design of traditional process maps and attention must be given to the communication channels and relational mechanisms that they use. Only in this way will we be able to produce a 360-degree view of student needs as well as the needs of every other agent who takes part in the educatio-

2. For more on the Mostla project, a lab to reinvent education, see: https://observatorio.tec.mx/edu-news/mostla-laboratorio-para-revolucionar-la-educacion

nal process, including administrators (management), industry (transfer), society (third mission) and social collaborators (partners and stakeholders) (CRUE, 2017).

5. HEIs must lead the change toward sustainability

We must take on new challenges in terms of learning standards, pedagogies and forms of evaluation and certification, which will require contextualisation, analysis and improvement (if necessary). While the trend already existed, the migratory crisis has grown significantly more intense since the outbreak of the pandemic (UNESCO, 2018). Indeed, it is intertwined with climate change issues and will only be more so in the decades to come. The pandemic will eventually disappear, but climate change will continue to pose an imminent threat for all societies. However, we must not view sustainability solely from the perspective of climate change. It is also necessary to see sustainability in terms of ensuring access to higher education for immigrants and refugees and making it a duty of HEIs to ensure educational equity.

To guarantee sustainability, we need to address the issue by means of a strategy for transformation. In this vein, HEIs need to take the following steps (based in part on CRUE, 2017):

- **Define a vision** that looks at how digitalisation brings value to the institution.
- **Undertake processes of culture change and organisational change:** this is the core challenge.
- **Redefine processes:** this is the first step toward change. Finish the "industrialisation of processes" and move on to automation and then innovation and change.
- **Define the point of contact for students,** which is moving increasingly closer to everything digital.
- **Be reachable** anywhere, anytime and from any device. The university does not yet have an answer to this issue.
- **Include** the views of students in process maps.
- **Design technology services** (advanced data analysis) to monitor reality in real time.
- **Rethink the university model.** Shift from an analogue to a digital university. Generic online attention and personalised on-site attention. New educational techniques and strategies (e.g. MOOCs not as an end, but as a means).

Bearing in mind that we live in an increasingly liquid context, any strategy that we define will need to be flexible enough to ensure that HEIs can rise to the challenges of meeting the needs of learners and responding to the local and global context through the transfer of research results and newly created knowledge.

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2.6 International Higher Education. From competition to collaboration

International Collaboration from an African Perspective: Strengthening Partnerships for our Common Goals

Oluwaseun Tella

Abstract

Immediately after Africa's independence in the 1950s and 1960s, many universities were established alongside the few founded during the colonial era. Against the colonial backdrop and with a resolve to safeguard its newfound independence, the continent opted to Africanise its universities rather than implementing strategies of internationalisation and collaboration. However, the globalisation of universities exemplified by the world ranking of higher education institutions and the attendant quest for global relevance, among other factors, dictated that Africa would have to abandon this agenda in favour of internationalisation. The recent call for decolonisation of African universities ignited by the 2015 student-led protests across South Africa (#FeesMustFall) begs the question of the relevance of African universities to the continent's developmental goals as its higher education sector wallows in a myriad of challenges such as Eurocentric epistemology, weak digital technology, low research output, poor infrastructure and outdated teaching methods in the era of the fourth industrial revolution and the ongoing COVID-19 pandemic.

Introduction

Despite the fact that many African states gained independence in the 1950s and 1960s, it was only in 2005 that Africa adopted a regional strategy for education, science and development – Africa's Science and Technology Consolidated Plan of Action (CPA) (Woods et al., n.d.). The CPA has two key objectives, namely, to enhance Africa's capacity to apply science, technology and innovation to eradicating poverty and achieving sustainable development, and to enhance the continent's contribution to global scientific knowledge and technological innovation (Woods et al., n.d.). These objectives should be viewed against the backdrop of the quest to strengthen African policies on science, technology and innovation and foster collaboration among African countries by sharing experiences and policy learning in pursuit of the internationalisation of their universities. Although the number of African universities skyrocketed from 100 to around 2,000, and enrolment increased from about 250,000 to around 14 million between 1970 and 2018 (Howie, 2019), these institutions continue to confront numerous challenges such as inadequate infrastructure, infinitesimal research output and anachronistic teaching, prompting the formulation and implementation of alternative strategies.

African Frameworks and Strategies on Higher Education

The African Union's (AU) 2016 Continental Education Strategy for Africa 2016-2025 (CESA 16-25) states that "harmonised education and training systems are essential for the realisation of Intra-Africa mobility and academic integration through regional cooperation", while its 2019 Science, Technology and Innovation Strategy for Africa 2024 (STISA-2024) seeks to "accelerate Africa's transition to an innovation-led, knowledge-based economy" (African Union, 2016, p. 7; 2014, p. 11). These strategies reflect the AU's realisation that collaborative efforts in the area of education are fundamental to the continent's path to development and that a knowledge-based economy is the panacea for Africa's developmental woes. Agenda 2063, a normative and strategic framework, seeks to enhance African growth and development in a bid to enable the continent to become a global force. It recognises the potential salience of higher education in achieving these objectives, raising the need to invest in capacity building, especially in critical disciplines such as natural science and technology, as well as the social sciences and humanities, in order to change the mind-set of African people (Addaney, 2018).

In a bid to implement the CESA, the Pan-African University (PAU) was officially launched in 2011 (although it was conceived in 2008) to enhance research promoting African development. The PAU seeks to improve the region's education standards and promote science and technological innovation, with the ultimate objective of fast-tracking regional integration against the backdrop of quality higher education in specific fields (Jowi, 2012).

Collective acknowledgement of the role of African higher education in promoting social and economic development (Woods et al., n.d.) has implications for collaboration among African academics and students. The African Union Commission (AUC) focuses on five research areas in selected higher education institutions that have been referred to as Pan-African University Institutes across the continent's five key sub-regions. These include Life and Earth Sciences at the University of Ibadan, Nigeria (West Africa); Basic Sciences, Technology and Innovation at the Jomo Kenyatta University, Kenya (East Africa); Governance, Humanities and Social Sciences at the University of Yaoundé II, Cameroon (Central Africa); Water and Energy at the University of Algeria (North Africa); and Space Science for Telecommunication, South Africa (Southern Africa). The PAU thus facilitates policy-informed multidisciplinary research programmes that are potentially critical to decision-making on the continent through its focus on collaborative, competitive and development-oriented research to fast-track Africa's economic and social development.

One of the key targets of Agenda 2063's first 10-Year Implementation Plan is the establishment of an African virtual and e-university. It is envisaged that by 2063, 70 percent of secondary school graduates will be enrolled in higher education institutions, 70 percent of whom will graduate in science, technology and innovation programmes, thereby enhancing the human capital that has a significant effect on Africa's development (African Union, 2015). Agenda 2063 further envisages a harmonised education system championed by the PAU, with centres of excellence across Africa and human capital that would remain on the continent rather than becoming part of the diaspora. Other key initiatives include the 2014 revised Arusha Convention, which seeks to promote mutual recognition of academic qualifications; the PAU; the AUC's Mwalimu Nyerere African Union Scholarship Scheme established in 2007, which encourages African students to study in top universities on the continent; and the African Quality Rating Mechanism (AQRM), which seeks to promote a culture of quality in African institutions (African Union, 2015). However, implementation of these initiatives has been slow at best.

The Call for Decolonisation and Harmonisation of African Higher Education

African higher education is not exempt from the Afropessimism that characterises discourse about the continent. While higher education was a public good in the immediate period after independence, the economic crises in the 1970s and 1980s and their attendant structural adjustment programmes resulted in a significant cut in African governments' budgets for higher education, leading to the decline of premier universities such as the University of Ibadan, in Nigeria, and Makerere University, in Uganda (African Union, 2015), as well as their decolonial projects.

The recent call for decolonisation and Africanisation of the curriculum was ignited by the 2015 #FeesMustFall student-led movement in South Africa. The campaign underscored the need to transform the objectives, content and methods of curricula in order to produce graduates that understand the needs and imbibe and affirm the continent's culture and values (Daniel et al., 2019). In a nutshell, Africanisation in this sense does not connote delinking from the West but promoting African consciousness towards the "fusion of epistemologies" (combining African and other forms of knowledge) to tackle the continent's challenges (Higgs, 2020). This is crucial as, following decades of decolonisation, 21st century African universities still wallow in the hegemony of Western thought and the relegation of indigenous knowledge to the backburner, as reflected in Eurocentric and Americentric content and methods which often do not reflect African realities, especially the continent's developmental needs. African higher education is thus failing to enhance the quality of life of African people (Daniel et al., 2019).

"The harmonisation of higher education in Africa is a multidimensional process that promotes the integration of the higher education space in the region. This objective is to achieve collaboration across borders, sub-regionally and regionally, in curriculum

development, educational standards and quality assurance, joint structural convergence and consistency of systems, as well as compatibility, recognition and transferability of degrees to facilitate mobility" (Teferra, 2012: para.1). Indeed, the harmonisation of African higher education has been championed by key organisations including the AU, the Association of African Universities (AAU) and the Association for the Development of Education in Africa (ADEA) (Knight, 2017). This has found practical expression in the establishment of the PAU, an increasing number of regional research and university networks, burgeoning intra-regional student mobility and the regional quality assurance framework (Knight, 2017).

In a bid to enhance African higher education's impact on the continent's development and to compete globally, there is a need for more research and teaching collaborations among universities across the continent and beyond, serious investment in digital infrastructure and e-learning programmes, and student-centred teaching. Emphasis should be placed on research that addresses the continent's socio-economic and political development and blended learning should be implemented in such a manner that convenience, affordability and increased accessibility (Daniel et al., 2019) do not jeopardise quality.

Internationalisation of African Higher Education

The establishment of universities across Africa in the immediate period after independence in the 1950s and 1960s prompted the newly independent states to participate in the UNESCO Conference on the Development of Higher Education in Antananarivo, Madagascar in 1962. Even at this early stage, they had realised the salience of internationalisation of African universities with a view to "increasing their chances of collaborating with other universities in Europe and Africa, as well as helping their students to have world-class training which would enhance their ability to compete with graduates from across the world" (Andoh & Salmi, 2019). However, only lip service was paid to this issue as post-independent African states prioritised Africanisation of the continent's universities. This led to the emergence of decolonial schools of thought such as the Ibadan School of History in Nigeria, championed by scholars such as Kenneth Dike and Ade Ajayi; the Dar es Salaam School of Political Economy in Tanzania, supported by academics like Walter Rodney and Ernest Wamba dia Wamba; and the Dakar School of Culture in Senegal, promoted by scholars such as Cheikh Anta Diop and Samir Amin. However, the end of the Cold War in the 1990s and the emergence of world university rankings in the 2000s reignited the quest for the internationalisation of African universities. Indeed, by 2003, the Universities of Ibadan, Ghana, Nairobi and Dar es Salaam had adopted an international mission and established offices for international programmes to enhance the mobility of staff and students and secure international research grants (Andoh & Salmi, 2019). In contemporary times, African higher education institutions have responded to deepening global interdependence by strengthening the capacity of their international offices. For example, Stellenbosch University in South Africa, the University of Dar es Salaam in Tanzania and Kenya's Kenyatta University's key offices include an office of the Deputy Vice-Chancellor International, a Directorate for Internationalisation and a Centre for International Programmes and Collaborations, respectively (Andoh & Salmi, 2019). This implies that international offices now play a broader, more sophisticated role, promoting cooperation not only with other universities but also entities such as donors, foreign embassies and even overseas countries, raising grants for critical research areas and enhancing the global stature of African universities. There has also been increasing interest in African universities developing joint master's and doctoral programmes with universities across other regions. The University of Johannesburg, South Africa, and the University of the West Indies, Barbados, recently developed a joint master's degree in Global Africa. Similarly, the Universities of Cape Town and Zambia have partnered with the United Nations (UN) to develop a transdisciplinary master's degree programme in Sustainable Mining Practices (Slippers et al., 2015). Indeed, South African universities seem to take internationalisation more seriously than their African counterparts. This is seen in the efforts of universities such as Cape Town, Stellenbosch and Free State, which have established African regional centres. Stellenbosch has established the African Doctoral Academy while the University of Johannesburg has collaborated with regional and international organisations such as SADC (Andoh & Salmi, 2019) and the African Caribbean and Pacific Group of States (ACP).

African Higher Education and External Collaboration

The 5th African Union-European Union summit held in 2017 highlighted the need for investment in education, science, technology and innovation (STI) and skills development (Zygierewicz, 2019). In terms of higher education, the following key priorities were set:

a) promote the mobility of students, scholars, researchers and staff;

b) harmonise higher education in Africa;

c) enhance quality assurance and accreditation in African universities; and

d) develop centres of excellence in Africa, in particular through the PAU (Zygierewicz, 2019).

In 2019, the European Commission, in partnership with the AU Commission, held a conference called Investing in People, by Investing in Higher Education and Skills in Africa (Zygierewicz, 2019). The Erasmus+ programme provides a framework for the EU and AU partnership. In 2018, 16,000 African academics and students benefitted from the previous Erasmus+ (2014-2020), with the number rising to 35,000 in 2020. Under the current programme (2021-2027), 105,000 African academics and students are expected to benefit by 2027 (Zygierewicz, 2019).

It is against this backdrop that several European countries have realised the potential of partnering with African universities and developed various programmes with the latter to achieve key objectives. For example, in light of Germany's key foreign policy objective of addressing climate change, the government's WASCAL research programme has established ten graduate schools in West Africa to educate African students and policymakers in the areas of climate change and land management (Andoh & Salmi, 2019). The German Academic Exchange Service (DAAD) in Africa focused on five key areas in the period 2015-2020:

a) Improving the qualifications of university lecturers through scholarships in Germany and at well-performing universities in sub-Saharan Africa;

b) Building capacity for graduate education and research at African universities;

c) Strengthening universities to become effective players in promoting societal development, especially through degree programmes that are relevant to current and future labour markets, applied research and consultancy, knowledge transfer to industry, promoting entrepreneurial commitment among graduates, social and legal expertise and developing a culture of dialogue in civil society;

d) Facilitating German universities' access to the African continent and disseminating knowledge about Germany in Africa, building on existing interest in cooperation and opening up additional opportunities through appropriate funding programmes; and

e) Strengthening synergies and co-operation by reinforcing the ties between German and African players, especially with Africa's regional university associations (AAU, CAMES, IUCEA and SARUA) (DAAD, 2014).

Similarly, Sweden has partnered with a number of African institutions, especially Southern African universities. For example, drawing on Swedish International Development Cooperation Agency (Sida) funding, Sweden has collaborated with universities in Rwanda, Tanzania and Mozambique in key science disciplines including Mathematics, Computer Science, Physics and Ecology (Stockholm University, 2019). This has been accompanied by high profile delegation visits to Africa. For example in 2010, a delegation from Stockholm University, including its former Vice-Chancellor Kåre Bremer and the Pro Vice-Chancellor, visited the University of Cape Town in South Africa to discuss the universities' student exchange programmes; and in 2016, the Swedish Higher Education Authority (UKÄ) and the Swedish Foundation for International Cooperation in Research and Higher Education (STINT) arranged for 13 presidents of Swedish universities to visit the Universities of Johannesburg, Pretoria, the Witwatersrand, Stellenbosch, and the University of Botswana to strengthen existing partnerships and develop new ones (Stockholm University, 2019). Moreover, African universities have sent delegates to their counterparts in Sweden for various purposes. In 2017 and 2018, student union executives from the University of Nigeria visited the Stockholm University Student Union and in 2019 representatives of a Tanzanian research funder, the Tanzania Commission for Science and Technology (COSTECH), visited the Swedish External Relations and Communications Office to share their respective experiences in research communication and social media

provided by the Swedish Programme for Information and Communication Technology in Developing Regions (SPIDER) (Stockholm University, 2019).

Beyond Europe, in 2000, four key American foundations, the Carnegie Corporation, Ford Foundation, MacArthur Foundation and Rockefeller Foundation, formed the Partnership for Higher Education in Africa (PHEA) to coordinate their activities in strengthening the capacity of higher education in Africa (USAID, 2014). US-Africa partnerships have taken the form of cultural exchanges, public-private collaborations, academic exchange programmes, research collaborations and broader university partnerships. The Carnegie Melon University's campus in Rwanda, which offers master's degrees and boasts full-time staff and operations, is the first American university of its kind in Africa.

China-Africa collaboration is evident in the Chinese government's scholarships to African students, partnerships between Chinese and African universities, the ubiquity of China's Confucius Institutes across African universities, China's provision of educational materials and financing infrastructure projects at African universities. The establishment of a Confucius Institute in Africa involves a partnership between China and a host African university, as the Institute is managed by two co-directors – one is Chinese and the other a member of the host institution's academic staff. China is a major funder of infrastructure projects across African universities. For example, Beijing provided a $40 million grant to fund a library at the University of Dar es Salaam (Ngalomba, 2017). China also often makes pledges to African countries at the Forum of China-Africa Cooperation (FOCAC). In 2018, during the last FOCAC meeting, the Chinese President Xi Jinping announced 50,000 scholarships and 50,000 seminar and workshop opportunities for Africans (Zhu and Chikwa, 2021).

Challenges Confronting African Higher Education

There is no gainsaying that African universities are characterised by a myriad of challenges from institutional to intellectual, pedagogical, political (Zeleza, 2002) and financial, to cite but a few. These are further complicated by the obstacles that confront many prospective students, including the increasingly high cost of tertiary education on a continent that is home to the largest number of poor people, with 38 percent of the population living on less than $1.90 a day in 2018 (prior to the emergence of COVID-19) (van Manen et al., 2021). It is thus not surprising that the 9.4 percent higher education enrolment rate in sub-Saharan Africa in the same year was significantly below the 38.4 percent world average. This has resulted in two key trends: first, many prospective African students now look beyond the continent (to countries such as the United States, China, the United Kingdom, Canada and France) for their education (with around 375,000 studying abroad in 2017); second, the proliferation of private African universities in a bid to meet increasing demand for higher education (Manen et al., 2021). Indeed, the number of private universities on the continent grew from 35 in 1969 to 972 in 2015, with significantly higher tuition costs than public universities, resulting in a shift from access to higher education as a public good, to access by a privileged few (Daniel et al., 2019). Increased demand for higher education and the attendant rise in the number of universities on the continent has exerted further pressure on the staff-student ratio as there are insufficient staff to teach the burgeoning number of students. Academics have a heavy teaching load and consequently less time for research. It is no surprise that African universities do not fare well in global research output; the continent accounts for 2.1 percent of global academic publications, significantly below Asia's 33.1 percent and Europe's 32.9 percent (Daniel et al., 2019).

In the era of the fourth industrial revolution and the ongoing COVID-19 pandemic, African higher education's weakness in terms of digital infrastructure has been laid bare as a large percentage of African students struggle to work remotely due to lack of access to a reliable Internet connection, a stable electricity supply and personal computers, as well as expensive data; while academics have struggled to adjust to the digital realities of teaching and conducting research remotely. The continent needs to take advantage of the opportunity presented by the restrictions imposed by COVID-19 to develop its digital education, as it offers many potential benefits such as lower direct (tuition fees) and indirect (such as transportation and accommodation) costs of education, flexibility for students (learning at home or places of their choice and relatively at their own pace) and improved opportunities to combine study and work (van Manen et al., 2021). The University of South Africa (Unisa) and National Open University of Nigeria (NOUN) are germane in this regard. The former is one of the largest open distance learning institutions in Africa with about 400,000 students and the oldest distance learning university in the world. The NOUN is also one of the leading open distance learning universities on the continent with around 500,000 students and 78 study centres across Nigeria. A recent report by eLearning Africa indicates that 83 percent of Africans support the transformation of the continent's curricula for distance learning in the future (eLearning Africa, 2020).

Recommendations

To achieve innovation, African universities need to take investment in quality teaching and rigorous research more seriously.

Increased collaboration among African universities is important if African solutions are to be found to African challenges, as such partnerships can potentially have wider impacts on continent-wide policymaking and implementation.

There is often a gap between African universities' internationalisation agenda and the focus and targets, such as science, technology and innovation, of key regional bodies like the AU, SADC and Economic Community of West African States (ECOWAS). It is therefore imperative to align African universities' vision with the targets of these key regional organisations.

The quest for internationalisation should not be the exclusive preserve of international offices, but part of the day-to-day activities of African universities and must be reflected in their key responsibilities, including teaching, research, community engagement and academic citizenship.

The efforts of the African diaspora based at universities abroad are critical to the bid to internationalise African universities, as they are well placed to Africanise the curricula they are responsible for by, for example, prescribing African texts and offering Afrocentric syllabi.

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The future of international higher education and international academic collaboration: Strengthening partnerships for our common goals

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Abstract

To address growing global challenges, including economic and geopolitical tensions, racism, nationalism, climate change, and the COVID-19 pandemic, international academic collaboration is more necessary than ever. In this report, we predict future international academic collaboration or cooperation dynamics in the global context.

We describe nine key themes to be taken into account to understand future short- and long-term challenges in international higher education and international academic collaboration: (i) Fundamental global macro-level trends affect international higher education; (ii) International academic collaboration plays a key (though contextualised) role in higher education; (iii) COVID-19 will have a persistent impact on international collaboration; (iv) Physical academic mobility will resume with revised assumptions/rationales; (v) Greater emphasis will be given to locally-based international cooperation; (vi) Virtual collaboration will grow in frequency and importance; (vii) Reduced public funding for international academic collaboration in some contexts will likely exacerbate existing inequalities; (viii) Shifting geopolitical allegiance will affect who is collaborating with whom; (ix) Institutions may increasingly view international academic collaboration in relation to society. The paper concludes with a brief discussion of the implications of these trends for the future of international higher education.

Over the past decades, two main, and — to a certain extent — contradictory, trends have dominated the development of international higher education: its massification and its role in the global knowledge economy. The increasing demand from a rising middle class for access to higher education, particularly in contexts where the supply of higher education is insufficient to meet such demand, has led to a dramatic increase in the number of students seeking higher education across borders, with the number of internationally-mobile students surpassing 5 million in 2017 (IOM GMDAC, 2020). At the same time, recognition of the importance of top-quality research and education for the knowledge economy has resulted in a selective emphasis by governments around the world on excellence initiatives which benefit a limited number of top universities at the cost of general support to tertiary education, a process which has exacerbated the divide between a small elite group of countries, universities, scholars and students, and the rest of global higher education.

These tensions influence many aspects of current international higher education, including international academic collaboration. Recent stresses — namely the COVID-19 pandemic, but also global challenges such as climate change, increasing geopolitical tensions, economic recession and rampant racism, nationalism and populism in many parts of the world — are likely to both impact these trends and further solidify inequalities, within and between systems. At the same time, international academic collaboration is more necessary than ever, if we are to have any hope of addressing the substantial global challenges we face.

Predicting the role of international academic collaboration or cooperation in relation to the future of international higher education requires a clear understanding of the current macro-level changes or global trends that lay the foundation for trends in national and international higher education, as well as the meso-level changes at the systemic level. In this contribution, we describe nine key themes that must be taken into account in order to understand the short and long-term future challenges in international higher education and international academic collaboration.

1. Global macro-level trends lay the foundation for understanding trends in international higher education.

Globalisation has brought about social, economic and political changes that influence all systems in the world, including higher education systems. Increased economic competition between countries has created a **global knowledge economy** which privileges those with the advanced skills and competencies fostered by higher education, while political globalisation has resulted in a complex system of global governance which affects the development of higher education policy around the world. These dynamics have in turn affected other social systems which impact higher education. For example, economic globalisation has led to an expansion of the middle class, resulting in a larger number of families with both the means to support children through higher education and the aspirations to do so (Marginson, 2016). Global campaigns in support of universal primary education have also increased the number of secondary school graduates, leading to rising numbers of aspiring higher education applicants.

One clear impact of globalisation on higher education has therefore been the **massification** of systems around the world. The number of students enrolling in higher education has been increasing for the last seven decades. Although there are no exact figures, there are presently more than 200 million students around the world studying at more than 20,000 higher education institutions (IAU/UNESCO, 2021; UIS, 2019), and the massification of higher education is continuing, especially in emerging economies. As a result of this rapid expansion, many new private providers have emerged on the market. The nature of the academic profession has also changed, as systems have required additional staff to support growing student populations. In some parts of the world, this has meant hiring faculty members without doctoral degrees; in others, it has led to a proliferation of part-time faculty (Altbach, Reisberg & Rumbley, 2010).

Political globalisation has also supported the global spread of neoliberalism as a key philosophy influencing the structure and evaluation of our social systems, including higher education. Institutions have fundamentally changed their modes of governance to adopt more corporate structures, and new players in higher education systems, such as regional accreditation bodies and quality assurance agencies, have proliferated. Neoliberalism's embrace of **competition** as the best driver of quality has also had a profound influence on global higher education, particularly via the creation of global university ranking systems. Since rankings mostly value research output, universities tend to pay more attention to research than teaching or service to society. As a result, higher education institutions compete for qualified international and local faculty, international students with strong educational backgrounds (especially in STEM), and funding. Furthermore, rankings influence how nations and institutions govern their universities and structure their higher education systems. There is now enormous emphasis on the creation of world-class universities and metrics that gauge quality in terms of the indicators most valued in the rankings (Hazelkorn, 2015).

Despite the economic and political pressures on countries to expand higher education systems – and to compete with one another via the higher education industry – **public spending on higher education has decreased** in many parts of the world. This is partly due to general circumstances of austerity but has also been caused by neoliberal understandings of what makes a strong higher education sector. The impacts of austerity have been pronounced, particularly in terms of student funding arrangements and pressures on universities to diversify their revenue sources through, for example, the creation of for-profit spin-offs and other income generating activities (Altbach, Reisberg & Rumbley, 2010). This trend has also been exacerbated by COVID-19, which has led to increased costs and reduced revenue in universities around the world.

Finally, globalisation has enabled a **technological revolution** around the world, with enormous impacts on higher education. Technology has fundamentally changed classroom dynamics – even disrupting the very notion of a "classroom" in many contexts – and opened up new opportunities for virtual collaboration. At the same time, technological developments have resulted in increased access to international travel, as transportation has become more affordable throughout the world.

2. As a result of many of these trends, international collaboration plays a key role in all higher education systems, although the specifics of how international collaboration manifests depends significantly on the context.

International collaboration has arguably been the cornerstone of the internationalisation of higher education policies, which have been developed in response to globalisation in most countries in the world. International academic collaboration can include activities which relate to all three traditional functions of universities, i.e. research, teaching and service. Specific forms include international student mobility (both short and long-term); the growth of international programmes and institutions (dual and joint degrees, international branch campuses); international scholar mobility, leading to joint regional and international research projects, as well as increasingly international disciplinary conferences and workshops; the increase of funding allocated to scholar mobility to enable joint research; and the possibility of shared access to cutting-edge instruments and physical facilities.

An understanding of the drivers of international research collaboration, on the part of institutions and individuals, helps to better predict the future of this trend for all forms of international academic collaboration. Although these vary significantly by context, drivers for international research collaboration include:

- The growing need to *pool intellectual resources and expertise in order to solve global issues* in an increasingly interdependent world;
- The *benefits of pooling financial resources given the decline in public funding* of higher education and academic research;
- The potential for *higher quality research, economies of scope and scale, faster completion of projects, and lower individual, institutional or national costs* for funding research;
- The potential for *greater prestige and increased citation impact through international research collaboration,* given the significant influence of global university rankings on institutional decision-making, and the subsequent benefits to individual researchers, departments and institutions in the competitive knowledge economy;
- The potential to develop shared understanding, trust and commitment between and within international academic communities (Amaratunga et al., 2018; Georghiou, 1998; Maringe & de Wit, 2016).

The relative ease of mobility in the present day, alongside digitalisation in society and within higher education, has also greatly facilitated the possibility of many forms of international academic collaboration (The Royal Society, 2011).

3. The COVID-19 pandemic has significantly impacted the global higher education landscape in ways that will have a persistent impact on international collaboration.

In order to continue operations during the uncertain circumstances caused by the COVID-19 pandemic, universities had to rapidly move all of their teaching, research and service activities online, including those related to international collaboration. Such a rapid "pivot" required financial resources, adequate technological infrastructure (including high-speed internet) and substantial knowledge and understanding of education technology (by faculty, staff and students), as well as a flexible administrative structure at both institutional and national level. The pandemic therefore exacerbated existing inequalities in the global higher education landscape, as wealthier systems (and institutions within systems) were better prepared for the shock and able to continue operations without noticeable disruption (Chan, Bista & Allen, 2022).

It appears likely that these inequalities will persist, as countries will also emerge from the grip of the pandemic at different rates, with better resourced countries being able to provide their citizens with high-quality vaccines sooner than the rest of the world. Institutions in wealthier countries are also more likely to be better

equipped to weather the financial challenges caused by the pandemic (although it is important to acknowledge that the financial impacts have been sizable everywhere in the world, including – and perhaps especially – in wealthier countries which rely significantly on fee-paying international students to balance their budgets).

It is also likely that there will be some more positive long-term impacts. The rapid shift to virtual modes of working has enabled new forms of online research collaboration and dissemination (e.g. through seminars, webinars and conferences, many of which have been made freely available to the public), the proliferation of collaborative online international learning (COIL) and other forms of virtual mobility, and the digitalisation of teaching materials, to name a few. If these new modes of collaboration persist, there are some crucial positive implications, including increased accessibility for students and faculty who previously could not participate in physical mobility, for economic or other reasons, and improved sustainability (a key factor for international education in the future in light of the ongoing climate crisis).

We anticipate that these long and short-term trends will mean the following for the future of international academic collaboration:

- Physical academic mobility will resume, but with revised assumptions and rationales;
- We will see greater emphasis on locally-based international cooperation, i.e. focused on internationalisation at home and internationalisation of the curriculum;
- Virtual forms of collaboration will become increasingly frequent and important;
- Reduced public funding for international research collaboration – particularly in and with lower-income contexts – is likely to exacerbate existing inequalities within international higher education;
- We will see shifting geopolitical allegiances, which will in turn affect who collaborates with whom;
- Institutions may increasingly view international collaboration in terms of its potential impacts on society.

4. Physical academic mobility will resume, but with revised assumptions and rationales.

The pandemic has had a tremendous influence on international higher education in general, but especially on student, faculty and staff mobility, due to border closures, travel restrictions, visa regulations and remote teaching. In these unprecedented circumstances, different modes of mobility, such as virtual exchange, have been used as a temporary alternative to physical mobility. (One example is the decision of the European Commission to partially allow virtual exchange in replacement of physical exchange under the Erasmus+ mobility programme.)

However, it is unlikely that physical academic mobility will be entirely replaced by virtual forms of mobility in the long term. Recent analysis of the extensive data on virtual forms of mobility, afforded by the rise in such efforts during the pandemic, has confirmed that virtual mobility cannot provide the same kind of learning experience as full immersion in another country (Buiskool & Hudepohl, 2020). As a result, even during the pandemic, a small number of academic mobility programmes continued operating despite the restrictions, demonstrating the resilience and significance of physical mobility for academic cooperation, and there are now signs that institutions (and individual students) are rapidly resuming mobility efforts, as vaccination programmes roll out around the world.

According to the Institute of International Education's (IIE) Fall 2021 International Student Enrollment Snapshot report, 70 percent of US institutions surveyed reported an increase in their international student enrolments for Fall 2021, an increase which cannot be attributed to online learning, given that 99 percent of institutions surveyed were offering in-person or hybrid classes, with only one percent of institutions offering online classes only (Martel, 2021). Most US universities also plan to fund outreach activities for international students to the same or a higher level than before in the upcoming academic year and have made significant changes to their operations in order to accommodate international students who cannot get to the US and/or do not have access to vaccination in their home countries. For example, 72 percent of universities surveyed

by the IIE offered the vaccine to students, faculty and staff on campus, as opposed to requiring students to be vaccinated prior to arrival (Martel, 2021). Many HEIs also simplified their application process by allowing online testing, waiving standardised testing requirements, extending deadlines for application submission and allowing admission deferrals. All these measures demonstrate a commitment to physical mobility which is likely to continue. At the same time, it is notable that US higher education institutions are open to offering hybrid and online modes of teaching to those students who are not able to get to the country due to COVID-19 related difficulties.

In terms of COVID-related impact, the situation is not too different for the other main English-speaking receiving countries (i.e. the United Kingdom and Australia), which have also seen a rather drastic decrease in inbound international students over the past few years. However, both contexts are also grappling with other factors affecting physical mobility – namely, a decrease in the number of European students studying in the UK as a result of Brexit and a decrease in the number of Chinese students studying in Australia due to geopolitical tensions. Increasing competition from non-English-speaking countries is also starting to affect the dynamics of international academic mobility (Altbach & de Wit, 2021; de Wit, Minaeva & Wang, 2022, forthcoming).

The impact of COVID-19 on physical academic mobility is well illustrated by the case of international student mobility in Australia. The Australian higher education system has long been heavily dependent on international students. As of 2020, Australia was the fourth leading host country with 463,643 international students (Mason, 2021). In 2020, over 50 percent of international students in Australia hailed from China and India (Mason, 2021); in 2018, Australia hosted 14 percent of all outbound Chinese students, and 20 percent of all outbound Indian students (DESE, 2021).

However, due to strict and extended border closures as a result of the pandemic, 44 percent of Chinese student visa holders were outside Australia in August 2020, growing to 64 percent in August 2021 (DESE, 2021). Many Indian student visa holders also remain outside Australia: 6 percent in August 2020 and 21 percent in August 2021 (DESE, 2021). Overall, Australian international student enrolments dropped by 5 percent in 2020 and 12 percent in 2021, made up in part by continued enrolment outside Australia (Mason, 2021).

While pandemic border closures are the primary cause of declines in international student mobility, geopolitical tensions between Australia and China have deepened these fissures, creating an opportunity for international student recruitment by non-English-speaking countries (De Wit, Minaeva, & Wang, 2022).

It remains to be seen whether the pandemic-related declines in physical mobility will continue after vaccination rates rise around the world, or if this marks a more durable shift in the history of academic mobility. What seems most likely is that virtual and physical mobility will coexist in complementary ways in the future, responding to different rationales and possibilities. Furthermore, what is clear is that we are likely to see an even greater divide between those able to access physical mobility and those that cannot than was already the case. Physical mobility of students and scholars has long been an opportunity mainly available to elites, given that it requires financial resources, sufficiently good health, time and aspiration to travel and an absence of binding family responsibilities. As a result of these barriers, only a small percentage of the academic community participates in physical mobility. This has been exacerbated by border closures, travel restrictions and increasingly complex and restrictive visa regulations during the pandemic (De Wit & Altbach, 2021). Although some of these barriers may subside over time, vaccine nationalism – including significant imbalances between nations in terms of vaccine availability, quality and recognition – is likely to exacerbate these long-standing barriers to physical mobility, at least in the medium term.

5. We will see greater emphasis on locally-based international cooperation, i.e. focused on internationalisation at home and internationalisation of the curriculum

The COVID-19 pandemic has only emphasised the importance of skills fostered through international academic collaboration (e.g. responsible global citizenship, problem-solving skills and intercultural competencies). Given limitations on physical mobility for the majority of students in the world (both those that have long existed and those that have arisen in the pandemic context), we anticipate that we will see a **far greater emphasis on locally-based international cooperation, i.e. focused on internationalisation at home and internationalisation of the curriculum.**

Internationalisation of the curriculum has long been seen as an outstanding mechanism for fostering the skills and attitudes necessary to address global challenges. Indeed, it may be more effective than physical mobility for ensuring internationalised learning (Leask & Green, 2020). The results of mobility programmes are usually assessed utilising quantitative data (e.g. the number of students who participate in mobility, the duration of exchange programmes, the diversity of countries where universities send their students, the diversity of international students), rather than the outcomes in terms of student learning. Such assessment does not demonstrate whether mobile students gain intercultural competencies and/or increase their intercultural awareness. In contrast, when internationalisation is advanced via the curriculum, internationalised learning outcomes are drafted and assessed towards the end of the experience. This qualitative approach paints a far richer picture of students' learning. More broadly, internationalisation at home increases the impact of internationalisation efforts, by expanding the small minority who are able to access physical mobility opportunities (Jones, 2020).

Although arguments in favour of internationalisation at home have long circulated in academic circles, the perceived benefits of physical academic mobility for cross-cultural learning have tended to ensure that physical mobility remains the core internationalisation strategy for many systems and institutions around the world. However, the disruption caused by the COVID-19 pandemic may have shocked the system sufficiently to finally strengthen efforts to increase internationalisation at home activities (Leask, 2020) – activities which will only become more salient as the climate crisis evolves.

Reimagining the Internationalisation of the Curriculum (IoC): Best Practices and Promising Possibilities (Leask et al., forthcoming), published in Spanish by the University of Guadalajara in Mexico, is a useful resource for those interested in innovative approaches to IoC currently being implemented by institutions around the world. The book brings together case studies and analyses of IoC from South and North America, Europe and the Asia Pacific region. Some promising examples highlighted in the book include:

- The International Business School Maastricht, which has a mission to guide young professionals to become resilient business leaders with a global mind, who can act as change makers for a sustainable world. In 2018, the School established an Intercultural Business learning pathway as part of its International Business degree, in which IoC is synthesised with education for sustainable development, providing a holistic approach to intercultural and sustainability learning in the curriculum and new roles for lecturers as coaches and experts to deliver the new mission.

- A large-scale, cross-institutional professional development initiative, implemented at the University of Hong Kong, which aims to help academics broaden their perspectives and practices in the domain of IoC. Early findings suggest that this sort of activity has transformative potential for institutions hoping to move towards a more integrated, learning-focused understanding of IoC.

- An international student mobility programme in the Tourism B.C. at the University of Guadalajara, which is specifically incorporated into the curriculum of the degree as a whole (meaning that students unable to participate in the mobility scheme are also able to benefit from the experiences of their mobile counterparts, via structured activities).

6. Virtual forms of collaboration will become increasingly frequent and important.

As has already been the case over the last year, in the context of the COVID-19 pandemic, **digital forms of collaboration will become increasingly frequent and important.** Limitations on physical mobility – as well as possible changes in mobility preferences, related to concerns about environmental sustainability – will lead to further development and proliferation of the use of digital technologies in higher education. As previously discussed, this may manifest in "virtual mobility" or "virtual exchanges" of students, faculty and staff, collaborative online international learning (COIL), online webinars and conferences, and the proliferation of open library resources and other open access publications, among others. As in the case of physical academic mobility, we do not anticipate that digitalisation will replace all of the physical functions of higher education. Rather, we assume that digital elements will now be incorporated throughout all higher education functions, leading to an increase in blended and hybrid forms of collaboration.

In the United States, the Stevens Initiative has provided funding and other resources to advance virtual exchange. In a recent report (Bhandari et al, 2021), it was documented that over 3000 of these exchanges took place in 2020 and more than 80 grants were awarded. The American Council on Education (2021) has also added a transformation lab on virtual exchange and COIL (collaborative online international learning) to offer resources to universities interested in advancing these approaches.

Already underway even before the pandemic, the ERASMUS+ Virtual Exchange provides opportunities for virtual mobility for young people aged 18 to 30 years old. This programme will be continued by the European Youth Portal.

The Inter-American Organisation of Higher Education created the Virtual Mobility Space in Higher Education (eMOVIES) to allow students from OUI-IOHE member institutions to enrol on courses from institutions in other countries, while receiving academic credit in their home institution. A similar scheme known as Americarum Mobilitas allows students from institutions that are members of the Organisation of Catholic Universities in Latin America and the Caribbean to participate in academic mobility and virtual exchange. This virtual mode has quickly surpassed in-person exchanges within this network.

Digitalisation of international collaboration can have two possible outcomes. Utilising digital forms of collaboration, which do not require physical mobility and the related financial resources and time allocation, can increase access to international research and education, thus making them less elitist. However, the reverse may also be true. Given that countries, institutions and researchers do not have equal access to digital resources, relevant training, support personnel or ancillary equipment and software, increased digitalisation may also further exacerbate the current digital divide in global tertiary education. Digitalisation also requires changes in legislation, quality assurance and credit recognition procedures and institutional policies, all of which are more likely to happen rapidly in some contexts than others. All of this may in turn result in less collaboration between technologically advantaged and disadvantaged contexts.

Digitalisation of international collaboration is also likely to result in further dominance of the English language and, relatedly, English-speaking countries. English is already the dominant language for scholarship and research. As the countries with the most developed information technology infrastructure are also English-speaking, the vast majority of conferences, webinars,

virtual exchange opportunities and COIL opportunities are offered by these countries, typically in the English language. It has proven difficult for other countries, in particular those with limited public funding for tertiary education, to offer similar opportunities and/or to attract similar sized audiences for programmes offered in other languages (Unangst, Altbach & de Wit, 022, forthcoming).

7. Reduced public funding for international research collaboration – particularly in and with lower-income contexts – is likely to exacerbate existing inequalities within international higher education.

With a multiplicity of interrelated global events in the contemporary context, including the pandemic, the related global economic crisis in higher education and, more widely, the rise of populist forms of nationalism, we have seen a decline in public funding for research collaboration in some contexts, as well as a general decline in funding for collaboration in and with lower-income countries (Highman, 2019).

In March 2021, UK Research and Innovation (UKRI), the body responsible for funding research and knowledge exchange at higher education institutions in England, announced that it would be reducing its international development budget from £245 to £125 million for the fiscal year 2021-22, due to economic challenges caused by the COVID-19 pandemic, leaving "a £120m gap between allocations and commitments" (UKRI, 2021). Aside from the sheer scale of the cuts, the announcement was shocking in its procedural aspects, as the cuts required a reduction in funding allocated to existing grants, rather than only affecting future funding schemes. As a result, some international research teams had to be reduced or dissolved entirely, with real consequences for the livelihoods of researchers around the world (particularly those based in the Global South). Others managed to continue their work, either on reduced funding or thanks to stop-gap funding from other sources, but had to substantially limit the scope of their intended projects.

Although many projects have managed to weather the storm, there is no question that these events have affected Britain's reputation as a reliable funder of international research. It also appears likely that the allocated budget for international development-focused research (a substantial source of funding for international research collaboration in the UK) will not increase to previous levels, at least not in the next few years.

As a result, we are likely to see further inequalities in terms of global research output – with the majority of published academic work continuing to be authored and disseminated by scholars based in higher-income contexts – and research priorities (due to a global imbalance in the ability of researchers to access funding).

Declining public funding in certain parts of the world may also result in private players, such as think tanks, research institutes and private research foundations, playing a more significant role in global research spaces. Such a shift presents an opportunity for new and different kinds of research partnerships and collaborations between universities and the private sector. However, it could also result in the proliferation of new boundaries on research agendas – i.e. if only academics working on agenda-relevant research were able to access these funds and partnerships – as well as potential limitations on public dissemination of research results. The effects of moving away from public funding of academic research are most dire for non-STEM disciplines, as departments and research budgets for these fields seem to suffer the most and may have the least access to private sources of funding. Furthermore, university-industry and other forms of public-private partnerships in international research collaboration may effectively be a step backwards in the efforts to ensure that international research collaboration is

diverse, representative and equitable. Access to such forms of collaboration will undoubtedly be restricted to the most elite of higher education institutions.

8. We will see shifting geopolitical allegiances, which will in turn affect who collaborates with whom

As a result of geopolitical pressures, we are also likely to see **shifting geopolitical allegiances, affecting who collaborates with whom**. As an institution within society, a university participates in and is subject to shifts in political relationships at local, regional and global levels. In a globalised world, geopolitical shifts in power over the past decades – related to political dynamics, economic crises and demographic movement – have significant worldwide knock-on effects, including on higher education and international academic collaboration.

One prominent example is the repeated censure of international academic collaboration with China, apparently due to national security concerns as voiced by various national governments. The undeniable rise of China as a global power and a leading player in international higher education (as can be seen from its position in global university rankings, its extensive research and development budget and its volume of research publications) plays a part in contemporary geopolitical volatility (Marginson, 2018).

In 2017, there were 103 Confucius institutes in the US alone. However, this number has decreased rapidly in recent years, with 89 US-based Institutes already closed and five additional Institutes scheduled to close by 2022. If we look more closely at these closure trends, it is apparent that the majority of these closures have occurred in the last three years. For example, in the US, only 17 institutes were closed from 2014-2018, whereas 22 institutes were closed in 2019, 24 in 2020 and 26 in 2021 (National Association of Scholars, 2021). The same trend can be observed in European countries, such as the UK, Belgium, Sweden, Germany and the Netherlands.

Another recent example of the changing geopolitical climate is the December 2021 announcement by the European Union to launch a new programme – "Global Gateway" – as an alternative to the Chinese Belt and Road Initiative. The European Commission has claimed that, while the Chinese programme was not transparent and left some countries in debt, this new initiative will be sustainable and trusted among partners.

Alongside political concerns about collaboration with China, a related rise of populist forms of nationalism in several countries and regions of the world, including the US, the UK, Australia, Hungary and others, has led to anti-internationalist calls for more nationally focused ends for higher education across teaching, research and service functions.

As a result, we have seen growing political interference in international academic collaboration, affecting university-university partnerships, university-industry collaboration, research collaboration and funding, and teaching and learning (for instance, with regard to Confucius Institutes and language/cultural learning) (Altbach & de Wit, 2021).

Specifically, we have seen increased securitisation of universities, knowledge and individuals, with greater levels of federal oversight into research collaboration, ongoing and frequently unwarranted legal cases against scholars with links to non-allied countries (e.g. US scholars with collaborative relationships with China) and political fear-mongering regarding intellectual property theft and foreign influence related to foreign research funding.

These trends will likely shape patterns of collaboration in the years ahead, such that collaboration will be restricted to institutions, administrators, academics and students from particular countries. North America and certain countries in Europe may collaborate more often among themselves, while China may redirect academic collaboration through its Belt and Road Initiative towards South East Asia, Africa, Latin America and other countries in Europe, although with rising concerns about their economic and social impact, as recent

examples in countries like Hungary, Macedonia and Zambia have illustrated. Additionally, reduced funding may further delay the potential to increase access to knowledge at a global level and restrict the development of partnerships between scholars and institutions in the "Global South" and "Global North".

9. Institutions may increasingly view international collaboration in terms of its potential impacts on society.

One potentially positive impact of recent trends is that **universities may increasingly view international collaboration in terms of its potential impacts on society.** The concept of Internationalisation of Higher Education for Society (IHES) has been debated in academic circles in recent years, with advocates such as Brandenburg, de Wit, Jones, Leask and Drobner arguing that IHES extends the benefits of internationalisation to incorporate the local, regional and global community, thereby participating in the provision of local, regional and global public goods to the global common good (Brandenburg et al., 2019). In effect, this involves extending internationalisation activities beyond the traditional pillars of research and teaching to the third function of higher education – that of service to society. It is possible that strategically aligning the service function or "third mission" of universities with the internationalisation agenda could help to counteract implicit tendencies to compete rather than collaborate – often observed in higher education more broadly, as well as within internationalisation, through academic capitalism and academic ethnocentrism (Jones et al., 2021) – and to address recent critiques levelled at universities for being elitist and disconnected from society. By focusing on progressive concepts and values within internationalisation, such as cosmopolitanism, multiculturalism and diversity, IHES may also be harnessed via the functions of universities to promote international collaboration and provide such global public goods as global citizenship, sustainability, democracy, peace and access to knowledge.

If universities around the world start to see potential value in such an orientation for their internationalisation efforts, we are likely to see:

- Further centralisation of international collaboration efforts, including those focused on societal impacts, as part of institutions' strategic plans;
- Support for programmes and formal and informal institutional, university-community, and university-industry partnerships that carry out IHES through reciprocity and engagement with local and international academic communities and the broader public;
- Research collaboration with a broader set of stakeholders, including participation in networks and associations, in order to ensure that research is responsive to and accessible by both local and international public and academic communities;
- Further incorporation of local and global perspectives and emphasis on global social justice in teaching across the disciplines;
- And a recognition of how cross-alignment of IHES with the teaching, research and service functions of universities can support efforts to positively impact society, through a range of different forms of international collaboration (Brandenburg et al., 2020).

The recent IHES Mapping Report (ACA, 2021) includes a number of examples of IHES-focused initiatives, including the International Town and Gown Network, coordinated by Stellenbosch University in South Africa (which is an international network of universities committed to social impact and community engagement), the Citizen Science Talent Programme at the University of Southern Denmark (which pairs international students with local citizen scientists in order to increase student research skills and gain international exposure for local research topics) and the Interfaculty Council for Global Development at KU Leuven (which provides funding for research projects that are co-created by Belgian researchers and civil society organisations and counterparts in the Global South). It is also now possible to access current examples via the IHES Online Repository.

Although such activities remain in the minority in internationalisation projects around the world (ACA, 2021), a growing number of institutions are adopting IHES-focused initiatives, and it appears likely that this trend will continue in the years to come.

10. International Academic Collaboration for the future, in conclusion

The trends outlined here point to the resilience of traditional forms of academic cooperation, as well as the possibilities of long-term transformation. Rather than continuing with a mindless inertia, the pandemic has forced a deep interrogation of taken-for-granted practices and recognition of the substantial possibilities afforded by technology and remote cooperation to augment international collaboration in more sustainable ways that are potentially more effective and inclusive. At the same time, the events of the last year have highlighted the limits of purely virtual collaboration and made clear the likelihood of new modes of engagement being just as likely to exacerbate inequalities as they are to address them. There is no doubt that we will see new, different and potentially more diverse forms of international collaboration in the years to come. What remains to be seen is what these new forms of collaboration will bring to the sector and, more broadly, the world.

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Promoting Research in Africa through Higher Education Networks and Alliances

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Abstract

Universities in sub-Saharan Africa were established by colonial powers when the countries were about to achieve independence, mainly to train the workforce necessary to take over State administration after the departure of the colonisers. The initial emphasis, therefore, was on undergraduate teaching. Decades later, the need to run postgraduate programmes and undertake relevant research was felt. However, universities had little capacity for this. African universities soon realised that their best strategy to achieve their objectives would be to collaborate among themselves, sharing knowledge, experiences and resources. This initiated the creation of networks and alliances among African universities, funded by external donors in almost all cases. Many very diverse networks have been established, although a great deal of the earlier ones ceased to exist once donor funding stopped. This paper looks at a sample of the higher education networks and alliances currently operating in Africa, highlighting their academic areas of cooperation, mode of operation, governance structure, funders and achievements. The paper then identifies some common features of the initiatives and proposes some issues for future consideration.

1. Introduction

Universities in sub-Saharan Africa were established by the colonising powers at a time when countries were about to achieve independence, mostly in the 1960s. An important objective of the institutions was to train the workforce required to take over the administration of the countries once the colonisers had departed, and also to provide skilled personnel in the countries' key development areas. The initial emphasis was therefore on teaching, mainly at undergraduate level. It was a couple of decades later that African universities felt the need to run postgraduate programmes and undertake relevant research, vital for their countries' future development.

However, they had little capacity to do this. The majority of their faculty did not have a PhD, and only a few of those who were sent overseas to upgrade their qualifications, mostly under scholarships from the former colonisers, would return, hence causing brain drain. Universities were also unable to obtain national funds to set up research laboratories and equipment, and funding from donor agencies often did not permit such capital expenditure.

African universities soon realised that the best strategy to train their faculty and promote research would be through collaboration among themselves in order to share expertise, experiences and resources. This is what led to the creation of regional higher education networks and alliances in Africa, in almost all cases funded by external donors. Later, such a strategy was also encouraged by UNESCO, as evidenced by the following statement in the final communiqué of its 2009 World Conference on Higher Education:

> "The evolution of a quality African higher education and research area will be stimulated through institutional, national, regional and international collaboration. There is therefore the need for a strategic orientation towards the establishment/strengthening of such collaboration. African countries with well-developed higher education systems should share with those that have less-developed systems." (UNESCO, 2009).

The nomenclature used for the various collaborative initiatives varies. It might be called a network, an alliance or a consortium. Basically, each one is made up of an inter-connected group of institutions that have common interests and wish to collaborate. The institutions may have similar or different profiles and the operational structure can be loose or formal. It is often difficult to differentiate one from the other.

Postgraduate training and research are also being successfully promoted through the creation of regional specialised institutions, or Centres of Excellence in specific areas within existing universities, which are accessible to all African students (Mohamedbhai, 2017).

However, there is limited institutional collaboration or sharing of resources in these initiatives and they will not be considered here.

2. Former initiatives

A large number of networks and alliances of higher education institutions, very diverse in nature, were established in Africa as early as the end of the 1980s, although the majority of them were created from the beginning of the 21st century when revitalisation of African higher education started. Most of the early ones, and even a few of the more recent ones, no longer exist as they were not sustainable once external donor funding had stopped. Two such initiatives are briefly described below.

University Science, Humanities and Engineering Partnership in Africa (USHEPiA)

USHEPiA was a collaborative staff development programme launched in 1995 as a consortium of eight universities in East and Southern Africa, led by the University of Cape Town (UCT), South Africa. **The main objective of USHEPiA was to enable academic staff in science, engineering and humanities in the partner universities to obtain a PhD, either from their own university or from UCT, by sharing their resources, especially those at the well-endowed UCT.** The programme, which was funded by several US Foundations, enabled PhD candidates to undertake research fieldwork at UCT and also facilitated staff exchanges for lecturing, research supervision, external supervision, etc. among all the partners. External donor funding stopped around 2007 and this formally ended the programme. The partner universities continued their collaboration for some years using their own resources, but this was not sustainable in the long term (USHEPiA, n.d.).

Regional Initiative in Science and Education (RISE)

RISE was established in 2008 by the Science Initiative Group at the Institute of Advanced Study in Princeton, US with a grant from the Carnegie Corporation of New York. **The project was aimed at producing graduate students, at Master's and PhD level, who would serve in academia in Africa and also produce quality research. In order to encourage collaboration and sharing of resources among African universities, five competitively-selected RISE Networks of universities were created** in areas of science and engineering of relevance to Africa's development. Twenty-two of the 24 universities in the Networks were in East and Southern Africa. A student at a university in a Network had access to complementary teaching and research facilities available at the other universities within that Network. The Carnegie funding came to an end in 2017 and by then RISE had produced over 120 Master's and PhDs. Attempts at seeking other funding sources and getting RISE to be rooted in Africa and Africa-owned did not materialise (RISE, 2019).

3. Current networks, alliances and consortia

This section looks at a sample of networks and alliances currently active in Africa, especially those where several institutions from different African countries collaborate to undertake postgraduate training and research in areas important for Africa's development.

African Economic Research Consortium (AERC)

The AERC was created in 1988 as a public, non-profit organisation for the advancement of economic policy research and graduate training to strengthen local capacity for conducting rigorous and independent inquiry with regard to management of economies in sub-Saharan Africa (AERC, 2021). Its main training programmes are the collaborative Master's and PhD programmes in Economics which it runs through a consortium of over 25 universities in more than 20 African countries, both English-speaking and French-speaking, by sharing institutional expertise and resources. These programmes are aimed at training mid-level managers, public policy analysts and academics. The AERC also supports research on issues critical to Africa's economic development through grants to researchers in African universities. In 2020, it embarked on several collaborative research projects on the impact of the COVID-19 pandemic on African economies.

The AERC is funded by a plethora of nearly twenty funders, which include international partner countries, multi-lateral and international organisations, private foundations and African central banks. It has a unique governance structure comprising a Board of Directors (consisting mainly of the funders), a Programme Committee (mostly academics from Africa and other countries), and a Secretariat headed by an Executive Director in Nairobi, Kenya.

It is quite remarkable that the AERC, which is perhaps the oldest higher education collaborative initiative in Africa, has been sustained for over 30 years. This is no doubt due to the pertinence of its programmes and research areas for Africa, but also its governance structure which ensures ownership by both academics and the funders.

Regional Universities Forum for Capacity Building in Agriculture (RUFORUM)

RUFORUM, which started as a network of a small number of African universities in 2004, is now a consortium of 129 universities in 38 countries on the continent, and is registered as an international non-governmental organisation. Although its activities have expanded enormously over the years, **RUFORUM's strategic thrusts remain training Master's and PhD graduates and promoting research in agriculture in response to national stakeholders' needs and Africa's development goals,** through the collaboration of its members to achieve economies of scope and scale. A characteristic of RUFORUM's postgraduate training is ensuring that the students undertake field-oriented research through attachments.

Initially, RUFORUM was mainly funded by the Bill & Melinda Gates Foundation, but now there are a large number of international and continental funders, many of whom fund specific activities and projects, often at designated universities. As at 2020, it had mobilised USD 215 million on behalf of its member universities. It has trained over 2,000 Master's and PhD graduates.

RUFORUM has quite a complex governance structure which includes an Annual General Meeting, its supreme governing body, a Board of Directors, a Committee of Deans of Agriculture, an International Advisory Panel, and a Secretariat hosted by Makerere University in Kampala, Uganda (RUFORUM, 2020).

Agriculture remains a key area for Africa's development, and RUFORUM's role in promoting postgraduate training and research in agriculture through university collaboration, and in particular linking universities to rural communities, is commendable. All indications are that the organisation will continue to expand and strengthen its activities, which are well-supported by national governments and international development partners and donor agencies.

Southern Africa Network for Biosciences (SANBio)

SANBio was established in 2005 under the New Partnership for Africa's Development – NEPAD (now the African Union Development Agency – AUDA) - as one of the four regional networks of its African Biosciences Initiative. It covers the 13 countries of the SADC region and **provides a shared research, development and innovation platform to collaboratively address some of Southern Africa's key biosciences challenges in health, nutrition, agriculture and the environment.**

The Network operates through several thematic Nodes in different countries. Each Node deals with a specific area and collaborates with interested universities and research centres in the other SADC countries. For example, the University of Mauritius is the Bioinformatics Node, the University of Namibia the Mushroom Node and the Lilongwe University of Agriculture and Natural Resources in Malawi the Fish Node. The Council for Scientific and Industrial Research (CSIR) of South Africa is home to the Secretariat, which is headed by a manager. The Network's operations are overseen by a Steering Committee which comprises representatives of all the SADC member states, while the SADC Secretariat identifies and coordinates key collaborative activities and assists in resource mobilisation (SANBio, 2021)

SANBio is funded mainly by the Finnish government, which provides grants for the research projects and some mobility and training. South Africa also contributes to the Network's administration and activities. Several research projects have been completed and the results published, and several are ongoing.

SANBio differs from the other initiatives in several ways. First, it is restricted to countries in the SADC region. Second, it is research-focussed and does not provide for doctoral training. Third, the member states have a direct oversight of the Network's activities. However, the key characteristic of universities in different African countries collaborating to share their resources for research remains the same.

Consortium for Advanced Research Training in Africa (CARTA)

CARTA was created in 2008 from a need to promote world-class, multi-disciplinary research in the areas of population and public health in Africa. The strategy it has adopted is **to support junior academic staff in African universities by providing them with fellowships to undertake their doctoral training locally, thus enabling them to become early career researchers and, eventually, research leaders.**

The consortium comprises eight universities, from where the faculty to be trained are selected, and four research centres, all in different African countries. It also draws on research expertise from four non-African research partners in the North. It is jointly led by the African Population and Health Research Centre in Kenya, where the Secretariat is located, and the University of Witwatersrand in South Africa.

CARTA has used the approach of creating research hubs in the partner institutions and promoting collaboration among the hubs to support research fellows in co-designing and supervising their research, strengthening their competencies in science communication and policy engagement, and facilitating the dissemination of their research findings through publications and conferences. It also enhances research support in the hubs, for example by building the supervisors' capacity in best practices of doctoral education and mentorship.

CARTA is funded by a host of international partners and donors. To date, it has enrolled 229 fellows, graduated 103 PhDs, trained 630 faculty and staff, and produced 1,180 peer-reviewed publications (CARTA, 2021). This is impressive, considering that the fellows undertake their doctoral studies while maintaining their normal teaching and other academic activities in their respective universities.

African Research Universities Alliance (ARUA)

ARUA is a network of 17 leading universities from 10 African countries that was established in 2015 with the objective of expanding and enhancing the quality of research in Africa. Its strategy is to get African universities to collaborate by pooling their own limited resources to generate a critical mass of researchers, while at the same time using this to leverage for additional external resources.

The approach adopted by ARUA is to get its partner universities to establish inter-disciplinary Centres of Excellence (CoEs) in 13 very diverse, broad thematic areas that define Africa's crucial development challenges. These areas include Post-Conflict Societies, Migration & Mobility, Notions of Identity in Africa, Urbanisation & Habitable Cities and Good Governance. Each CoE establishes its own internal management structure and brings together leading researchers in the relevant field from ARUA's partner universities and also from other universities, either within or outside Africa. The operations and management of each CoE are funded partly by the host university and partly from a grant mobilised by ARUA. For its research and training, a CoE will seek external research grants worldwide with strong support from ARUA.

Also, in December 2020, ARUA launched three Vaccine Development Research Hubs for Western, Eastern and Southern Africa, with a grant of USD 1 million from the Open Society Foundations, to undertake vaccine development research. Each hub is hosted by an ARUA partner university with researchers from 4-5 other partner universities collaborating.

At central level, ARUA is governed by a Board of Directors comprising the Vice-Chancellors of the 17 member universities, and a Secretariat, headed by a Secretary-General, located in Accra, Ghana, which receives support from Witwatersrand University, South Africa. ARUA is funded by a host of international partners (ARUA, 2021).

The websites of the 13 CoEs, accessed from ARUA's website, give an indication of their research activities. Some appear to have made more progress than others, but clearly ARUA has been a major development in Africa's research ecosystem and will no doubt significantly boost the research output of African universities.

4. Analysis of networks and alliances

This section is an analysis of the various initiatives with a view to identifying some common features among them and proposing a few issues for future consideration.

Regional delineation

Africa comprises five regions as designated by the African Union – East, Central, North, Southern and West. It is interesting that **almost all the networks and alliances involve universities across the different regions and are not restricted by regional delineation. This is commendable as academic collaboration should not be constrained by boundaries.**

However, North Africa appears to be an exception, as most of the collaborative initiatives do not include universities from that region. This is most probably because the initiatives are all externally-funded by donor and development agencies which usually restrict their assistance to sub-Saharan Africa, where the majority of the under-developed countries are located. While this is understandable from the point of view of providing aid, there is little justification for excluding North African universities from participating in collaborative postgraduate training and research activities with sub-Saharan African universities. Egypt, Morocco and Tunisia in particular are known to have excellent research-strong universities and could also provide funding for the networks and alliances.

It is therefore highly desirable for the various initiatives to include North African universities as partners. RUFORUM already has a few universities from Egypt, Morocco and Tunisia as members.

Linguistic consideration

It is equally satisfying to note that the **initiatives are not defined by linguistic consideration as they include universities that are English-speaking, French-speaking or Portuguese-speaking.** It is true that, generally, English is the predominant language used for communication, but that appears to be the situation in most parts of the world. In Europe, for example, most regional activities are conducted in English.

With regard to North Africa, although most of the countries are Arabic-speaking, language should not really pose a challenge. Egyptian academics are usually fluent in English, and French is widely spoken in Morocco and Tunisia. In any case, rapidly evolving technologies should make it possible to communicate simultaneously in multiple languages.

Governance

Governance of a network or alliance plays an important role in the success of the initiative and its sustainability. The governance structure varies considerably from one initiative to another; in some cases, it is simple, in others, multi-layered and complex. **What seems to emerge is that the governance structure should involve the participating partners and also the funders.** In the case of USHEPiA, the programme was centred at and heavily led by UCT, with the other partner universities being regarded as beneficiaries. In RISE, although the academic activities were undertaken by Networks in Africa, the programme was essentially run from the US. However, while involving stakeholders' participation in governance, the structure must not become too complex or bureaucratic so as to stifle the initiative's operations.

One important factor that each initiative should take into account is changes in leadership at the level of the participating institutions, especially the one which initiated the network. Such changes can have a negative impact on the continuity of operations.

Quality of doctoral training

The majority of initiatives that promote research in Africa have a component of doctoral training. The latter is important not only for increasing the output of research but also for upgrading the qualifications of faculty. The number of PhD programmes in African universities has increased significantly over recent decades.

However, **in most African universities there is a shortage of PhD-qualified faculty in the appropriate field to serve as supervisors,** and those available often do not have adequate doctoral supervisory capacity; **there is also the absence of a research environment, and research facilities that are not always available, all of which has a negative impact on the quality of the PhD** (Mohamedbhai, 2020a). This is where networks and alliances can play an important role. As Quality Assurance agencies in most African countries do not yet have the capacity to externally audit doctoral programmes, and international accreditation is very expensive, it is incumbent on the universities in a network or alliance to collaborate to ensure the quality of their doctoral programmes. The approach used by CARTA in providing support for capacity-building of PhD supervisors is excellent and should be replicated in the other networks.

Impact of COVID-19

Much has been written about the impact of COVID-19 on teaching and learning in African universities, but little about its consequences on research. Yet the pandemic will affect research. In the short-term, researchers, including doctoral students, especially in the science and technology areas, have had to suspend their field or laboratory work and this has seriously impacted on the duration of their work. Some doctoral students have had to modify or re-start their experiments. As most research and doctoral studies are externally funded by donor agencies, a significant extension of the work may not always be possible, and this will affect the output and quality of the research.

In the long-term, public universities should expect a reduction in their government grants, and this has already happened in several countries. In such cases, it is usually the research component of the institution's budget that is slashed first. Allocation of funds to national research councils may also undergo a reduction, as has happened in South Africa. Also, as most research in Africa is funded by the North, it is quite possible that such funds will be curtailed because of the economic situation resulting from the pandemic. Yet another consequence is that much of the available research funds may be re-directed to the funding of COVID-19-related research projects, at the expense of much-needed research in other development areas (Mohamedhai, 2020b).

It is important for research networks and alliances in Africa to be aware of such threats and to be prepared to take appropriate action to mitigate their negative consequences.

Sustainability

All collaborative initiatives rely on external donor funding, and over-reliance on external funding has been recognised as a major challenge in Africa. This explains why several initiatives come to an end once donor funding stops. When a project is considered for funding, a donor usually requires the development of a plan for financial sustainability at the end, a condition that realistically hardly any project in Africa manages to fulfil. If some initiatives have survived for a long period (e.g. AERC or RUFORUM), it is not because they have become independent of donor funding, but rather because they have constantly diversified their sources of external funding.

A closer look at the initiatives perhaps provides some clues as to the reason for the resilience of some of them. First, it is important not to be dependent entirely on one donor. RISE, for example, depended heavily on the Carnegie Corporation. It would be wise to get several donors involved, preferably funding different aspects of the project. Second, **as far as possible the donors should in some way be involved in the project's governance structure, so that they have a say on how they wish the project to evolve.** Third, in the case of a multi-institutional network, the partners should be encouraged to separately mobilise resources for their component of the project, as in the case of ARUA.

However, **achieving long-term financial sustainability should not necessarily be the only ultimate objective of each project. If a project achieves its set targets, it should be considered to have been successful, even if it ends when the funding stops.** There are unspecified accrued benefits in all projects. In USHEPiA, for example, the academic bonds created among the participating universities have endured to this day, and they continue to facilitate informal and fruitful collaboration between them.

African academic diaspora

None of the initiatives makes specific mention of the contribution of African academic diaspora. Yet the African Union considers the African Diaspora as its 6th region, in recognition of its contribution to Africa's development. African diaspora in academia could provide valuable assistance in many of the initiatives. However, past attempts made at luring African diaspora to permanently return to Africa have not been successful. **African academic diaspora, especially first-generation, are highly motivated to assist African universities but, for academic and personal reasons, only through short-term engagements.**

In recognition of this situation, in 2013 the Carnegie Corporation of New York launched the Carnegie African Diaspora Fellowship Program (CADFP, 2021), through which it funds fellowships to African diaspora in the US and Canada to enable them to travel to African universities for short periods and provide support in teaching and research, although the programme covers a limited number of countries in sub-Saharan Africa. Well over 500 such fellowships have been awarded to date under the programme.

International collaboration

Many African universities that form part of the networks have long and fruitful partnerships, originating from their colonial past, with universities in Europe, and subsequently in North America, China, Brazil, etc. **The African networks should use these partnerships to support their research activities and benefit from the expertise in other parts of the world; they can even help to attract additional funding. Collaboration among African universities need not be at the expense of international collaboration.** However, the networks should continue to be rooted in Africa and be Africa-led.

International partnerships between US Historically Black Colleges and Universities (HBCU) and African universities can be particularly helpful to the networks. This is one of the objectives that prompted the Association of African Universities (AAU), in collaboration with the African Union, to organise its first AAU-African Diaspora Homecoming in 2021.

Conclusion

Collaboration between universities for the purpose of sharing resources for postgraduate training and research is now a common feature in the African higher education landscape. The guiding principle behind the various initiatives is best captured by the well-known African proverb: "If you want to go fast, go alone. If you want to go far, go together."

There are many initiatives and they vary significantly in terms of the nature of the collaboration, the academic areas, the governance structure, the geographical coverage, etc., and the list of networks and alliances mentioned here is far from exhaustive. There is little doubt that the various initiatives will significantly increase the number of doctorates in Africa and provide a boost to much-needed research.

However, research funding continues to be a constraining factor, with African countries, on average, spending barely 0.5% of their GDP on research and development and thus having to rely heavily of external donor funding. Unfortunately, the funding situation is likely to worsen with the COVID-19 pandemic. All stakeholders, within and outside Africa, must realise that a major halt in Africa's research activities will have a serious impact on the continent's development.

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International collaboration for equity, accountability, innovation and resilience: Universities as hubs for partnerships to address global challenges[1]

Roberta Malee Bassett and Jeremie Amoroso

Abstract

The University, one of society's oldest institutions, is a pillar of local communities, a driver of regional development, and a partner at the forefront of designing solutions to existing global problems. The current 2020-30 decade, which began with the most significant global disruptor in nearly a century—the COVID-19 pandemic—will be filled with new challenges as the world aims to build back better—including understanding and expanding upon those crisis interventions which ought to be sustained and strengthened to support stronger, more equitable higher education systems. As they have done for centuries, universities will play an active role in contributing to human progress, but this is not an outcome from a single institution. Rather, it is the combined effort of partnerships fostered between post-secondary institutions of all types and missions and from across borders and the societies they serve. International collaboration in teaching and research allows institutions to strive toward achieving their missions to become more entrepreneurial, and to reap benefits for broader societal impact. In this article, different modalities of international collaboration in higher education are explored in the context of their development potential and impact, particularly with regard to adapting internationalisation to be more relevant and equitable in terms of both access and scope for developing countries.

Higher education has long been a cooperative effort — from scholars in the ancient world seeking opportunities to debate, exchange ideas and learn, to scientists of today collaborating via technology to address humankind's most pressing challenges. Over the millennium since the earliest higher learning academies, the different forms of such higher education have evolved to encompass an astonishing array of institutions and delivery modes. From community and technical colleges, to massive open online courses (MOOCs) and world class research universities, there are aspirations for knowledge-seeking and knowledge-production after compulsory learning in every country on earth, illustrating the universal drive towards higher learning and higher skills. Today, one in five of the world's scientific papers are published as a result of international collaboration. Academics and researchers are finding it simpler and more productive than ever to collaborate with their foreign counterparts as a result of better communication methods and the ease of international travel and reduce barriers to the exchange of academic ideas (Quacquarelli Symonds, 2019).

Academic staff and students benefit immensely from a strong commitment to embedding internationalisation into teaching and research, as well as in academic career development. Internationalisation, a tool that embeds global interconnectivity, integration and awareness into the holistic tertiary education experience of students and staff, is an important factor in building the capacity of countries, industries, institutions and individuals to harvest the benefits of cross-country cooperation on an equal footing. From mobility programmes across borders to promote collaboration and cooperation to curricular inclusion of international issues and examples to normalise an international perspective in all academic activities, impactful internationalisation is a key contributor to 21st century skill development.

Indeed, internationalisation and regional cooperation efforts are now recognised and measured as key characteristics of high-quality higher education institutions and systems by policymakers and in global ranking methodologies. International interconnectivity, education and experience are fundamental for countries, institutions and individuals to harvest the benefits of cross-country cooperation on an equal footing. Today, **even with the known benefits of international cooperation and collaboration, impactful internationalisation largely remains a privilege of the global elite.** Regional cooperation has emerged as a powerful tool for tertiary education impact at scale through investment in the strategic pooling of talent and resources (as noted below in the section on the Africa Centres of Excellence initiative).

Collaboration for Resilience

Since early 2020, the COVID-19 pandemic has afflicted most countries — leading to mass disruption of teaching and research and, especially, opportunities for in-person cross-border engagement. Nonetheless, universities have remained central to the fight to mitigate the impact of the novel coronavirus. **They have served as testing centres, manufacturers of protective equipment and research hubs, as well as training facilities for the highly skilled personnel needed to provide guidance and treatment protocols in the fight against the disease.**

In attempting to return to "normal", the most impactful outcome of international collaboration would not have been possible without higher education institutions, as shown by Oxford University's key role in developing a vaccine using data published on the coronavirus genome by a Chinese virologist at Fudan University. The Oxford/AstraZeneca vaccine is the mainstay of COVAX, the global vaccine initiative, which cites equitable access to COVID-19 vaccines for low-to-middle-income countries as its goal. Decades of research and collaboration at several universities were the foundation for pharmaceutical companies' efforts to design other vaccine candidates in hours (Pfizer/BioNTech) and days (Moderna). Now approved for use around the world, these two vaccines, which are also part of COVAX, use mRNA — "genetic script that carries DNA instructions to each cell's protein-making machinery" (Kolata, 2021). Researchers at the University of Pennsylvania and the University of Texas at Austin were instrumental in the development of the mRNA field and in isolating the novel coronavirus' spike protein, respectively. This work was also complemented by 25 years of research into lipid nanoparticles (conducted at the University of British Columbia in Canada) (De George, 2021; Airhart, 2020; Cross, 2021).

Efforts to solve complex social, environmental and economic challenges in energy, the environment, health and security have increasingly required collaboration between universities and industry, as few organisations have the independent capacity to deliver results on their own (Gaan et al., 2018). International collaboration should not be seen merely as the product of partnerships forged during extenuating circumstances, such as a once-in-a-century pandemic. In the long term, societies will benefit significantly from fostering stronger partnerships between their local higher learning institutions and international entities, whether public or private.

The COVID-19 pandemic also clearly exposed the fact that technology will be the primary resilience instrument for the tertiary education sector, and that tertiary education institutions (TEIs) will need to operate more strategically as teaching, learning and research embrace and adapt to remote delivery and online settings. To achieve this, tertiary education systems should invest in the development of their local digital infrastructure towards building more agile and flexible systems. This could take place through the strategic allocation of institutional funding to expand and update technological infrastructure for digital pedagogy, investment in learning science and training of faculty members. Institutions, staff and students equipped with sound infrastructure, resources and skills, who were already engaged in a culture of using technology for teaching and learning, have had a much easier transition to remote learning.

Building a digital ecosystem with the help of National Research and Education Networks (NRENs) is an important investment for countries seeking rapid improvements in their digital higher education delivery. Harnessing the power of technology means that TEIs not only profit from digitalisation but also advance it through the development of digital skills and the application of digitalisation across its functions and related research and development.

In this context, tertiary education systems can leverage the collaborative power of NRENs — which are specialised internet service providers dedicated to supporting the needs of research and education communities in their own country[2] — to mitigate the

1. This chapter broadly uses content from the World Bank Policy Advisory Note: Arnhold, N. and Bassett, R.M. (forthcoming). STEERing Tertiary Education: Toward Resilient Systems that Deliver for All. Washington, DC: The World Bank.

medium-term disruptions resulting from the pandemic. As Foley (2016) notes:

> "At its most basic an NREN can offer more reliable bandwidth at less cost, but it offers much more than that. Through its user identity management systems, an NREN is critical for (a) participation in international collaborative research and to connect faculty and students to the global academic community; (b) access to digital resources and databases, costly instrumentation (super computers, telescopes, electron microscopes, and so on), high definition video; and (c) exchange of big data files, and so on. A more advanced NREN can also provide a springboard for innovation in a country, supporting experiments in networking and new discoveries and services in IT that their members are exploring."

Investing in NRENs can provide widespread benefits, but these investments must also look at hardware and software investments to ensure the accessibility of these networked resources.

Collaboration for Equity

While we know such investments in and utilisation of technology have been a vital element of resilience planning for tertiary education, there have been notable equity implications in the move towards expanded digital delivery, not only for individuals with little to no internet access but also for institutions and even nations that lack the infrastructure and training to sustain operations at the scale and intensity required by digital delivery. **International collaboration between institutions and systems may be one powerful intervention that can promote equity at macro and micro levels of tertiary education.**

At institutional level, collaborations may offer viable platforms for students and researchers from lower-resourced, remote, understaffed, etc. universities to access coursework and research materials/experiences at wealthier, better-developed universities, thereby creating opportunities to close an important equity gap in access to high-quality teaching and research expertise, materials and facilities.

Systems collaborations, in theory, would also promote equity by creating partnerships that maximise negotiating power and scalability, where contracting for the costs of licensing, for instance, or with private internet access or technology hardware providers, could benefit from the far greater value of the collaborative environment (versus any single system).

Even at state/national level, international collaborations could promote development in a way that creates opportunities to close equity gaps via shared knowledge and resources. In fact, this happens to some extent through bilateral aid efforts, such as NORAD's massive programmes supporting higher education scholars and efforts in Africa.

NORAD aims to achieve the following impacts in low and middle-income countries by 2030: an expanded and better qualified workforce; increased knowledge; evidence-based policies and decision-making; and enhanced gender equality.

For the period 2021-2026, NORAD's flagship programme, NORHED (Norwegian Programme for Capacity Building in Higher Education and Research for Development), which supports collaborative partnerships between HEIs in Norway and the global south, will finance several higher education and research projects in Sub-Saharan Africa, Asia and Latin America with a budget of NOK1.1 billion (US$128 million) (NORAD, 2020).

Under NORHED II, Uganda, Ethiopia, Tanzania and Malawi had the highest number of projects approved, although several other Sub-Saharan African countries are also recipients. A key operational aspect of the projects focuses on collaboration between Norwegian HEIs, as the applicant, and multiple partners in each of the recipient countries. The previous programme, NORHED I, was implemented from 2013-2019 with a budget of NOK735 million (US$85.5 million).

Collaboration for Accountability

Cross-border collaboration among institutions and researchers has resulted in findings which promote public accountability on major global issues, such as climate change. The decarbonisation agenda has gained traction in recent years, and climate change is likely to remain a key policy issue for countries well past 2030. Entrepreneurs are turning their attention to climate solutions; the largest companies in the world have set goals to achieve carbon neutrality; and sustainability-focused investments in ESG (Environmental, Social and Governance) have grown significantly. In the last decade, the Sustainable Development Goals (SDGs) and the Paris Agreement, ratified roughly one year apart, have both formalised commitments to climate action.

In September 2015, just days before UN member countries ratified the SDGs, one of the world's largest automakers Volkswagen Group admitted to corporate subterfuge involving violations of emissions standards that affected roughly 11 million vehicles. To date, fines and settlements linked to the emissions scandal exceed US$34 billion, while estimates of combined health costs in the United States and Europe are at least US$39 billion (Oldenkamp et al., 2016). The exposé of Volkswagen's emissions inconsistencies and the resultant global scandal began with the collaboration of two independent non-profit organisations.

U.S. officials learned about the automaker's deception as a result of the International Council on Clean Transportation (ICCT) commissioning a research centre at West Virginia University to perform a study on emissions levels from light passenger diesel vehicles. The ICCT presented the results of the US$70,000 study by the Centre for Alternative Fuels, Engines and Emissions (CAFEE) to the Environmental Protection Agency (EPA) and the California Air Resources Board.[3] The centre's findings focused on real-world road emissions testing as opposed to laboratory-based testing which used a portable emissions measurement system. Researchers discovered that emissions for some vehicles were up to 35 times above approved regulatory standards. The automaker admitted to installing software that was activated when an emissions test was being performed. CAFEE has since built the largest database of vehicle emissions and efficiency data in the United States, which multiple government departments and the EPA now use for air-quality control.

Collaboration for Innovation

The most advantageous outcome of international collaboration is perhaps in the area of innovation, especially among academics and between academia and industry. Recent advances in computing power, neural networks and deep learning have transformed the artificial intelligence (AI) market which, in turn, is disrupting industries across countries and economies. Even with known and notable advances, scholars and practitioners insist that AI is still in its infancy with AI being reported as one of the most significant trends for the next decade, alongside ESG, blockchain and cryptocurrencies, among others despite or, more likely because of, the progress made over the last decade.

Universities have long been the conduits through which society explores new frontiers, contributing to economic, social and cultural development by educating, training and upskilling the cadre of professionals who build on the progress achieved by their predecessors. This progress has not come without social costs, however, as higher education is often criticised for contributing to human capital flight from lower capacity countries to higher capacity settings (the concept long known as brain drain).

AI researcher 'brain drain' may be a worrisome and growing trend in the US and elsewhere. From 2004-2018, there were 221 departures of AI faculty in favour of industry roles (Gofman & Jin, 2020). Universities will likely face significant challenges in retaining the capacity to train the next generation of academic researchers in AI. Moreover, industry players, rather than collaborate with universities, have been establishing their own research labs, effectively competing with universities' second mission (research) while also weakening the institutions' ability to perform their first mission, at least in the context of AI.

There is a strong need for universities and industry to collaborate, rather than compete, in advancing new fields such as AI, as their relationship is critically symbiotic —universities provide the talent and skill development of young researchers, while industry offers commercial and economic advantages, such as expensive computing power, access to the variety and depth of data needed to train highly specialised, technically agile individuals vital to the knowledge-based

2. See GEANT. NRENs: NRENs have pioneered networks, technologies and services for research and education since the internet's inception. https://www.geant.org/About/NRENs

3. Other sources cite the study's cost as US$50,000. For this chapter, the higher amount was used.

economy as it continues to expand across the globe, and opportunities for individuals and, by extension, societies, to monetise the commercial value of their ideas and intellectual property.

International collaboration highlight: China emerges as a collaboration powerhouse

Early in the 21st century, as China's wealth and influence rose, government officials launched the Forum on China-Africa Cooperation (FOCAC). Post-secondary education emerged as the centrepiece of the Forum, which provided more than 50,000 government scholarships to African students between 2010 and 2015, training for African professionals, and post-graduate and doctoral places for African students at prestigious Chinese universities. According to China's Ministry of Education, the number of African students enrolled at Chinese universities increased eighteenfold between 2005 and 2015. (FOCAC, n.d.)

Towards the end of the Forum's first decade, Sino-African relations on education expanded beyond scholarships and study visits for African students and scholars, and evolved into international collaboration between universities. In 2009, the Forum announced the twinning of Chinese and African universities with a focus on higher education development. Subsequently, China's Ministry of Education launched the 20+20 Cooperation Plan for Chinese and African Institutions of Higher Education to implement a model for collaboration between higher education institutions, featuring 20 Chinese universities and vocational colleges and 20 African institutions, building on the Forum's agenda. The 20+20 Plan includes multiple international collaboration strategies (Li, 2017).

First, partnerships between Chinese and African universities feature a voluntary, market-based approach to collaboration on multiple initiatives, driven by prior relations. In instances where universities from China and Africa did not share a history of collaboration, the Ministry of Education in the respective African country and their counterparts in China had to recommend and approve the partnership. Second, the 20+20 Plan also allows for individual initiatives between institutions, exchange programmes and professional development. Third, the Plan fosters partnerships to establish Confucius Institutes which are akin to the UK's British Council offices, France's Alliance Française centres, and Germany's culture-focused Goethe-Institut; although with one key distinction (Fredua-Kwarten, 2020). Unlike these well-renowned organisations which established standalone operations in several cities worldwide, Confucius Institutes have been established within several African universities.

China's strategy of a multi-layered approach to international collaboration with African universities is noteworthy, given the country's history of bilateral partnerships in higher education. Over fifty years, China's industrialisation facilitated its transition from a recipient of partnerships with Soviet universities, to a convener and provider of partnerships with African universities. In the 1950s, the country's foray into international collaboration with Soviet universities as the recipient had failed by the decade's end. As Li (2017) notes, "[a]lthough the Sino-Soviet Treaty of Friendship clearly indicated that the partnerships were based on equity, mutual respect and benefit, as well as friendship, the overall university partnerships were dominated by the Soviet side, and the Chinese side was not genuinely respected by the Soviet Union." Sino-African collaborations also first began roughly around the same time as Sino-Soviet university partnerships, but on a limited scale, focusing on student and teacher exchanges (Gillespie, 2001). It is also worth noting that the geopolitical landscape in the 1950s was significantly different from today's climate.

The most recent iteration of Sino-African university partnerships is now two decades old and the question of equity emerges once again. Some scholars question the altruism of the Chinese government in financing all the costs of Sino-African university partnerships, as well as officials' assertions that the approach is founded on the equity principle. **As we move through the 2021-2030 milestone decade for international development, those countries across the African continent that continue to strengthen university partnerships with China (and other global systems) are likely to model development that may also ultimately allow many of them to progress from *recipient to provider* systems.**

International collaboration highlight: The Africa Higher Education Centres of Excellence Projects

The World Bank's Africa Higher Education Centres of Excellence (ACE) Projects aim to build the capacity of Africa's HEIs in areas that are important for the region's development challenges and economic growth. **By addressing critical gaps in human capital and innovation in science and technology, ACEs become regionally acclaimed research and academic institutions in their respective fields.** The project embraces the importance of industry/sector partnerships in providing labour market-relevant training, and that of regional and international academic partnerships in raising quality through the joint delivery of programmes and sharing of resources. Developing such regionally specialised centres of excellence — by coordinating national investments regionally — facilitates economies of scale through the sharing of expensive high-end technology, laboratories, equipment and trained faculty.

Since the launch of the first phase of the project in 2014 in West and Central Africa (Africa Centres of Excellence for West and Central Africa, ACEI), ACEs have provided opportunities for African students to enrol in quality, market-relevant postgraduate education programmes in priority growth sectors such as health, agriculture, extractive industries, renewable energy, water, railways, information and communications technology, and education. Following the success of the ACEI model, the second phase was launched in Eastern and Southern Africa with an approach aimed more at regional integration. The Africa Centres of Excellence for Eastern and Southern Africa (ACEII) Project provides competitive scholarships for students to undertake a two-year Master's degree programme at an ACE outside of their home country. In addition, ACEs support technical assistance to develop partnerships with the private sector. Under ACEI and ACEII, there are 46 university-based ACEs in 15 participating African countries that are involved in cutting-edge research.

The third phase of the ACE initiative ACE Impact is now operating in West and Central Africa. The goals of ACE Impact are similar to its predecessors; however, there is a stronger focus on development impact, which will be achieved through deeper engagement and partnership with private and public sector stakeholders. In addition, ACE Impact places increased emphasis on strengthening institutional impact by supporting the adoption of global sound practices for university governance and operational policies.

During implementation of the ACE projects and beyond, the ACEs will build the capacity of HEIs in Africa to create new knowledge that meets the aspirations of the region. In addition to meeting ACE targets, the projects complement ongoing national projects on skills and innovation, raise youth employability and enhance cross-border research networks. Through performance-based financing linked to quality, relevance and sustainability, universities can be at the forefront in addressing development challenges within their society. The ACE model — which has already led to, among other things, crucial research on the Ebola and COVID-19 viruses and the development of a plant-based Malaria prevention medicine — can be successfully adapted to different national and regional contexts to create programmes for regions beyond Africa.

Collaboration is the future

This chapter has outlined the benefits of university partnerships and international collaboration in various contexts: the turmoil caused by a global pandemic, detecting corporate malfeasance, and recruitment practices that may hinder progress at the next frontier of AI. International collaboration in research has risen rapidly in the 21st century and surged during the initial months of the COVID-19 pandemic. Although collaborations have retreated to previous levels, there is, however, a growing belief that geopolitics poses a threat to collaborations across borders. Concerns about foreign influence whether genuine or not as well as reforms that target specific universities and research agencies, collectively endanger academic freedom and institutional autonomy, and impede collaboration.

Recently, academic staff and researchers at institutions in the world's two largest countries (based on research output) have been vocal about their growing reticence to seek out future collaborations (Silver, 2020). Speaking on this issue, Kei Koizumi former senior adviser on science policy at the American Association for the Advancement of Science noted that "Nobody wants to

get hassled for doing research" (cited in Silver, 2020). Some are reconsidering their participation in academic exchanges and conferences, even in the face of some powerful examples of collaborations borne out of global conference introductions. When Emmanuelle Charpentier and Jennifer Doudna first met at an academic conference in March 2011, they could not have anticipated that that meeting would lead to the development of a method for genome editing. Less than a decade later, their collaboration would earn them the Nobel Prize in Chemistry. Face-to-face and side-by side interactions such as theirs, according to Nature, are the origin for as much as 90 percent of international collaborations, but tactics at national level that limit the academic and entrepreneurial freedoms of researchers may make transnational collaboration efforts less palatable or worthwhile for researchers and the private sector alike. While the current decade's prospects for international collaboration are unlimited, emerging risks particularly those linked to geopolitics could forestall the groundwork needed to investigate new frontiers.

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2.7 Higher Education Management. Promoting new leaderships and innovation

Supporting innovation and change in higher education through leadership and management development

Arnaldo Barone, Leo Goedegebuure and William Locke

Abstract

Few university leaders and managers have experienced the challenges currently faced in their higher education (HE) work. Leading and managing in this environment is likely to require a different mindset and skillset and, in many ways, a different leadership style. Therefore, leadership and management development in HE is more important than ever. This paper focuses on how to support innovation and change in higher education institutions (HEIs) through leadership and management development. It is grounded in research and evidence regarding successfully strategies in bringing about transformation, especially in challenging times. It starts with a focus on Australia and also draws on expertise from the UK, the US and elsewhere. It asks: What is the relationship between leadership, management and performance in HE? Does training in these actually lead to improvement? We find that program effectiveness is related to various design and delivery elements and also the effectiveness of post-training implementation. Furthermore, there is a need to differentiate between leader development, which focuses on the level of individual leaders, and leadership development which looks at the development of collective leadership beliefs and practices, in addition to personal development.

Introduction

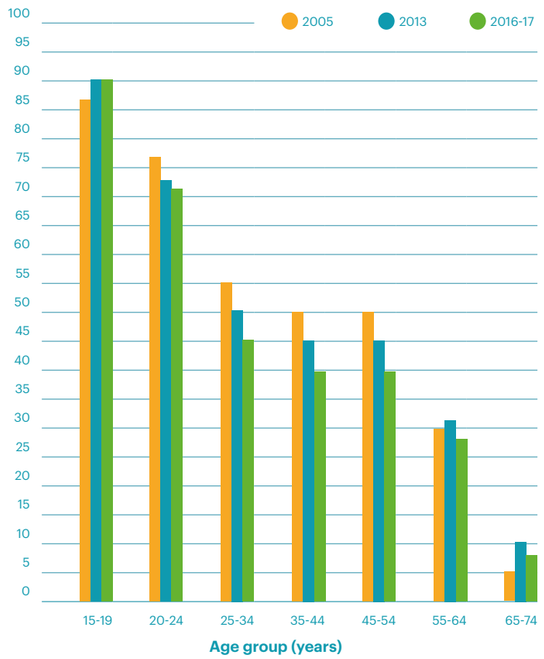
This paper focuses on how to support innovation and change in higher education institutions (HEIs) through leadership and management development. It is grounded in research and evidence regarding strategies that have proven successful in bringing about transformation, especially in challenging times (Goedegebuure, 2021). The paper starts with a focus on Australia, but then broadens to draw on expertise from the UK, the US and elsewhere.

In the global recovery from COVID-19, HEIs face several major challenges, many of which have been accelerated by the pandemic and will be part of the journey towards building a 'new normal'. These include finding a new balance in the digitisation of teaching, research and university management and addressing issues around cyber security, the protection of data and the sharing of information. As part of this, we have seen the increasing use of big data analytics to inform decision-making, often without sufficient critical input. In addition, there is a need to address climate change and achieve sustainable development through education, research and the sustainable management of institutional infrastructure. If this were not enough, HEIs are faced with the challenge of reviving the public, social and common good purposes of higher education (HE) and revitalising their engagement with place and location.

Few leaders and managers in universities – even the most knowledgeable and capable – **have experienced such challenges during their working careers in HE.** Even after the global financial crisis of 2008, they will not have experienced the level of contraction and retrenchment they are currently facing. **Leading and managing in this operating environment is likely to require a different mind-set, a different skill set and, in many ways, a different leadership style. Leadership and management development in HE is thus more important now than ever.** Yet participation in such developmental activity is declining, and that includes involvement in formal learning and non-formal learning – or learning that does not necessarily lead to a formal qualification.

Participation in learning and development

Graph 1 - Participation in formal & or non-formal learning by age groups, 2005, 2013 & 2016-17 (a) (b) (c) (d)



Source: Australian Bureau of Statistics, 2017

Graph 1 draws on the example of Australia and shows the natural decline in participation in both forms of learning as individuals get older. However, it also shows a decline in each age range between 2013 and 2016-17 and in most age ranges throughout the period since 2005. There was also a particular decline in male participation between 2005 and 2013, during which the global financial crisis occurred. The decline was steeper for non-formal than formal learning, suggesting this is where the most serious issues are.

Not surprisingly, expenditure on training was much more likely to be made by larger employers, with 100 or more staff, than by smaller employers. 84% of public sector employers invested in training, but only 41% of private sector employers. The 'Education' sector was not far behind 'Government Administration and defence' and 'Electricity, gas and water supply' in the level of spending, with 'Manufacturing and retail trade' and 'Transport and storage' some way behind all of these sectors.

Motivation

To understand how we might address this in the HE sector, we need to know a bit more about the motivation for selecting leadership training programmes. This is no small matter, with 356 billion US dollars spent globally on leadership training. Often these programmes are chosen by word of mouth, which is at least based on personal experience. Is this a good or bad thing? It only reflects one person's experience of, probably, a single programme. However, what suits one person or one employer, may not suit another.

Things change quickly and, while HE is generally highly regarded, it is sometimes considered – particularly by politicians – to be poorly managed. Its leaders are often criticised for being paid too much, constantly asking for more money from governments and not managing risk effectively. There are therefore calls to improve the leadership and management skills of the HE workforce and borrow from the corporate sector while, in parallel, there is an influx of professionals into HE from this sector.

However, what is the relationship between leadership, management and performance in HE? Does training in these areas actually lead to improvement? *"In spite of a growing number of published reports, much remains to be learned about the effectiveness of leadership development programmes."* (Packard and Jones, 2015: 155)

An Organisational View

There seems to be a link between those organisations that regard learning and development (L&D) as critical to business success and those that perform well.

> "...organisations that view L&D as critical to business success are continuing to deliver top performance compared with their peers...Yet at the same time, survey responses...suggest that many L&D organizations are falling short in their ability to exert a measurable impact on business performance..." (HBSP, 2018: 2).

Nevertheless, providing measurable evidence of this link remains problematic. It may not be a cause and effect, but the naïve hope that it is seems to endure in many organisations: "...many companies naively assume that leadership development efforts improve organisational efforts." (Collins, 2002: 1)

Making a lasting impact

There is some evidence, for example from Lacerenza et al (2017), to suggest the positive effects of leadership training, such as:

- a 25% increase in learning
- a 28% increase in on-the-job leadership behaviour
- a 20% increase in overall job performance
- an 8% increase in subordinate outcomes, and
- a 25% increase in organisational outcomes.

However, seeds can only germinate if they are planted in fertile soil. If people learn to lead but then cannot enact what they learn because the organisational environment is not conducive to this, leadership will not be improved, and the results will not follow. **Programme effectiveness will thus be related to various design and delivery elements, but also to the effectiveness of post-training implementation.**

We have provided some of the broader context for the issues we wish to raise. We will now focus more on the challenges for HE.

Challenges for higher education

A volatile environment

There is a wide range of challenges facing Australia, as in other national HE sectors. First and foremost, there have been barriers to international student mobility arising from the global pandemic and the closure of borders, and the consequent reduction in tuition fee income for many HEIs. On the domestic public policy front, there have been changes at federal level that have huge implications for the sector. One of the most important is the federal government's 'Job-ready Graduates' policy, which aims to create price signals (including disincentives) for students and universities with regard to which disciplines the government wants to prioritise. Oddly, the policy's use of price signals includes a number of internal contradictions: in many cases, the disincentive provided by a price rise for a course is contradicted by an increase in funding to universities that encourages greater provision of the course in question, effectively blunting the effectiveness of this allocation mechanism.

Despite these contradictions, the policy has resulted in an overall reduction in income for HEIs from domestic students (Warburton, 2021). The same government also barred universities from accessing the 'Job Keeper' – or furlough – scheme, which has been such a lifeline for other industries. Over a longer timescale, less federal government funding has been available for research, such that more than 50 per cent of university research spending now comes from discretionary sources of income rather than directly from government funding (Larkins, 2020).

As a consequence of these challenges, we have seen major contractions and retrenchments, including significant reductions in capital expenditure and staff redundancies. Casual (or contingent) staff have been dismissed, many senior academics have taken early retirement and new recruitment has been frozen. Some have criticised this as a 'sledgehammer' approach, pointing out the lack of precision used in response to the fall in tuition income from international students. Others have provided a more nuanced analysis of what a more sophisticated approach to these new circumstances might look like (Baré et al, 2020; Tjia et al, 2020). Either way, these circumstances have implications for HEIs' capacity to grow and the kind of leadership we need now and into the future. This is exacerbated by the sector's business model, which has relied heavily on international student fee income, in part, a consequence of the policies of the federal government, as well as universities' own strategies.

There are of course both short and long-term impacts resulting from the COVID-19 pandemic. One positive, if there are any, is in the way limited mobility has accelerated the sector's acceptance of online learning. While this can be a good thing, it also poses challenges for future education strategies. A number of UK universities may have decided that they will continue with online lectures even after students have returned to campus

(Coughlan, 2021). Australian universities may decide to follow the same path, but can HEIs really expect students to pay the same fees they did for a campus experience? An increase in online offerings also increases the possibilities for competition, with the potential for new entrants to enter the Australian market (and indeed, vice versa for other nations) using online formats. The increasing online reality will likely need different sorts of leadership and management skills. So what will be the optimal combination of in-class and online education, and what does this mean for how universities organise themselves?

Multiple purposes and characters

A university is a community of scholars, teachers and learners. Universities undertake a multitude of activities, with the education of students and the production and dissemination of new knowledge at their core. However, these common purposes conceal the diversity of institutions, with some orientated more towards teaching and others towards research, incorporating a wide range of undertakings which sometimes compete with each other. Their location also determines their character, including whether they serve regional, remote and rural communities, for example, or are part of a metropolitan, cosmopolitan network with global connectivity. The variety of disciplines within them, and how these interact, can also influence their organisational cultures. We should add to this non-university tertiary education institutions and private – for profit and not-for-profit – providers. **This multiplicity of purposes and characteristics has implications for choices around the purpose and form of leadership and management development.**

Diversity

This diversity also extends to the students and staff who learn and work in such institutions. How are the diverse needs of these different groups to be accommodated, and how is leadership and management development to be designed accordingly? What is its ultimate impact on these diverse students and staff and how can we evaluate its effectiveness, since this will depend on how we define and measure what it is that we do?

Leadership and management in HE

Setting these difficulties aside, **the HE sector is not short of leadership and management development programmes. However, when finances are constrained, finding the right kind of leadership development becomes even more crucial.** There are of course generic programmes available, but there is a large number of programmes that have been designed specifically for the sector and taking the sector's particular characteristics into account. Research by van der Wende (2019) found almost 300 programmes around the world at master's and PhD level. Our own LH Martin Institute programmes, including the Master's in Tertiary Education Management and the Emerging Leaders and Managers Programme (eLAMP), are examples of this (Goedegebuure, 2021). There have also been a large number of programmes aimed at developing countries.

Michael Beer and colleagues (2016) noted that a common approach among many leadership programmes is their implicit view of organisations in reductionist terms, as an aggregation of individuals. This view filters through into the design and delivery of leadership training. So often, these programmes rest on providing programme participants with the skills and capabilities they are thought to need to be better leaders. The hope is that by raising an individual employee's skill level, this will, at aggregate level, yield a change in organisational outcomes. One problem with this approach is its failure to recognise that organisations are ecosystems of interacting parts. In other words, their focus is on agency, but there is little consideration of structure, which can place limits on the benefits that might accrue to an organisation through an increase in the skill level of individual managers and leaders.

Following bouts of training, individual employees return to their organisation, full of enthusiasm and eager to use the knowledge gained in these programmes, only to find they are unable to apply their new knowledge and skills because they face barriers. These can include entrenched cultures that are antithetical to change, or senior management which promotes a culture that does not welcome, let alone encourage, the application of new knowledge, approaches and techniques.

This helps to explain the findings of John Burgoyne and colleagues, who investigated what people thought

of their training. In initial surveys, 78 per cent of respondents thought the investment in their training was worth it, but this dropped in follow-up interviews, which found widespread uncertainty over whether, and to what extent, this was actually the case (Burgoyne, Mackness & Williams, 2009). **It is the organisational reality which dampens post-training enthusiasm, as individuals find they have less power to change the system surrounding them than the system has to constrain them.** Eventually, they fall back into old ways of doing things. **The consequence is that huge investments in leadership training can go to waste and we do not see the promised organisational benefits.** Their impact is therefore short lived.

This is where the fertile soil analogy is so relevant. The organisation, its structure and culture, represents the soil upon which the individual employee can flourish and grow – or not.

Evidence of impact in HE

The lack of evidence of the impact of leadership and management development extends to the HE sector. To paraphrase Sue Dopson and colleagues (Dopson et al, 2016), **for a sector known as part of the "knowledge industry", it has a relatively poor record of investing in understanding and learning from its own in/effectiveness.** Such training and development as exists is often built on individualist terms, taking little account of organisational and system-level realities. This lack of evidence is problematic, and research suggests that our leadership development programmes are similarly treated in a siloed fashion, in fragmented terms so that they are poorly integrated with other strategic organisational initiatives.

There are also issues around what we mean by 'leadership'. Universities can be bastions of tradition and, so often, the predominant view of leadership tends to be hierarchical, organisationally-based and attached to a position. Increasingly, however, we know that leadership does not have to be attached to a position. As Packard and Jones (2015) **noted, there is a difference between leader development and leadership development. Leader development focuses on the level of individual leaders, while leadership development looks at the development of collective leadership beliefs and practices, in addition to individual development.**

All this means that it can be hard to measure the impact of leadership and development in a sector that serves many different purposes and undertakes a range of functions, features different views of what leadership is, and has constituent organisations that could sometimes be more aptly described as a confederation of individual parts.

Despite this, there is some evidence on the effectiveness of HE leadership programmes, including the *Baseline Study of Leadership Development in Higher Education* by John Burgoyne and colleagues. The study conducted a survey of HEIs in the UK, as well as interacting with individuals and undertaking institutional visits with about 20 per cent of the HEIs who responded to the survey. The results of this research showed that about two in three HEIs were making some attempts to see if their programmes were working. However, most of this was informal and focused more on the quality of training sessions and less on the impact the training had on the organisation.

Building effective programmes

So how do we build effective programmes? One recent proposal from Christina Lacerenza and colleagues (2017) began by noting that leadership programmes should be systematically designed to enhance leader knowledge, skills, abilities and other components. They then adapted a model based on the work of Donald Kirkpatrick (1959), who evaluated effectiveness according to four criteria, which he termed:

- Reactions: how do people respond to the training, are they excited by it? Did they find it valuable?
- Learning: did the training lead to a permanent change in knowledge or skill?
- Transfer: how well and willing will the trainee be to use the knowledge they gained through the programme?
- Results: did the training help the organisation achieve its objectives, such as increased turnover or reduced costs?

Figure 1: Evidenced-Based Best Practices for Designing a Leadership Training Program

Evidenced-Based Best Practices for Designing a Leadership Training Program

1. Resist the temptation to think that leaders cannot be trained; evidence suggests leadership training programs are effective.
2. Conduct a needs analysis and identify the desired outcome(s) based on stakeholder goals before designing the program.
3. Use multiple delivery methods when possible (e.g., information, demonstration, and practice) and if limitations prevent this, choose practice instead of other delivery methods.
4. Use caution when spending additional resources on 360-degree feedback (evidence indicates that it might not be more effective than single-source feedback).
5. Provide multiple training sessions that are separated by time rather than a single, massed training session.
6. Use caution when implementing self-administered training and instead, choose an internal or external trainer (evidence shows no differences in the effectiveness of internal and external trainers but indicates that self-administered training is less effective).
7. Consult with others outside of your field to ensure the program is both evidence-based and practically relevant (e.g., if you are a practitioner, collaborate with an academic).
8. Ensure the program is designed appropriately according to the desired outcome using the guidelines provided below.

Learning	Transfer	Results
• Use multiple delivery methods • Conduct a needs analysis • Include hard skills (i.e., business skills)	• Use multiple delivery methods • Conduct a needs analysis • Provide feedback • Use a face-to-face setting • Make attendance voluntary • Have multiple sessions • Include hard (i.e., business skills) and soft skills (i.e., leadership skills)	• Use multiple delivery methods • Hold on-site • Require mandatory attendance • Have multiple sessions • Provide as much training as possible (longer programs are more effective) • Include soft skills (i.e., intrapersonal, interpersonal, and leadership skills)

From Lacerenza et al (2017)

As shown in Figure 1, the model posits some practical suggestions for how robust training can be built, which are listed in points 1 to 8. Their main point was that **we should identify the outcomes we want before we go on to develop or deliver leadership training, because design impacts outcome.** In doing so, we should ask: who are the stakeholders and what outcome(s) are *they* trying to obtain? Are there multiple outcomes, and if so, are some outcomes more important than others?

Developing and assessing effective leadership training

Returning to our earlier point, how do we build assessment and evaluation into the design of a training programme? We consider two proposals: the first is a framework posited by Dennis Tourish (2012), who proposed a virtuous circle made up of five discrete steps:

1. Develop a Vision, with short, medium and long-term goals which focus on issues central to the HEI's strategy.
2. Identify appropriate leadership behaviours to produce a competencies framework or key behaviours statement.

Institutional Case Study Box - **Australian Catholic University and the Emerging Leaders and Managers Programme (eLAMP)**

The Australian Catholic University (ACU) is multi-campus university that operates seven campuses across three Australian states and the Australian Capital Territory, as well as housing a campus in Rome. It was formed following the 1991 amalgamation of four institutes of higher education and offers education and training across a range of courses, from health sciences, to theology, law, business, education and the arts.

The University is a good example of how fertile soil can make an impact on the quality of leadership and management. Its commitment is visible across a suite of documents, not least of which is its Enterprise Agreement (between the University and unions), which states a commitment to develop leadership and management skills in its staff to enable the University to meet its strategic goals and priorities.

One of the programmes to gain official recognition in the Enterprise Agreement is the national

Emerging Leaders and Managers Programme, or eLAMP. A central design feature of eLAMP is the combining of theoretical insights with practical realities through a critical reflective practice approach, both in the way it is structured and its facilitation practices (Thompson and Thompson, 2008). The programme encourages participants to take a step back from their day-to-day work to think about and discuss what they are doing, why they are doing it, and why they are doing it in the way that they are. This is informed by a series of theoretical and conceptual perspectives that participants may find challenging but also rewarding and insightful.

ACU has been a regular subscriber to this national programme. The benefits in terms of improved leadership and management have manifested in a number of ways, not least of which is an increased ability of the University to meet its strategic goals across a suite of indicators, including rankings, student satisfaction and graduate outcomes.

3. Select potential leaders who show high leadership potential to undertake the training, based on their behaviours.
4. Identify problems that might obstruct the HEI in achieving its goals, give people the job of solving them and provide appropriate support.
5. Assess the behaviour change and the impact on the HEI's performance to see whether the problems have been resolved, the major goals have been achieved and there is a sufficient return on investment.

Another proposal is from Dopson and colleagues (2016), who recommended the development of a research programme to create a better evidence base (including large-scale surveys, cohort studies and comparative case studies) and a national research programme. The programme would focus on five areas, including:

- Identifying promising leadership interventions that have a robust evidence base.
- Providing clarity on the conceptual and theoretical basis applied to leadership and leadership development in HE.
- Developing and outlining a conceptual framework for thinking about leadership development in HE at different levels and different contexts.
- Identifying tools or metrics currently used to evaluate programme effectiveness and impact.
- Identifying gaps in literature and making suggestions for future research.

Dopson et al also recommended the development of learning forums with broad and diverse representation, to bridge the boundaries between "different epistemic communities and knowledge paradigms, focused on real life work problems that participants face" (Dopson *et al*, 2016: 36).

Issues and questions

Ultimately, the question is, not just 'Is leadership and management development effective, but can it be effective, and if so, how can we ensure that it is effective?'

- Can training improve leadership and management in HE?
- If so, how do we ensure we design effective training programmes, especially in a multi-purpose environment such as an HEI?
- Are current training programmes too focused on a 'reductionist' approach? Is a systems approach warranted? If so, how do we design these sorts of programmes?
- How do we improve measures of their impact and benefit?
- How do we determine the best way to identify training needs? Word of mouth? Other?
- What determines 'fertile soil' and how do we achieve it?

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Recalibrating the Missions and Roles of Higher Education: A Question of Balance

Norzaini B. Azman

Abstract

This paper proposes reforms to higher education, based on the notion of balancing its social and economic values, its role as a public/societal institution with a more robust view of its social contracts, and its goal of promoting social capital/civil society in developing countries. The paper summarises the positive and negative impacts of neoliberalism in emerging higher education systems, particularly on accountability and productivity, funding, research and innovation, and working conditions for staff. It argues that future higher education reforms should consider its broader role as educational and humanistic institutions, with more egalitarian, collectively owned and participatory democratic approaches. In this framework, higher education reforms in developing countries should consider the democratic implications of knowledge development and dissemination, i.e., a broad-based innovation strategy; an integrated academic role and interdisciplinary orientation to education, research, and service; the promotion of ethics and morality and the enhancement of social enterprise and the public service of the institutions and their professors. The paper will showcase specific practical strategies or projects deemed relevant to realise the potential of the recommended reforms.

Introduction

Throughout history, higher education, one of the longest-lasting institutions in the world, has played a crucial role in serving its communities and fulfilling the public good. It has contributed to the purpose of society, from generating and transmitting knowledge to grooming future leaders and citizens to building nations. Since its inception, the role of higher education has always been to educate its students to become responsible citizens and provide access to high quality educational, research, and service programmes (Thelin, 2011). However, these interests or values have shifted as institutions began embracing the logical and changing expectations of the economic, social and political environment of each nation and for globalisation.

As higher education institutions (HEIs) and systems worldwide manoeuvre the changing expectations caused by academic capitalism, state funding reductions, accountability movement, information-based technology and knowledge-driven economy, they have significantly modified both their purpose and values, and altered their academic processes and operation. The reforms have created tensions and brought into debate the very meaning of the university vis-a-vis the demands and expectations of the economic, social and political environment in each country (Tight, 2019). Many have contended that the social contract between the nation and higher education has been weakened, if not broken (Kromydas, 2017). The idea that the role of HEIs in developing citizenry and enhancing society has been replaced by and limited to financial and marketplace needs.

The Changing Faces of Higher Education in Malaysia

In emerging higher education systems, reforms moving towards a knowledge-driven economy have been of great importance for nations in economic, political and social terms (OECD, 2008). In the context of a developing country like Malaysia, for example, various national policies and blueprints were developed to align the role of higher education with the overall national development policies. Nevertheless, government policies and the higher education sector were still unable to fully address the socio-economic gaps and promote social mobility and well-being (Asian Development Bank, 2012). The impact of higher education in terms of teaching, research and service in the last three decades are found to be inconsistent with the government's overall vision (Vision 2020) and economic development plans (see 12th Malaysia Plan by Government of Malaysia, 2021 and Science Outlook Report by the Academy of Sciences Malaysia, 2021).

The government's highly neo-liberal policies and stakeholders' expectations, particularly industries, were not always coherent and clear about the purpose and direction for HEIs. Fundamental values of the national higher education –equality, social parity, citizenship, community development, and sustainability– were not given adequate attention. Arguably, there has been a steady drift away from core ideals and behaviours that ought to define higher education's social contract with society. Thus, despite over half a century of interventions and waves of reforms in Malaysia, higher education institutions, systems, and practices have paid scant attention to the distinct values and goals, or missions and visions that connect higher education to the major challenges of local needs and contexts.

To tackle the ever-growing social, cultural and environmental issues due to the overemphasised economic policymaking and the anticipated spiral effect of the COVID-19 pandemic, developing nations need a radical shift to strike a balance by acknowledging that higher education, apart from being an economic instrument, is a vehicle for social transformation and civilisation. **A shift towards a more balanced model, where knowledge is not only subordinated to economic reasoning but is based on the integrated notion of social, economic and sustainable development values, can inform a new societal paradigm of a genuine knowledge-based-society. The economy should become a means rather than an ultimate goal for human development and social progress in this integrated form.**

Positive and negative impacts of neoliberalism on emerging higher education systems

The Perfect Storm: Tangible Benefit of the Market place

Features of the contemporary higher education landscape, including neo-liberalism, and theories of human capital, are considered pivotal enablers for a new model of higher education. Functions such as market orientation and strategic outlook served as good enhancements of higher education institutional values such as accountability and relevancy. Over the past three decades, HEIs have been compelled to engage and interact with external stakeholders resulting in a more concerted partnership between government and industry. For example, through the liberalisation and privatisation of higher education, the number of private HEIs in Southeast Asia has increased, mostly in the form of for-profit initiatives, providing access and equity, empowering more people to attend higher education, while also providing programmes and services integral to economic needs. Great strides have also been made to address and redress the problems of access to education and the low completion rates of students (Asian Development Bank, 2012). Higher education has been successfully used as a tool to overcome differences in background, culture, and privilege (Azman, 2019b), hence further emphasising its obligation to the public and its role as social mobility, equaliser and justice.

State Financing-Performance based Funding

Another significant manifestation is performance-based funding, which seeks to incentivise outcomes such as job placement or research effort and quality by making institutions compete for additional revenue. This has prompted HEIs to assess how well they function, thereby improving their academic and student services. Performance-based funding also helps to limit the range of activities that HEIs pursue by rewarding some activities more than others, thus reducing the diversity of institutional missions. However, performance-based funding has led HEIs to concentrate on tasks proven helpful in securing funding while reducing the emphasis on public and community engagement. HEIs started to be commoditised as products and services competing for market share and economic return on investment (ROI) as management focuses more on fiscally efficient educational services and delivery of the curriculum.

As public funding declines, public HEIs increasingly operate like for-profit institutions, as businesses that provide education to make money, consequently changing the value of knowledge from public good to private good at a cost. Knowledge or 'the truth' is thus made less available, especially when it does not benefit the institution's financial interests. Specifically, the neoliberal models of management affect decision-making

and the institutional language of accountability has replaced that of social responsibility (Santiago et al., 2015; Schoorman and Acker-Hocevar, 2013). This shift in management to focus on markets and accountability has also affected the ability of institutions to address inequities experienced by faculty members (Azman, 2020; Jones, 2012), as values of collegiality, inquiry and debate are replaced by performance and output accountability (Olssen and Peters, 2005).

Educating vs Training

In many nations' higher education policy statements, the neoliberal paradigm subscribes to promoting HEIs not only as a system driven by the needs of industry and the labour market but also as fulfilling the traditional purposes of higher education in terms of educating actively engaged and holistic graduates. For instance, under the Malaysian Education Blueprint- Higher Education (2015-2025), a holistic graduate paradigm is proposed to ensure the development of holistic, entrepreneurial, and balanced graduates who would have relevant disciplinary knowledge and skills, ethics and morality, along with the appropriate mindsets, behaviours, and civilisational literacy to enable them to contribute to the harmony and betterment of the family, society, nation, and global community. Clearly, such beliefs regarding higher education include individual prosperity and employability as a function of education, and other benefits such as good citizenship. If Malaysian HEIs accomplished such ideal goals as those described within the policies of developing holistic graduates, successfully instilling traits and abilities in their graduates, this would be synonymous with economic vitality and human morality development.

The issue remains whether Malaysian HEIs have shifted from placing greater emphasis on helping students fulfil a broad range of human capacities to emphasising and fostering employability potential to comply with government established graduate employability rates. This emphasis on employability rates allows the government and the public to justify funding for public higher education as an investment rather than an expenditure, with expected financial returns. However, critics opine that HEIs have not been producing a qualified workforce for the market and that, even with an occupational focus, a vast gap lies between teaching and practice.

HEIs have altered their curricular content to favour disciplines with high potential returns on financial investment and also curriculum delivery via cost-efficient distance learning, or greater reliance on part-time/causal faculties. As a result, liberal arts and social sciences and humanities majors have declined while business, technical and health fields have grown. A significant trade-off occurs between broad formal education and narrow credentialing. Students appear to be motivated by more explicit utilitarianism and vocational desires in their course and major field choices. Parents and students are adamant about focusing on short-term ROI and getting an education that will get them a job, preferably well paid. The personal and economic benefits of higher education are seen as more fundamental than its social benefits (Marginson, 2007). **The belief that a higher education degree is essential for socio-economic success in life remains firm, but the public value of that credential seems to be diminished.**

A Tide of Academic Capitalism

Commercialisation forces (competition among educational institutions; orientation of profit; production and sale of educational and research services) are not necessarily negative for the higher education sector. The knowledge-based economy created a need for a tremendous expansion of the national research capacity. Research became a much larger part of the HEIs' mission in the latter part of the 20th century, and it was also linked in the public mind to national and local economic viability. HEIs' research functions have been attributed major roles in society, and governments and businesses continuously urge HEIs to contribute to knowledge generation through research not only for technology advancement but also for solving social problems.

Nevertheless, the need for HEIs to seek corporate sponsorship and to privatise the gains from their research can often mean, to a certain extent, abandoning objectivity. Moreover, the financial benefits of corporate-sponsored research present a lucrative alternative to other, less profitable ventures, resulting in the downsizing of areas such as the humanities that represent civic and social good but with minimal profitability. These same pressures to commercialise research and knowledge transfer are felt throughout Malaysian HEIs. Significant portions of funding have been targeted towards research in areas where commercialisation is more likely (e.g., technology, science). Yet, despite the emphasis on the commodification of research, few Malaysian HEIs are earning a significant portion of their budget from patented inventions or innovations (Academy of Sciences Malaysia, 2021).

One of the evident legacies of the new management is increased pressure to quantify the impact of higher education. While HEIs are pushed to solve economically and socially oriented tasks set upon them, the assessment and rewards of their achievements remain skewed towards economic or tangible results such as graduation rates and research publications which can be easily measured by numbers and within the short term, rather than the less tangible gains made in knowledge and understanding, and preparation for work and citizenship. Such practices predicate funding measurable outcomes at the expense of those that are more difficult to quantify in financial terms. In fact, academic integrity or a lack of it is confounded by a pervasive new management orientation based on tangible outcomes and the view of knowledge as a commodity. The emergence of global university brands and influential international rankings have also resulted in negative perceptions of academic integrity. which, in turn, significantly impact institutional reputations (Azman, 2019a; Azman and Kutty, 2016).

Thus, although transformation discourse combines both the economic outcomes of education and the social or liberal arts purposes of education, the implementation and assessment tend to measure only economic results. Non-financial benefits – such as improved health, functioning democracy, or social equality increase the value of education in ways that ROI assessments specifically, and neoliberalism, in general, fail to include. These linkages between purpose and outcomes raise questions and implications for HEIs, creating a new ideal they must negotiate with in the future.

Emerging higher education systems worldwide tend to adhere to models of neoliberalism depicted above, with varying impacts on education and society. The obvious potential benefits of neoliberalism are very clear in terms of economic development, yet it simultaneously wreaks damage on educational or social conditions. The ideology results in a tension between the free market values and those of civil society. The notion that HEIs should be defended as centres of critical scholarship and social responsibility appears irrelevant. Arguably, what may be lacking is not the ability of higher education to reclaim its public purpose and centrality but its reluctance to do so in an environment where dissent is unpopular, and conformity is the order of the day.

Reform in Developing/ Emerging Countries

The vision of the future of higher education includes action by institutions and graduates to alter the public discourse regarding the role of higher education, focusing on how it could better serve as an inclusive and diverse public good. There is a need to blend the focus on equity and justice with a corresponding emphasis on individual economic empowerment and placing the purposes of higher education squarely within public and private spheres. These two purposes, frequently framed as mutually exclusive, can and should exist in tandem. HEIs need to strike a balance between market success and public mission.

Arguably, this notion of public and private goods as an implicitly balanced framework is advocated in many national policies. In this "balanced" framework, higher education is seen as conferring both individual and social benefits, improving both social and economic conditions. This framework allows for a separate-but-complementary set of effects of higher education, spanning the traditional and neoliberal purposes. Most developing nations underline this balanced framework and the need for the nation to remain economically competitive through education while also pushing for the development of educational or academic capital that results from education (Asian Development Bank, 2012). Education is key to a country's economic and social prosperity, therefore, developing countries aiming towards becoming developed and prosperous nations require talented citizens who not only are well-educated but also driven by their humanity and civic spirit. This means that the future of higher education requires it to adopt both the traditional ideologies and neoliberal of higher education purposes and ensure that they operate in tandem instead of in competition.

Against this backdrop, higher education reforms in developing countries should consider the democratic implications of knowledge development and dissemination, i.e. a broad-based innovation strategy; an integrated academic role and interdisciplinary orientation to education, research, and service; the promotion of ethics and morality, including the quest for truth, as core values in education, research and leadership; and the enhancement of social enterprise and the public service of the institutions and their professors. The rest of the paper will showcase two specific practical strategies or projects deemed relevant in realising the

potential of the recommended reforms. The examples are, however, limited to the Malaysian context.

The role of HEIs as public/societal institutions with a more robust view of the social contract

Contribution to the public good is of immense significance today. The definition of public good has changed over the years as the needs of society have changed. It involves not only general education and cultural enrichment but also professional training and certification, lifelong education, the inculcation of democratic values, the provision of social mobility, the development of advanced research and technology, the provision of advanced public health, and support for sustainable development. There is a clear give-and-take relationship between higher education and society, and the role of HEIs is to develop citizens and future leaders, and to drive the economic engine. The mutual need demonstrates that higher education is perceived as a common good to be supported by society, in effect, creating a contract between higher education and society.

Overall, the contribution to both national wealth and wellbeing of HEIs is increasingly significant for many developing nations. Broadly speaking, the challenge for HEIs, especially public HEIs, is to focus on societal economic benefits, such as increased productivity and greater civic engagement. It must be borne in mind that higher education's dual purpose to provide public good and individual gain should not disappear in the future. In fact, the potential impact and implications of this blended discourse are far-reaching. Public good and occupational competency are both grounded in skills and knowledge that comprise traditional general or liberal education: analytical and problem-solving skills, the ability to think and learn, and broad multidisciplinary exposure that enables and facilitates critical thinking about contemporary problems. **The significant change required is to embed these principles across all disciplines and replace the traditional notion of either occupational or general education with a pedagogy of both, occurring simultaneously and indistinguishably.**

Some universities are embarking on innovations to support social engagement among students and initiating university-wide efforts to educate students for social impact. In the context of translating content and pedagogy to actions in the community, several approaches can be used, including Social Entrepreneurship and Service Learning.

Showcase 1- Service-Learning

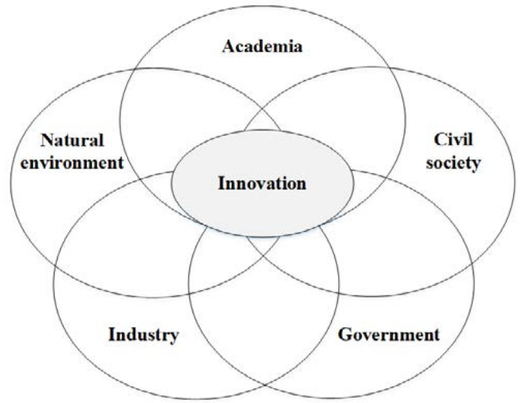
Service-learning in higher education is often defined as an academic course based on credit that involves participating in service and reflecting on that service to gain a better understanding of the curriculum and a deeper appreciation of the field. The concept, which is learning by doing (experiential learning), emphasising practicality and effectiveness in students' cognitive and affective development and becoming a better democratic society, is rigorously and strategically promoted in the Malaysian HEIs. In 2019, an initiative called the Service Learning Malaysia-University for Society, the Ministry of Higher Education set up SULAM as one of the high impact educational practices (HIEPs) within the academic curriculum. The initiative, which highlights the function of universities in society by preparing students to become public intellectuals responsible for resolving society's issues, is accompanied by a SULAM playbook comprising a framework and guidelines for implementation.

Service learning as a core course or supplementary course in learning institutions, provides an avenue for students to participate in the development of their communities. Knowledge from the course content is integrated into the community's development. Thus, full-scale SULAM projects include formal linkages with coursework, and part of the student grade is tied to the service-learning activities. Various methods of implementation of service learning have been practised by HEIs in Malaysia, such as learning through involvement in volunteer activities, problem-based learning, project-based learning, community case study, discipline-based project and Capstone Project (see Cheuk et al., 2020). These various methods have been conducted either as a stand-alone, integrated, infused, or embedded course. Each service-learning process takes students through the stages of Research, Preparation, Action, Reflection, Demonstration and Evaluation.

A broad-based innovation strategy and the enhancement of social enterprise

HEIs need to take a more active role in transformative change by working with their communities and creating real social impact through innovations. Thus, there is a need to find ways to foster innovation that generates social and public value (OECD, 2011). The social dimension of innovation is growing, due to unprecedented global challenges, including the COVID-19 pandemic. **There is a need for a new narrative drawing on a broad-based innovation strategy encompassing both technological and non-technological innovation at all levels of society, and with a stronger focus on the citizen and on responsible and sustainable business – a quintuple helix and place-based approach to science, research and innovation.**

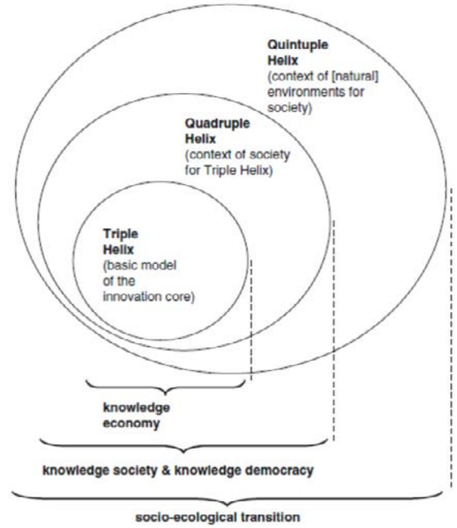
Figure 1: Quintuple Helix Open Innovation Model



Source: Al-Ali et al. (2020)

In the future, Social Innovations (SI) need to occupy a more central role in the academic curriculum, research and policy of higher education. This is because social innovation is a tool for a regional innovation system in which the importance of knowledge is not determined exclusively by competitiveness and productivity but by taking into account the creation of social well-being, the impact on the quality of life and co-creation of knowledge as part of public–private partnerships (Morawska-Jancelewicz, 2021). The recently discussed concept of Society 5.0 and Industry 5.0 (Carayannis et al., 2020) highlights the need to rethink existing working methods and approaches towards innovation and focus them on developing human-oriented solutions and SI. The quadruple/quintuple helix model expands the triple by adding the fourth/fifth dimension: civil society and the environment (Carayannis and Grigoroudis, 2016). This concept allows the integration of a bottom-up and top-down approach (complementing the previous top-down policies and practices) which is more suitable in the ASEAN context or developing nations.

Figure 2: Knowledge production and innovation. Knowledge production and innovation in the context of the knowledge economy, knowledge society (knowledge democracy), and the natural enviroments of society. Modified from Carayannis and Campbell (2012, p.18), Etzkowitz and Leydesdorff (2000, p.112) and Danilda et al. (2009).



Source: Carayannis, E. et al., (2012), pp. 4

SI is a creative process of value for society, by which one seeks to respond to a social need identified by the stakeholders, often supported by scientific or experimental data, which generates new institutional and social frameworks, profound changes in the behaviour and attitudes of society, builds alliances and restores power to the communities. In SI, the 'innovative' dimension is on the association of the concept with 'new' knowledge generation, provision of 'new' solutions to address 'new' and less new but pressing societal problems. Thus, SI provides 'better' answers, financially 'more' sound (read 'less costly') approach, 'more' efficient management and 'more' sustainable solutions to society (van't Land, 2015). Different fields of knowledge and epistemology are essential to generate innovative ideas in various shapes, forms and trajectories. To maximise the impact of research, HEIs must develop institutional capacity to support knowledge transfer to individuals and organisations outside academia.

Showcase 2- Social Innovation (SI)

The role of the Malaysian higher education system in the SI process is evident in a small number of successful projects. One of these is the Langkawi Geopark project conducted by researchers from Universiti Kebangsaan Malaysia (UKM) with government agencies, industries and rural communities. This project is an example of how one university's research and service, based on solutions to economic, social and environmental issues, can contribute to knowledge-based rural development via SI. The SI activities carried out by the multi-disciplinary group were explicitly focused on the research niche area of sustainable development under the cluster of heritage conservation. This cluster comprises four research groups: geological and biological heritage, governance for conservation, public education and community empowerment, with approximately 15 members.

The group integrated social innovation activities in their research work through the UNESCO Geopark projects in Malaysia. The Langkawi Geopark Project aims to provide scientific knowledge for a geopark development plan and to implement innovation agendas of economic and social value. The project was developed in collaboration with various stakeholders such as the local development authority (LADA), the Ministry of Natural Resources and Environment; the local industries such as Hotels and Tour Guide Associations; the communities such as the local fishermen's association and cooperative, as well as local schools. The researchers' involvement was not only in transferring findings from geological, biological and cultural heritage as well as education and economic studies, but also in expanding their services by providing expert advice and involvement in activities related to new sustainable tourism products; a new co-management approach; community empowerment and public education on conservation, and environmental sustainability programmes.

Only initial research projects under the groups of heritage conservation and Geopark were sponsored by UKM, while the rest of the projects have been sponsored by external grants from government and private entities. It is clear that the Geopark development projects had contributed to the local community: the new tourism products developed increased the number of tourists, while local community revenue tripled in the five years after the geopark creation.[1] The research group continues to contribute as intermediaries to developing national and global geoparks in Malaysia. They also work with NGOs social organisations promoting environmental sustainability and social justice and equality, especially among the most at-risk natural heritage and groups of individuals/communities.

Conclusion

Towards 2030, the advancement of sustainability through societal collaboration and various functions such as education, research and outreach must constitute a core mission for HEIs. These would affect the principal mission, focus areas, emphasised disciplines, view of education for Sustainable Development, core external partners, projects and outputs with external stakeholders, geographical focus, and primary functions involved. Indeed, the work of the HEIs is inseparable from the creation of an educated workforce and the provision of adequate professional services. There should be a balance between the external demand for performance and progress and internal priorities, as well as between the view of undergraduates as consumers and their view as students. In terms of management, there should be a balance between accountability, autonomy and integrity. The required balanced approach between knowledge as power and knowledge as enlightenment, and between government and business prescription and the public good, does not require the HEIs to reinvent institutions, but rather, it is a case for refocusing and reforming by playing a more constructive role in the future of humanity. This will require internal courage and external support from both academic managers and leaders as well as higher education policymakers.

1. See https://www.youtube.com/watch?v=Szs11eyxJIo.

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Enhancing data openness within and beyond academia through quality data management

Mercè Crosas

Abstract

Never in history have data been so ubiquitously available to help us infer knowledge, and yet so readily amenable to misinterpretation or confusion. High quality, well-described, traceable data are thus an essential foundation. With universities, research centres, industry and government entities generating copious amounts of data, data management must be a core activity and part of their education and training. This article discusses what it means to apply good-quality data management and describes the benefits. The emphasis is on sharing data with others in such a way that the data can be reused and interpreted correctly and thereby help us validate scientific findings and further build on them. The discussion starts with a review of the data lifecycle, the increased use of advanced workflows that help us optimise and replicate the data lifecycle, the implementation of fair (findable, accessible, interoperable, reusable) principles to facilitate data management and data sharing by machines, and finally an exploration of data sharing and open data beyond academia.

The data lifecycle embedded in the research cycle

Since the beginnings of modern science, a large part of research consists of an iterative cycle running from model to data and from data to model, i.e., a cycle that includes collecting or generating data to validate a model of the universe, the world, or society, and then learning from the data to improve the model. Good-quality, well-managed data makes the cycle more efficient and the model more reliable. Today's data-centric research, often with large, diverse, or complex data, and the collaborative undertakings that most studies demand, make it even more important to manage data properly as they are used throughout this data-model cycle, especially when the cycle becomes less clearly defined. Furthermore, the need to validate scientific findings to support responsible and accountable science requires transparency of the methods, the steps, the data and the software used in the research. Data should be managed by planning from the initial stage through sharing during or at the end of a research cycle to efficiently and adequately achieve this transparency. Thus, along with the research cycle, there is a data lifecycle that often includes the following phases: Definition of a data management plan, data collection, data cleaning or processing, data analysis, data sharing and preservation, and when possible, data reuse , together with additional data, to start the cycle again (see, for example, https://rdmkit.elixir-europe.org/).

Creating a data management plan is a good practice when beginning research, even if it is not explicitly required. It does not need to be a long formal process. It can be as simple as thinking about what type of data will be required, what formats, data structure and data model, metadata standards and controlled vocabularies (taxonomies and ontologies) you might use to define the variables, where the data will be stored (often in a collaborative way to conduct the analysis), whether there are concerns about data privacy or sensitivity, and finally how the datasets that support your findings or conclusions will be publicly shared. A formal Data Management Plan (DMP) should ideally be revised every six months.

In the next phase, when the data are generated or collected, you should already consider whether the variables (the columns in a tabular dataset) can be defined in a standardised way, with taxonomies or ontologies commonly used in the subject's domain, or whether there is a suitable standard data model that can be applied to more complex data. Good quality data also means creating a representative and non-biased dataset, with the variables needed for the objective and completeness of data values, although this is out of the scope of this article.

The phases of data cleaning, processing, and analysis vary highly, dependent upon the type of data and research being conducted, Therefore, it is difficult

to generalise or define a best practice. But from the perspective of data management, there are important aspects to consider: document the steps sufficiently so that it is possible to replicate your work; when code is used, try to use a version-control repository (e.g., a Git-based repository) and an open-source license to enable collaboration and reuse by others; and when suitable, use workflows or computational notebooks that can provide a repeatable execution of the analysis (more on this in the next section).

In the final phase, the dataset used to produce the result of the analysis should be shared openly and securely, i.e., published in a repository responsible for the dataset's accessibility and long-term preservation. The repositories available might vary depending on the research domain or your organization. For example, an increasing number of universities have their own institutional data repositories (with platforms such as Dataverse - dataverse.org - or Figshare). In some cases, the dataset is published in a repository along with the article published in a scientific journal (e.g., using Data-Dryad, Zenodo, or the Harvard Dataverse repository). And in other cases, repositories specialised in a particular type of data or scientific domain are the preferred option for publishing the dataset (e.g., Databrary for developmental psychology, QDR for qualitative social science data, or one of the many biomedical repositories that support specific, well-defined data types, among repositories in many other fields. More at: https://www.nature.com/sdata/policies/repositories).

There are many questions regarding options for sharing sensitive or restricted data. In some cases, sharing the metadata that describes the dataset in detail, with the necessary restrictions to access the original sensitive dataset, can be a step forward towards transparency of the data used in a research study (e.g., NIH dbGAP and EGA). Recently, advances have been made to guarantee the privacy of a published dataset by using differential privacy or synthetic data, reducing the risk of reidentification associated with merely anonymising the dataset. In the case of differential privacy, for example, a differentially private release of the dataset's descriptive statistics can be made using OpenDP (openDP.org), an open-source set of tools for differential privacy.

Advanced workflows for optimisation and replication

In the last decade, there has been a proliferation of workflows and automated pipelines in many research fields to facilitate repeatable research cycles (e.g., WorkflowHub). In addition to large, automated workflows that have been used already for quite some time in specialised fields such as particle physics or climate science, the use of computational notebooks has become more widespread in the last decade (e.g., python Jupyter Notebooks). These notebooks keep track of the code and data used in a research analysis workflow, from cleaning, reorganising, or processing them for analysis and exploration, to running statistical models or machine-learning algorithms.

The benefits of defining and creating a workflow are multiple. First, it requires explicit enumeration and description of the steps to conduct the complete data transformations, processing, and analysis and enables an in-depth description of each step at the same place as the code. Second, it creates a traceable document with provenance from the original dataset to the one used for the results. It allows the steps to be repeated quickly with any data changes or correcting errors made in any step. Thus, it optimises and makes future research more efficient and correct. And finally, to be mindful of verification and transparency, the workflow should be open, to enable others to reuse it to reproduce the results or build on them. The workflow itself can be published in a repository along with the dataset.

Advanced workflows might include machine-learning algorithms and can be used to validate a model based on the original dataset and to discover and automatically define what data need to be collected or generated to improve a model. Workflows can also go beyond the data-model cycle. A workflow, for example, can include the steps for preparing the data to be shared with others, and once the data have been used for research work and conclusions have been made, the workflow can include the API to automatically publish a snapshot of the dataset used for that research work to a data repository. Thus, workflows can facilitate connecting all the steps of the data lifecycle, making it easier to follow a data management and sharing plan, and improving the quality and verification of the research outputs.

Workflows are often designed and used by a collaborative team. Therefore, they benefit from being built and shared in a collaborative environment. At the same time, they are being developed (i.e., shared in a version control repository since they are created and used by a team). The workflow code should also be published openly to maximise transparency of the entire research process and be published similarly to the dataset, following best practices for open-source and code sharing.

Researchers and data professionals should learn about workflows during education and subsequent training. Research communities and stakeholders should invest in building advanced workflows for their communities, not only to make the research more efficient and accelerate discovery but, more importantly, to improve quality, documentation, and traceability with increased replicability and fewer mistakes. A clean, efficient way to document what has been done in research work is tracking the provenance, from the original data to all the subsequent transformations, and capturing it in a workflow.

The implementation of FAIR Principles towards machine-actionable data

Managing and sharing data should ensure that machines or algorithms can reuse them easily (often referred to as machine-actionable) and are AI-ready. This is the original purpose behind the FAIR (Findable, Accessible, Interoperable, Reusable) data principles. A good implementation of FAIR principles can facilitate the automatic application of advanced workflows to a dataset, the automatic comparison and harmonisation of datasets from diverse authors and disciplines, and the automatic use of generalisable tools and services for exploring, analysing, and visualising data. With the recent increase of development and use of research software in most scientific fields, there have also been efforts to apply FAIR principles to research software and make software a publishable research product, in addition to data.

The first principle (and its subprinciples), findable, demands that the dataset is accompanied with extensive, descriptive, machine-actionable metadata to assist with an automatic discovery based on relevant information that can be indexed, and it should have a global, persistent, and unique identifier to be defined unequivocally. The second principle, accessible, demands that the protocols to retrieve the dataset are explicit, standard, and open, and when the data need to be protected, there should be a secure mechanism to obtain authorisation if permissions are granted. The third principle, interoperable, is often the most difficult to achieve. Its goals are first making it possible for the dataset to be processed automatically by a digital service or tool (e.g., a data visualisation tool, an algorithm or analysis tool), and second, enabling the merge or harmonisation of two or more datasets into a richer combined dataset. This means that the dataset variables or attributes must be described with standardised metadata and their values with well-defined controlled vocabularies (taxonomies or ontologies). Finally, the fourth principle, reusable, demands that the reusable dataset policy or license is explicitly described in the metadata, including the conditions and who to credit when reused.

FAIR principles are not a standard but rather a set of recommendations that can be implemented in multiple ways and gradually, as part of a process to improve the quality of shared and published data. A minimal approach to FAIR principles could require: 1) defining the dataset with a DOI (Digital Object Identifier), 2) providing a descriptive metadata file using schema.org with a JSON-LD or Dublin Core schema, with some required metadata fields such as title, abstract, data authors or provider, and license, and 3) using a metadata schema such as DDI (Data Documentation Initiative), which enables a description of each variable and addition of summary statistics and use of controlled vocabularies for the variables that are amenable. Controlled vocabularies are a structured and standardised way to define the values of a variable or a metadata field, and their use can feed the Semantic Web (Web 3.0), making the internet more machine-readable. Controlled vocabularies can be a simple pre-defined list, a taxonomy with a hierarchy of values (ranging from less to more granular). They can be more complex thesauri, including synonyms or related terms, including multiple languages, or even a complete ontology with a high level of specification and detail (more on the topic in fairsharing.org). The consistent use of controlled vocabularies standardised or common within a domain or a field is not always easy, but it is arguably an essential aspect of making data FAIR.

It is not reasonable to expect that researchers, data scientists, or others working on, and processing data would be able to provide everything needed to make a dataset FAIR (that is, conduct the FAIRification of data, as it is commonly called among FAIR aficionados). Fortunately, an increasing number of platforms and data repositories, such as those referenced in the previous section, provide functionalities aligned with FAIR principles. That is, these repositories automatically assign a DOI, a Handle, or another global persistent identifier to the dataset when it is deposited in the repository, provide support for one or more descriptive metadata standards such as Dublin Core, schema.org, or DDI that help index and find the dataset, and enable the use of controlled vocabularies. In many cases, they also provide support for sharing and usage license in the metadata, an API (Application Programming Interface) to access the metadata and data files directly, and authentication and authorisation protocols to access the data with the appropriate permissions when the data need to be protected. When researchers or data authors use these FAIR-aligned repositories, much of the work is done for them. However, the use of controlled vocabularies, whether in the form of taxonomies or ontologies, would need to be considered and added when collecting or processing the data, so the data are defined appropriately in the dataset from the beginning of its creation. In summary, researchers and data professionals do not need to become experts in FAIR data, but they should learn more about building well-defined datasets, considering the use of standards for describing the variables, using controlled vocabularies that are commonly used in their research domain or community, and when possible, even use standards that go beyond their field. For example, variables such as time and location can be prominent in many types of datasets created in diverse research fields. In the case of location, including standardised geolocation data can help reuse the dataset automatically by data exploration or visualisation tools and can help combine datasets from multiple sources. Of course, the location might be low-hanging fruit for FAIRification, but the same mindset applies to other variables that are not as commonly standardised in health, social sciences, biomedicine, in natural sciences. These types of best practices that help towards making the data more FAIR should be part of the teaching and training for researchers and data professionals.

Data Sharing and Open Data beyond academia

Open Science and Open Data are encouraged by initiatives and policies of the European Commission, U.S. national funding agencies other funders and governments, many scientific journals, and by some universities, research organisations, and scientific communities. The notion of Open Science is based on the principles that science is a collaborative enterprise and should, therefore, be transparent and verifiable, that others should be able to build on prior findings, and that primary and secondary research data and code should be considered a public asset and shared for the common good. Open Data is part of Open Science, together with Open Access, but it also goes beyond Open Science, since it is relevant for government data and other data generated and used outside scientific and academic communities. Data Sharing and Data Publishing are closely related to Open Data, although they can refer more broadly to data that might not be entirely open due to privacy concerns or other restrictions. All these movements are intertwined and share similar goals – to maximise transparency, accountability, and reuse – but they have often been pushed forward by communities that do not necessarily communicate. There would be a great benefit in connecting these communities and sharing best practices and insights by opening academic, government, and industry data, and make them usable for research, policy-making, and a transparent and accountable data economy, being mindful of privacy.

Open Science Open Data movements have grown thanks to many actors. Partly thanks to those that have tirelessly driven it, convinced that they were a just and efficient way to conduct science. Partly thanks to initiatives such as the European Open Science Cloud (EOSC) that have encouraged the growth of tools and services that support open science and foster the discussion on Open Science, even though its development has been slow. Partly, thanks to incentives and policies provided by many scientific journals, which strongly recommend or even require sharing the data that supports scientific results upon publication of an article. Partly thanks to funders increasingly demanding a data management and sharing plan where data will be publicly available once the funded study ends. And partly thanks to the increased number of readily available data repositories, workflow tools, and other technologies that facilitate data management and sharing. Open data and data sharing is not yet a universal practice across all research fields and beyond academia, but it has increased considerably in the last two decades. Previously, it was almost non-existent except for limited areas of biology and physics.

Where do we go from here? Open Science, and particularly sharing research data, will continue to grow if we continue providing incentives, policies, and technology to support it. It is time for universities and research organisations to do more by incentivising open science and data sharing behaviour and providing credit and recognition to those who help move it forward. But data sharing and Open Data can go even further. It is time for bringing academia, government, and industry communities together to help share data more openly, provide tools and safeguards that allow appropriate access and use of sensitive or restricted data, making them easily reusable not only for research but also to improve policies and legislation, build responsible tools, and put them in the hands of citizens. This could be achieved by building a collaborative Open Data Commons that federates data from all these multiple sources – research data from academia, government data, industry data, data sourced by citizens –, facilitates the creation of new, merged data products and views, and shares them as open as possible, as restricted as needed.

Conclusions

Quality data management is the foundation for good data sharing and broader data opening. Data management starts with planning what data are needed and how they will be stored (considering privacy and security when required), how the dataset will be structured and its variables will be described, and eventually how the dataset will be shared. The increasing availability and use of workflow tools, including advanced algorithms and automation of research and data lifecycles, can make data management more robust, high-quality, and efficient. Furthermore, as it is guided by the FAIR principles, being aware of metadata standards and controlled vocabularies commonly used by the research field, can help define the variables more accurately and uniquely, making them consistent with other datasets and enabling data comparison and merging across sources. Once the research is complete, a well-defined dataset, together with the workflow that contains the provenance of its transformations during the research process, should be shared in a FAIR-aligned repository that enables machine-actionable data.

Besides applying good quality data management to research data from academia, much of the same considerations can be applied to industry and government data. The three communities – academia, government, and industry – can join forces to share data in this high-quality and consistent way, which facilitates combining data from various sectors and sources, and build a powerful resource for richer research and policy and decision-making, with social transparency and accountability.

Part 3

Regional Approaches

The third and final part of the Higher Education in the World Report 8–Special Issue looks at the debates and realities of HEIs from a regional perspective, exploring the contexts and perspectives of each of the six regions.

The third part seeks to provide a regional approach on the understanding that, even though the contexts and forces may be global, each region has certain patterns that need to be tackled from a regional perspective. Acknowledging that there are global similarities but also different purposes, organisational cultures, goals and strategies, the following questions guide the six regional chapters:

- What do the regions feel higher education institutions should be like in the future?
- What are the similarities? What are the differences?

To this end, several experts from each region have made contributions from their own particular field of research, country or regional expertise. The result is six chapters that reflect the following regions: Middle East and North Africa, North America, Asia and the Pacific, Europe, Africa, and Latin America and the Caribbean.

The perspectives of the contributing authors are unique and uniquely their own, based on their own particular blend of ontological, professional and geographic principles. That said, neither their selection of approaches nor their choice of terminology implies any particular preference or inclination of GUNi in one direction or another.

In this abridged print version of the report, the following pages introduce the experts' contributions through their respective abstracts. The complete version of their contributions can be found at the report's website: www.guni-call4action.org.

What makes the report unique is that it will be a living document. Throughout the period 2022-2025, new contributions will be added in the form of papers, videos, interviews and podcasts, giving voice and bearing witness to new ideas, contributions and actions relating to higher education institutions and systems as they move in the direction of Agenda 2030 along the lines marked out by the GUNi vision.

In this respect, it is important to note that the report aims to be a stepping stone in a wider, more ambitious project entitled "GUNi International Call for Action (2022-2025): Rethinking HEIs for Sustainable and Inclusive Societies". This project will be one of GUNi's key strategic lines of action for 2022-2025 and will seek to encourage and help HEIs around the world to deploy the actions and changes that are needed to adapt and become more relevant, inclusive, effective, innovative and socially responsible. The overarching aim is for the International Call for Action and the special issue website to become a key open space for contributions to the transformation of HEIs around the world.

3.1 Middle East and North Africa

Higher Education in the Arab World: Challenges and Post Corona Pandemic Prospects

Amr Ezzat Salama

Abstract

It is high time to reconsider the future of higher education in the Arab world and worldwide. The global pandemic has revealed a reality that needed to be challenged while working on developing methods to overcome its challenges. Most of these challenges that go back decades are due to the nature of the emergence and development of Arab higher education institutions, and the shape of the Arab national educational systems. We may not be exaggerating to say that higher education (specifically university schooling) is the key to the success of any country economically, socially, scientifically, and even politically. Based on this point of view, the countries that have planned for improving their societies economically, socially, scientifically, and even politically, tended to pay special attention to the quality of education in general with focus on higher education in particular. Accordingly, governments would allocate suitable proportions among states' budgets to higher education and scientific research. For these reasons, this article approaches the reality of Arab Higher Education through its indicators, exposing its challenges and concluding with a series of recommendations.

Since the beginning of 2020, the COVID-19 pandemic has opened the door wide to a reconsideration of the future of higher education in the Arab world and across the globe. It has revealed a reality that needs to be faced while working on developing methods to overcome the challenges involved. These challenges go back decades. They are not only related to the conditions imposed by this global epidemic, but many are also due to the nature of the emergence and development of Arab higher education institutions (HEIs) and the shape of the Arab national educational system, which began its current journey in the form of the institutions of Cairo University (King Fouad) in 1909. It continued to develop through to the end of the mid-twentieth century, by which time there were ten universities. At the start of the 1960s, these institutions increased in number and grew steadily until the early 1990s, when private universities began to spread significantly in the Arab world.

It is no secret to anyone with an interest that higher education – especially at university level - is viewed as one of the main and most important elements for supporting human development in societies. University education provides individuals with the basic skills required for the labour market, as well as providing the necessary training for individuals in all different specialties, whether they are teachers, doctors, nurses, engineers, businessmen, sociologists, or the owners of any other business. All of these trained individuals can consequently develop and improve their analytical capabilities and skills to drive the local economy, support civil society and enhance children's education, as well as increasing their ability to make critical decisions that will ultimately affect the entire community.

It is no exaggeration to say that higher education (specifically university schooling) is the key to any country's economic, social, scientific and even political success. Based on this point of view, countries that have planned for the economic, social, scientific and even political improvement of their societies have tended to pay special attention to the quality of education in general, with a focus on higher education in particular. Accordingly, governments will allocate suitable amounts of their state budgets to higher education and scientific research. Universities are also given a major role in shaping economic, social and scientific policies by offering multiple scenarios and solutions to deal with emergent political issues, whether national or foreign. Higher education is not really where it should be, and competitiveness will not be achieved unless rational, strong, honest, patriotic and honest university leaders are qualified enough to show the way.

Arab universities have been absent from the global competitive arena when evaluated through international university ranking criteria, specifically with regard to:

the quality of their programmes, operations, research products and their subsequent outputs, whether in terms of graduate competencies, research production or the quality and quantity of services catering to their host communities. The latest QS classification for the year 2022 reveals that only eleven Arab universities are among the top 500 universities in the world, as shown in table 1 below:

Table 1. Ranking of Arab universities in the Arab world and internationally according to the QS classification for the year 2022 (top 500 universities)[1]

University	Country	Arab Ranking	World Ranking
King Abdulaziz University	Saudi Arabia	1	109
Qatar University	Qatar	2	224
King Fahd University	Saudi Arabia	3	163
American University of Beirut	Lebanon	4	242
United Arab Emirates University	United Arab Emirates	5	288
King Saud University	Saudi Arabia	6	277
Sultan Qaboos University	Oman	7	368
American University of Sharjah	United Arab Emirates	8	383
Khalifa University	United Arab Emirates	9	183
Umm Al-Qura University	Saudi Arabia	10	447

The Reality of Arab Higher Education and its Indicators:

The Human Development Report for 2019 indicated that the population of the 22 Arab countries had reached about 432 million, representing approximately 5.5% of the world's population of around 7.5 billion (United Nations Development Programme, 2019). In the Arab world, there are about 1,000 universities, of which 402 are public and private universities under the umbrella of the Union of Arab Universities. There are dozens of other foreign universities, or branches of those foreign universities, especially in some Arab Gulf countries. More than 13 million male and female students are enrolled at all Arab universities, with about 309,000 faculty members, 75% of whom hold a doctorate degree and 25% a master's degree.

The ratio of students to faculty members in Arab universities is about 1:36. In Jordanian universities the proportion is 1:28, while it is 1:15 in the United Kingdom and 1:12 in the United States. The average ratio globally is 1:25. According to experts, the ideal ratio seems to be 1:15-20.

With regard to enrolment rates in Arab universities, these are still low in general. The enrolment rate in the Arab world is 30 individuals for every 1,000 citizens. As examples, this ratio is 20 in Egypt, 75 in Kuwait, 50 in Saudi Arabia, 44 in Lebanon, and 48 for every 1,000 citizens in Jordan. In developed countries, this ratio is 40 people for every 1,000 citizens.

The cost of a student in higher education in the Arab world is also still modest compared to developed countries. The average cost per student in Arab countries is about $2,500 per year. For example, the cost per student in Jordan is around $5,166 per year, in Egypt it is $1,500 and in Sudan it is about $600 per year. In contrast, this average cost is higher in the United States, standing at 40,000 Dollars: 34,000 Dollars in public universities and 44,000 Dollars in private universities. It is around 39,000 Dollars in the UK, and 35,000 Dollars in Japan.

The Challenges Facing Arab Higher Education:

Despite the tremendous successes achieved by Arab higher education on a quantitative level, the accomplishments on a qualitative level are still below expectations and ambitions. The reality shows the poor quality of this education stream, with low levels of output compared to developed countries. Looking at the state of the Arab educational system at its two levels - general and higher - you can see that it is today facing a number of huge challenges , as well as a succession of severe crises which have taken place in recent times. At higher education level in particular, during this evolving digital era, HEIs in Arab countries, like those in many other developing countries around the world, are currently facing several challenges. These major challenges can be summarised as follows:

a) Increased demand for higher education: there is a great desire, an intense massing and an overwhelming need to enrol in university education in most Arab countries, something which could be called the phenomenon of "student enrolment overcrowding". This phenomenon creates other problems and obstacles such as: a rise in dependency rates and a drop in the level of academic graduates, resulting in the creation of an inverted pyramid for the productive segment of citizens in society. The situation is intensified by the knowledge that about 65% of Arab university students are enrolled in the humanities, while about 35% enrol in scientific, technical and technological disciplines. This shows the weak demand for technical education in particular.

b) The decline of basic education outputs has led to a rise in success rates among secondary school graduates. This is due to many reasons, including political and economic factors. As a result, large numbers of school graduates have joined higher education without actually being qualified for it.

c) Lack of human and financial capabilities: most universities suffer from a lack of human and financial capabilities. Most Arab countries are unable to meet their needs in this regard except in limited numbers.

d) Weaknesses in higher education inputs (students, teachers, curricula, administration, educational facilities, etc.).

e) Weaknesses in staff competencies: about 35% of the faculty members in Arab universities are graduates of Western countries, while the others are graduates of the same Arab universities or other institutes. Most of them lack research and technological competencies, are unable to use the English language technically and professionally, and there has been a spread of apathy among them, perhaps due to a lack of competitiveness, which has led some specialists to describe them as "upper secondary school teachers" and to call Arab universities "post-secondary traditional schools".

f) Student apathy: the main indicators of apathy are tardiness and absence, academic laxity, a lack of seriousness, low interest, irregular study, disorderly behaviour and increased violence and student quarrels.

g) Limited job opportunities: the increasing unemployment rates among young graduates have caused high levels of frustration, raised the level of educational weakness among them, and prompted some of them to obtain higher university degrees (master's and PhD) to use their spare time in the hope of being exposed to better job opportunities.

h) Dominance of academic education due to the increase in students' interest in academic education and their reluctance to pursue technical education. The percentage of those enrolled in technical education programmes is no more than 10% of the total number of students enrolled in the higher education sector. This is what is known as the inverted pyramid.

i) Lack of accountability: the concepts of accountability, responsibility, follow-up and transparency are not provided for in the laws and regulations in force at most Arab universities.

j) Weakness in keeping pace with rapid technological developments: the world today is immersed in the information age, with its three revolutions (digital science, information technology and genetic biology) all massively accelerating.

k) Poor scientific research due to a lack of financial capabilities (only 0.05% of national income is allocated to research). This has resulted in a widespread mood of dissatisfaction because of the absence of incentives and a possible lack of research capabilities.

l) Highly centralised administration with governmental policies that prevent universities from being independent. Universities are thus unable to implement their own plans and take steps to enhance their distinguishing qualities and individuality.

m) Lack of equity and justice in academic opportunities: there is unfair distribution of academic opportunities due to students in diverse circumstances being subject to unified standards. The swelling of student numbers beyond the institutions' ability to absorb them and the exclusion of a segment of students whose grades fall below the required scores has also led to unjust academic opportunities.

1. See: https://www.topuniversities.com/university-rankings/world-university-rankings/2022

n) Arab Brain Drain (migration of Arab scientists): this is perhaps a foreseeable result of the above challenges, as there has been a major exodus of those responsible for implementing Arab higher education, namely professors and scholars. Reports suggest that tens of thousands of them leave for the United States and Europe every year. In addition, about 50% of Arab graduate students abroad have no intention of returning to their countries.

o) Low quality of higher education: the above challenges have led to the absence of any guarantee of the high quality of Arab higher education and the deterioration of its outputs. Consequently the outputs of the educational system in Arab universities are incompatible with the needs and requirements of the labour market. There is a mismatch with development priorities in their broadest sense, as indicated by several comparative studies. This is due to the fact that Arab higher education is typically a traditional form of education, based on lecturing and memorising information, in a way that is more like an upward continuation of school education in terms of style, method and curriculum.

The qualitative challenge faced by Arab higher education is more complex than the challenges of academic opportunities. This complexity is multi-dimensional and related to funding, scientific research, institutional governance, educational technology, educational culture, international university rankings and social responsibility. The elements related to the qualitative challenge faced by Arab higher education can be summarised as follows:

- Educational technology: the weakness of the technical structure and the scarcity of its provision to faculty members and students inside universities and their own locations prevents flexible access to knowledge, especially under emergency circumstances.
- There is a lack of accountability in the educational process at the level of coaching, study plans and educational practices.
- The lack of strategic and continuous evaluation of institutions' performance has hindered the achievement of measurable indicators.
- Study plans have not kept pace with knowledge changes in academic disciplines, especially in humanities and educational programmes that lack genuine updates.

Recommendations

Given the painful reality of Arab HEIs, the fact that they are not treated as a priority national issue in most Arab countries, and in spite of the positive intentions and serious determination to reform this sector, it is necessary to make the next decade the decade of Arab higher education reform and development, through a number of procedures and policies that will need to keep pace with change, including:

a) Restructuring the basic education system in the Arab world so that classification will be scaled according to academic stages built on the quality of students' skills, talents and abilities.

b) Granting universities sufficient financial and administrative independence, as is enjoyed by universities in the developed world. Setting out the requirements for academic freedom in these universities is an essential need. There is also a requirement to change the pattern of the relationship between governments and HEIs from a state–controlled system to a supervisory model, in order that they may be subject to accountability and good governance processes.

c) Increasing internal funding for HEIs and centres of scientific research and innovation.

d) Strengthening national crisis management centres and educational institutions to enable them to face current and future challenges such as epidemics, natural disasters, wars and any other unusual circumstances.

e) Enabling university leaders to build their capacity with the required skills and knowledge, especially in the fields of management, finance, psychology and information technology. Special training and development programmes need to be implemented.

f) Adopting digital and e-learning approaches by integrating them into the learning and teaching process.

g) Establishing virtual universities in the Arab world to provide real and serious educational opportunities for traditional and non-traditional segments of students who need flexibility in terms of time and admission criteria.

h) Developing the e-learning environment in terms of technology, preparation of human cadres, motivation and customised training for both professors and students.

There should be reinforcement of the online education and interaction culture.

i) Establishing special centres to enhance and develop the electronic content of study plans.

j) Creating new disciplines that are compatible with technological developments and market needs in order to provide future jobs for the coming years. These new occupations will be in great demand, including, but not limited to, artificial intelligence, cyber security, robotics, systems and data analysis, online tutors, medical engineers, geneticists and others.

k) Restructuring the entire higher education system in the Arab region to facilitate the movement of students and researchers between national, regional and international universities. It is necessary to support cooperation and joint scientific research, as well as adopting unified systems to measure and assess skills and educational accomplishments.

l) Higher education administrations in the Arab world need to adopt the higher education globalisation project and enact permanent governing legislation to guarantee the success of the project.

m) Reviewing all the study programmes catered for by educational institutions with a view to modernisation. These programmes should ensure that graduates acquire appropriate skills which are attuned with changing technology and the information revolution.

n) Linking scientific promotions of faculty members to which the results of scientific research and innovation are linked with scientific publishing and the adequacy of addressing needs of society.

o) Promoting joint programmes that ensure the hassle-free flow of knowledge to local educational institutions and research and innovation centres.

p) Generating multidisciplinary study programmes in HEIs.

q) Promoting continuous higher education and keeping it updated to improve the quality of professional and technical knowledge and skills and produce new skills related to economic and social growth and the rapid changes in labour market needs.

r) Supporting vocational and technical education through increasingly specialised programmes in order to acquire skills that are vital to the achievement of sustainable development.

s) Adopting educational policies that guarantee the link and harmony between theoretical, applied, professional and technical education paths in order to provide opportunities for the transition between these paths according to controlled arrangements.

t) Developing an Arab framework which is similar to the one in the European Union to address the qualifications issue, in accordance with the best practices and international standards in this field. The Arab qualifications system is the primary tool for raising the level and quality of education and training. The development of a comprehensive Arab system for qualifications would lead to the integration of all types of education and training as part of a unified and transparent framework in line with the requirements of the labour market. This will contribute to achieving a number of goals, including enhancing trust and credibility in Arab qualifications and achieving a healthy comparison and alignment between Arab and international qualifications. It will also enhance the competitiveness of Arab cadres and provide them with broader and greater opportunities in the global labour market. It will help to standardise and upgrade education and training standards and increase compatibility in educational and training systems by establishing unified, transparent and neutral standards for credentials, as well as promoting the recognition of all categories of certificates. These steps will help facilitate special procedures for the recognition and equivalence of university degrees and encourage the transfer of students between Arab and international public universities and HEIs to complete their studies and also to work in these countries.

u) Establishing an integrated digital platform for vocational education that will serve as an important and modern tool for disseminating science and knowledge and contribute to achieving the sustainable development goals related to quality education. There should be adoption of up-to-date standards for quality control and governance of digital education and an exploration of the best implementation mechanisms for their inclusion in the general platform.

Conclusion

Arab higher education indicators today suggest that there is more work to be done with regard to the future of higher education, in terms of keeping pace with global knowledge contexts and their changes, while

paying sufficient attention to expenditure and the modernisation of regulations and legislation, teaching plans and the development of current and future programmes.

Universities are invited to galvanise their partnership with the private sector and scientific research support funding in order to offer incentives to serious researchers and encourage students to join these research projects.

The most important factor today is to provide graduates with practical skills that help them to educate themselves and consider the extent of the challenges faced in their environment and society. They are urged to take part in providing solutions to the problems and to contribute to the development of their society. It is highly likely that the Arab student community, along with Arab student councils and youth organisations, will need further networking through youth work institutions and international unions. The policies governing Arab higher education need to develop and modernise the legislative system, with an innovative vision that will keep pace with global change in the future, especially in the fields of educational opportunities and justice with regard to the transfer of knowledge to all in equal conditions.

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Towards a More Effective Social and Public Role for Higher Education Institutions in the MENA Region

Laila El Baradei

Abstract

The role of higher education institutions (HEIs) has been redefined in the twenty-first century, with heightened expectations about how they can better serve society. More emphasis is given to the quality of the education provided, and more attention is directed to the competencies graduating students acquire, preparing them to serve their nations better. Many HEIs in the MENA region remain hampered by challenges, including limited academic freedom, low performance in international rankings, ineffective governance, and a gap between the educational content provided and the needs of the labour market. However, the current paper points how HEIs can better serve society and highlights some success stories. Amongst the suggested reforms for a more effective social and public role for HEIs in the MENA region are: Focusing on the production of relevant, impactful research that benefits society; figuring out creative and effective ways to communicate this research to different stakeholders; intensifying community-based learning and students' community development activities; building a stronger link between theory and practise in all disciplines; providing non-economically oriented education, and a better match between the curricula taught and market needs.

Higher Education institutions (HEIs) have an important public service role to play. Traditionally, universities have mainly focused on education and research: first educating young people and preparing them for the job market, and then producing research that occasionally got read but was more often than not shelved and rarely utilised beyond the confines of HEIs.

Moving into the twenty-first century, expectations are changing, and the role of HEIs is being redefined. It is no longer sufficient to count the number of graduating students, focusing on outputs. There is now more emphasis on outcomes, that is, the quality of education they have acquired, the competencies and skills they have developed during their time at the HEIs, and the extent to which these competencies prepare them for what lies ahead and make them ready, not only for the job market, but also to develop their nations in all possible ways. Similarly, it is not enough to produce theoretical research, although this is undoubtedly important, but additionally to come up with research that can be put to good use in benefiting society and contributing to its development.

This paper mainly focuses on the expected social and public role of HEIs in the MENA region, presents some of the challenges faced, highlights selected achievements and points to some possible recommendations for a more effective social and public role.

There is huge diversity in the conditions of HEIs in the MENA region. The region is sometimes used to refer to anything from 19 to 24 countries (Chen, 2021). There is also huge economic diversity between the countries in the region. 12 countries in MENA are part of the Organization of the Petroleum Exporting Countries (OPEC), with bountiful resources, while other countries are resource challenged (Wan et al., 2016). The number of enrolled students at HEIs per country also varies widely, with Egypt having the biggest number of enrolled students at HEIs, with more than 3.3 million in 2019/2020 (Central Agency for Public Mobilisation and Statistics [CAPMAS], 2020). Historical and political contexts have affected the governance of HEIs in the region in many different ways and over time there have been repeated attempts at reform. One of the latest trends in reforming HEIs in several parts of the MENA region is the move towards establishing branches of international universities in the region, as has happened in Qatar, in the United Arab Emirates (Wan et al., 2016), and recently in the new Administrative Capital in Egypt. Despite the attempts at reform, the majority of HEIs in the region still face severe challenges.

Challenges faced by HEIs in the MENA region:

HEIs in the MENA region face many challenges that hinder their capacity to fully contribute to the betterment of society. Some of these challenges include:

- *Limited academic freedom:* The most significant challenges facing HEIs in many of the countries in the MENA region relate to restricted academic freedom, difficulties regarding data collection and fieldwork, and the reduced transparency exercised by governments in public policymaking in general. Without academic freedom, we cannot develop critical thinking in students, a much needed and called for competency that would prepare them for their jobs later on, and enable them to lead the development of their nations.
- *The pandemic situation:* COVID-19 presented a huge challenge to HEIs in the MENA region and to all universities globally. However, many of the HEIs in the MENA region were relatively unprepared, technology-wise, to shift rapidly to online teaching during the peak times of the pandemic that necessitated intermittent periods of lockdown in many educational institutions. Two years of the COVID-19 pandemic has taught us all that we do not need to be in class and in face-to-face sessions in order to continue with the learning process. Many faculties managed to continue their operations amid the pandemic by relying on Zoom sessions, but some were more successful than others.
- *Increased competition:* HEIs in the region face increasing competition, not only from the private sector and non-profit universities opening up at an escalating rate on a local level, but also from the splurge of new international universities opening up branches in the region, Gulf countries being a case in point. Additionally, Western universities are becoming ever keener on receiving international students; the MENA region being one of the main target markets. Degrees offered either virtually, or in a blended format, are often more attractive to MENA students.
- *Low performance of MENA HEIs on international rankings:* In 2017, only three MENA countries were included on the Shanghai Ranking: Egypt, Iran and Saudi Arabia. The Leiden Ranking in the same year had only five MENA countries, with Lebanon and Tunisia added to the three mentioned above (Salmi, 2020).
- *Limited resources:* Some public universities, like in Egypt, face challenges, especially in some faculties, such as Law and Commerce, related to high student density in lecture rooms and a very high faculty/student ratio. Faculty are underpaid and often resort to moonlighting in order to make ends meet, seek parallel part-time employment in private universities, or travel for years on end to work in better paying Gulf universities; all issues that have a negative impact on the quality of their teaching and research.
- *Perceived gap between theory and practice:* In some HEIs, graduate students complain about outdated curricula and the insufficient links established between taught theory and what happens in practice. In many of the MENA HEIs, the emphasis is still placed on memorising rather than on teaching students how to solve practical life problems (Salmi, 2020).
- *Pressure to prepare students for employment:* The question of whether HEIs manage to adequately prepare their students for employment is constantly being raised and debated. Employers look for specific sets of competencies and skills and HEIs either unintentionally fall behind, or intentionally disagree about limiting their knowledge dissemination to fitting market needs.
- *Increased number of private universities that sometimes focus more on profit maximisation than on education quality:* Anecdotal evidence has pointed to cases of forged certificates for students who did not meet the degree requirements in several private universities in Egypt, Bahrain and Jordan, although this situation was later rectified through the establishment of stricter oversight by national regulatory and accreditation bodies in the different countries.
- *Ineffective governance of universities:* Too much interference by central government leaves little room for universities in the region, especially public universities, to be creative in fund raising or resource allocation, and acts as a disincentive against their focus on improving research or education quality (Salmi, 2020). In Egypt for example, public universities have their hands tied regarding their financial management. Salaries are fixed and government-subsidised tuition is capped (Radwan, 2016). Many schools in public universities have started revenue generating 'special programmes' that are distinguished from the mainstream by being referred to as language programmes, credit programmes or otherwise. However, these programmes have been seriously criticised for their negative impact on social equity, where students who can afford to pay are offered a better-quality educational service in the same institution.

How HEIs could have a more effective social and public role

There are many different ways in which HEIs might have a more effective social and public role and overcome many of the challenges faced. In presenting each of the suggested reforms, one or more good practices currently taking place in HEIs in the MENA are also highlighted in the boxes.

Producing relevant research in the various fields

This requires a number of things: firstly, more investment in higher education by governments and incentivising faculty to do more high impact and society relevant research. More financial flexibility needs to be given to universities to recruit qualified professionals who can produce the needed research, giving them an attractive compensation package and the time and resources to enable them to be more productive, as well as implementing a performance appraisal system for faculty that is research intensive. Additionally, academic freedom needs to be guaranteed as a key prerequisite for the production of research in all fields. Universities in the region also need to reconsider their mission and stop perceiving themselves primarily as teaching universities, rather than research universities (UNIMED, 2021).

Science to Benefit the Community: The School of Science and Engineering at the American University in Cairo (AUC) and the test kit for Virus C developed by Professor Hassan El Azzazy: As Egypt has the highest rate of virus C infections in the world, the invention of a detection kit was of great importance. This is what Professor El Azzazy, Professor of Chemistry at AUC, managed to do. He led the invention of a fully automated robotic machine for hepatitis C diagnosis and was the first to turn his invention into a spinoff company, D-Kimia, which was also recognised as the first university spinoff in Egypt in 2013. Azzazy won first place in the industry section of the Arab Innovation and Entrepreneurship competition, organised by the Arab Science and Technology Foundation, in recognition of his commitment to responsible business (AUC News, n.d.).

Effectively communicating the findings of the research produced to different stakeholders

Faculty often produce research that literally never sees the sun. HEIs can develop partnerships with industry to better understand and respond to their needs, so there is a higher chance of the research produced being relevant to the problems encountered by industries in the various sectors of the economy. More investments in conferences, seminars and webinars open to the public and creative communication means simplifying research results and disseminating them to the different stakeholders as needed. Technology and social media can be very useful here and universities have to be up to date with the ways in which they can be used for research dissemination and communication.

Support for Policymakers and Effective Communication of Research Findings: The Public Policy Hub project at the School of Global Affairs and Public Policy (GAPP): Established in 2017, the Public Policy Hub (PPH) is a pilot project that aims to build the capacity of young Egyptian scholars in developing evidence-based public policy research and effective public policy advocacy and communication. Through the adoption of a demand-based approach, it reaches out to different government organisations, asking them to suggest policy issues that they are working on and on which they would like the young scholars at the PPH to do policy research. Participants joining the PPH in any round of operations receive intensive training on public policy analysis and are divided into teams. Each team is assigned a policy issue to work on, is supervised by a faculty mentor, and within three to four months is expected to come up with a policy research paper, a policy brief and a creative graphic video in Arabic slang that summarises their findings and recommendations.

The motto of the PPH is: "Where Rigour Meets Creativity". They are able to combine the rigour of scientific research, guaranteed via the presence of faculty mentors, with the creativity of the young researchers. It is a win-win situation where the government receives sound policy advice on problems they are working on and the young university graduates are exposed to the reality of policymaking outside of their lecture halls.[1]

Nurturing student clubs, philanthropic and community development activities & offering community-based learning classes and programmes: There are a lot of students' activities in many HEIs in the MENA region, all of which take different shapes and forms, whether they are student associations, clubs or projects. Further nurturing and mentoring are required because these activities are sometimes even more important than the set curricula in building the life-long skills that prepare students for their later careers.

Alashanek Ya Baladi (AYB), literally translated as 'For You My Country', *is now a registered non-profit organisation that has franchises in twelve different universities in Egypt. AYB started out as a student club at AUC. The nongovernmental organisation offers micro-credit to the needy and organises capacity-building workshops in marginalised areas to help young people find employment (AYB webpage, n.d.). It is living proof that when students' clubs are nurtured and mentored, they not only benefit the community they are in while operating during their university years, but may also upscale their activities and expand their operations beyond the confines of the university to the benefit of society at large.*

1. Links to a sample of PPH publications and media advocacy videos can be found here: https://fount.aucegypt.edu/policyhub/ Public Policy HUB YouTube Channel

Building a stronger link between theory and practice in all disciplines

HEIs in the MENA need to move away from an emphasis on memorising knowledge to using knowledge to solve real life problems. This paradigm shift should be reflected in all aspects of the education process, from the design of curricula, to assessment methods, faculty training and evaluation.

Linking Theory to Practice: The Egyptology Programme at AUC: Through the work of the distinguished Professor Salima Ikram, Professor of Egyptology at AUC, the name of AUC is constantly mentioned in BBC news programmes and National Geographic documentaries featuring archaeological missions and discoveries throughout Egypt, where Professor Ikram plays a leading role. She teaches during the academic year and spends the rest of her time excavating in different parts of Egypt, often accompanied by her students (BBC, 2015). Making this important link between what the students study in class and their first-hand experience of excavations with a prominent 'archaeologist extraordinaire', as Professor Ikram is referred to in the media, is a great added value.

Providing "non-economically oriented and democratic education" (Amsler, 2017) where higher education is available to all members of society and not only those who can afford to pay. Offering scholarships and fellowships to make their educational services affordable to qualified students who cannot afford to pay, is one way in which HEIs can ensure diversity within their institutions and contribute to social equity and mobility. Governments need to understand that higher education expenditure is an investment in the future and that the educational service in HEIs should be available to anyone who is qualified regardless of their ability to pay. If free education for all is unaffordable and inefficient, perhaps a move towards funding scholarships and fellowships that are a mix between merit and needs-based should be considered.

There are many examples of generous externally funded scholarships at undergraduate level, and fellowships at graduate level, that are offered by private universities in the MENA region in order to attract qualified students who cannot afford to pay and also ensure diversity in the student body. Examples include the LEAD program that was funded by the USAID at AUC for top-performing students from the twenty-seven governorates of Egypt and continued for ten years. Also ongoing is the US Department of State's funding for "Tomorrow's Leaders Undergraduate Scholarship Programme (TLU)" for qualified students from eleven different Arab countries to study either at AUC, the American University in Beirut (AUB) or the Lebanese American University in Lebanon, fully covering their tuition, housing and other study expenses (U.S. Middle East Partnership Initiative, n.d.).

Providing a better match between taught curricula and market needs: this includes developing students' entrepreneurial skills and helping them develop their own businesses and start-ups. There are a number of initiatives that have successfully found a better match between students' skills and market needs, as shown in the examples below.

Support for Start-ups: The Venture Lab at the School of Business: AUC's venture lab was recognised as the Best Accelerator/Incubator Programme in North Africa at the Global Start-up Awards based in Copenhagen. To date, the AUC Venture lab has helped create more than 8,500 jobs and graduated 233 start-ups (AUC News, 20 December 2021).

Cairo University: Faculty of Economics and Political Science (FEPS): the Business Incubator: the Business Incubator at FEPS has been operating effectively for five years. Although business incubators are usually situated in business schools, the belief at FEPS was that since they are teaching students about economics, they might as well nurture their business ideas and start-ups and help them contribute positively to the economic development of their nation, even if it is on a micro scale. The FEPS business incubator is the first in Egyptian public universities. It provides three different types of services to aspiring businesses: a programme to raise awareness of entrepreneurship among young people; an incubation programme where seed funding is provided to selected start-ups, plus intense coaching and mentoring; and a business clinic programme where consultancies are offered to start-ups that have been in the market for more than two years (FEPS Business Incubator, 2022).

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Integrated Student Development within the Frame of Transformational Learning in the MENA Region - Towards Sustainable and Inclusive Societies

Iman Elkafas

Abstract

In a world in constant transformation, the job-for-life career pattern that universities traditionally prepared students for, has been replaced by the need to deal with a highly uncertain labour market. This new uncertain, intertwined global world, which faces unprecedented challenges, needs graduates who possess up-to-date knowledge and new skills and competencies that allow them to impact and lead these global changes successfully. The author presents a comprehensive model of student learning and development that she has developed and applied, which has proven successful in preparing university students to succeed in the current world. The model integrates students' academic development with multiple aspects of human development, such as emotional, physical, and intellectual. The model describes how the different units in a university join forces to develop a well-rounded student. This article explains the model in detail, states the requirements for success, and provides the experiences of some students who benefited from the model.

Introduction

Our rapidly transforming world has challenged higher education's traditional pattern of preparing students for a job-for-life career. There is now an urgent need to deal with the high level of uncertainty and unique threats and disruptions facing the world. **These current and unprecedented challenges require that graduates not only possess the most up-to-date knowledge in their specialisations but also master the competencies needed to address these challenges successfully**.

The author developed and applied the ProSPER model of student learning and development in Egypt and then it was adopted and adapted by institutions in the MENA Region, through the Association of Arab Universities (AArU). The author has also lectured about the model in universities and academic platforms globally. This practical model has proven successful in providing university students with competencies to succeed in a changing world, as shown in their testimonials. **The ProSPER model integrates students' academic development with selected aspects of human development, namely the emotional, physical, spiritual/artistic, and rational/intellectual development, together with the professional development needed, in a format that constitutes a student's learning experience while at university.** This article explains the model in detail, states the requirements for its success, and provides examples of universities that used the model, as well as the experiences of some of the students who benefited from the model.

What is PROSPER

ProSPER refers to the five aspects of student development that form the integrated components of the model. These five aspects are Professional (Pro) development, Spiritual (S) or artistic development, Physical (P) development, Emotional (E) development and Rational (R) or intellectual development. Each aspect has, in turn, components that were developed and refined when the model was first applied in Egypt (The American University in Cairo – Leadership in Education and Development Program).[1]

Description of how the model has been applied

As stated, the model was first applied as part of the LEAD Program of AUC in Egypt. **Students joining the**

1. For more information on the Leadership in Education and Development Program: https://dailynewsegypt.com/2006/09/11/auc-awards-top-students-full-scholarship/

AUC LEAD Program were selected on a competitive basis. Once selected, they followed a roadmap that focused on developing their competencies (knowledge, skills, and attitudes) and targeting the mentioned five ProSPER aspects of their development:

1) Professional development: Offered them online and face to face courses to strengthen their employability and entrepreneurship skills, such as agility, problem-solving, stress management, time management, crisis management, organisational skills, leadership skills, project, and risk management, etc. This aspect of development also included local internship opportunities related to their specialisations, as well as international opportunities for a semester abroad or to attend training or conference in another country to develop international competencies and get close exposure to diversity and ability to interact and integrate with other business cultures. Individual and business ethics were essential components of all activities in this aspect, together with developing the sense of being part of a global responsibility to promote and ensure sustainable living and inclusiveness.

2) Spiritual development: Focused on developing the artistic side of each student. Students were required to explore their unknown creative side and practise a type of art that refines their souls, including painting, music, singing, theatre acting, designing etc. Students were mentored by volunteer faculty members during the process and are required to track their own advancement. This program also includes open-air trips and linking to nature with appreciation and care for the environment and the preservation of nature. Focus on individual, group and global ethics and developing them in the student are also part of this component.

3) Physical development: Focused on three elements. First, offering nutritious food to students during their stay at the university together with providing sessions on good nutrition and how to eat and stay healthy to increase the ability to think and move. Second, students were required to regularly practice any sports available at the university or a partner organisation. Third, medical check-ups and advice were provided to students by the University clinic and partnering medical services to ensure that their health was improving through following the program. Again, students were mentored through this process.

4) Emotional development: Encouraged students to bond with their communities and neighbouring surroundings through having each of them join a local community service entity that served an underprivileged sector of the society, i.e., orphans, disabled, senior citizens, etc. Students discussed the choice of organisation with their mentor and regularly reported on their activities and contributions. This aspect also included visits to different Egyptian provinces to increase their awareness of Egyptian culture(s) and support their feeling rooted and integrated into their environment.

5) Reasoning and intellectual development: In addition to being offered courses in problem analysis and solving, reasoning/thinking, and addressing complex, interrelated matters, students were encouraged to read and research subjects inside and outside the classroom. Students were mentored to apply a comprehensive interdisciplinary and transdisciplinary approach and find solutions to an existing social, environmental, or economic problem. This included holding learning events and discussing and benefitting from the experience of guest speakers as part of researching the subject. Events were held at the end of the research time, where the students presented their research, findings, and recommendations to an outside audience representing multiple sectors of the society. Mentoring was provided throughout the research period, which could vary from three months to more.

Enrolled Students' Evaluation

A system was designed to evaluate students enrolled in the Leadership Development Program. The evaluation system monitored and evaluated five elements of student performance in the program and assigned points to this performance. The elements included: Maintaining good academic performance; demonstrated involvement with the community through local community service; participation in and benefitting from extra-curricular activities including program workshops, conferences, events, trips, etc.; physical development and improvement in fitness through nutrition and sports; and learned and applied attitudes and ethics. Students were periodically given scores on each of these five elements by the mentors. The program administration recognised high performers.

Program Evaluation and Model Expansion

Regular program evaluation took place, allowing for feedback and necessary alterations to the model's application. The model was later adopted by Heliopolis University for Sustainable Development in Egypt, by the National Youth Council of Egypt,[2] and by KAUST University in Saudi Arabia,[3] where it served as the basis for student recruitment and development programs.

Heliopolis University prides itself on its website for "empowering its students to be champions of sustainable development in different spheres of life" and for "combining academic teaching, scientific research, and practice with a unique humanistic core program to develop curious and creative minds that can reflect and act to shape a better future for all." KAUST University, in turn, prides itself in providing a "collaborative learning environment and a distinctive educational experience that encourages KAUST students to think beyond the laboratory building in a spirit of discovery, collaboration, excellence, curiosity, integrity, and a passion for doing things that matter to change the world." According to KAUST, education is provided in a "work-play-live environment, where students and faculty live together on the shores of the Red Sea, enjoying an exceptional quality of life, from schools to recreation to health care."[4]

The ProSPER model has recently been adopted by the Association of Arab Universities (AArU) as part of its 2019-2024 Strategy and as an integral part of the Association's approach to Transformational Learning.[5] AARU's mission emphasises the importance of new holistic approaches in preparing the graduates: "AArU facilitates and supports Arab Universities and higher education stakeholders in the development of state-of-the-art transformational solutions to prepare graduates who master the knowledge and competencies needed to strengthen and serve their national and regional communities, and integrating globally to address shared challenges and produce impactful results." AARU transformational learning approach, as will be explained later, places the student at the centre of the learning process and targets student development in the five aspects of ProSPER. The author advised on these different forms of adoption and adaptation of the model.

2. For more information on how Heliopolis University for Sustainable Development in Egypt – through adopting and adapting the ProSPER Model, has shaped its direction towards global wellbeing, check https://www.hu.edu.eg/
3. For more information, see https://www.kaust.edu.sa/en
4. For more information on the work-play-live environment of KAUST, please check: https://www.kaust.edu.sa/en/about/vision
5. For more information on how the Association of Arab Universities has included ProSPER in its Strategy 2019-2025, please visit http://www.aaru.edu.jo/Pages/StrategicPlanning.aspx

Requirements for the model's success: the concept of transformational learning

For the model to reach its maximum impact, different units, as well as individual members in universities, should commit to offering and making accessible the tools supporting the development of the five aspects of ProSPER. System and institutional-level changes may be needed to facilitate this process. The Association of Arab Universities (AArU) has described the requirements for ProSPER's success within its adopted approach of Transformational Learning in Arab Universities. The following are the highlights of the approach that tie into and facilitate the successful implementation of ProSPER.

For ProSPER to succeed, learning rather than teaching needs to be the focus of universities. The innovative design of integrated continuous student learning experiences is key. The idea is for students to learn almost without being aware of it. The core is to create a learning-living environment in universities. An environment where students find every element needed for their holistic development and where their education is linked to challenges and opportunities in the societies into which they will emerge.

The enabling environment includes a redefinition of the classroom, the role of the instructor, the pedagogical practices and - above all – a redefinition of the goals of the universities. This is reflected in four main dimensions: placing students at the centre of the learning process, moving towards interdisciplinarity and multi-disciplinarity in designing curricula, international cooperation, and digitalisation of education. It is also reflected in a change of the value definition of the ins-

tructor from researcher and publisher to facilitator and mentor; this will be reflected in both the recruitment and evaluation of the instructor. The classroom concept will also change with the introduction of the "university without walls" where students engage with the community, and the community engages with students to jointly co-create knowledge and identify and address problems.

This approach requires flexibility, autonomy, and decentralisation in decision-making at the university, department, and instructor levels. Each should have the ability to design their holistic approaches to suit their own students and environments. Partnerships, capacity development, governance and systems reviews and continued monitoring, evaluation and learning are critical to this approach.

To summarise, Integrated student leadership development targeting the above-described aspects of ProSPER has proven successful when applied by universities in the MENA Region. It is now expanding through the Association of Arab Universities (AARU) in connection with their concept of Transformational Learning (TL). Transformational Learning and the Integrated Student Leadership Development together have successfully equipped students in universities with the competencies needed to address challenges and uncertainties. More reflection and wider application are encouraged to prepare students to lead the global efforts towards equity, well-being, and the realisation of sustainable and inclusive communities.

Student Testimonials

Nada Radwan

The LEAD was not only about academia, but it was also a whole new lifestyle. The reflection retreats, the discussions with high profile guest speakers, the research we conducted and the reports we prepared all affected my way of thinking and being. I became more flexible and open to different opinions. I learned to love and embrace our differences.

Alaa Mosbah

The LEAD program helped me discover my real passion for writing and filmmaking and shifted my career from medicine to innovative art. I spent a semester abroad in New York, an experience I wrote about in my first published book.

Dr Eng. Naglaa El Agroudy

In all the positions I pursued, my coworkers and supervisors commended my efficient problem solving, multi-tasking, project management, initiative-taking and communication skills. I attribute all these skills to the LEAD program.

Hend El-Taher

While it exposed me to the international environment through its study abroad component, the LEAD program enhanced my sense of belonging through its Egyptian provinces' component. Being part of a highly diverse program has given me the confidence to join and enjoy different cultures and environments.

Ramadan Moussa

I benefited tremendously from the public speaking courses and the annual conference that we prepared

from A to Z as students. This shaped my career as a diplomat. The multi-disciplinary and holistic handling of conflicting issues also impacted my current way of seeing things.

Lobna El Shafie

One of many amazing things that the LEAD Program instilled in me was the belief that there was a way out of all challenges. We just needed to be attentive to a possible solution. The solution was to be found not only in academia but also through learning from the diverse communities that we always took part in. We learnt to have a holistic multi-angle approach to addressing every challenge.

Amira Hassanein

The deep community engagement, the opportunities to exercise our own leadership, the celebration and appreciation of a balanced life where one pursues extracurricular interests, the resilience we built with the responsibility and trust that was provided, and our own community of students where I personally sought intellectual and moral nourishment were for me the core of my cherished program.

Ahmed Khalifa

The Program paid special attention to preparing us as ethical entrepreneurs and leaders. This gave me an edge in my post-graduate career in the United States IT industry and empowered me to find my way with an entrepreneurial and ethical spirit and build a successful career in a very competitive environment.

Ereny Zarif

In addition to a wide array of extra-curricular activities, I loved the cultural exchange through the semester abroad component and the summer internships in big corporations. Although I felt overloaded back then, later in my career, I appreciated the emphasis on independence, resilience, innovation, hard work, teamwork, self-confidence and open-mindedness This equipped me to take on daring assignments internationally.

Amr EL Saady

I enhanced my communication, networking and community engagement skills through the extra-curricular component of the Program. This empowered me to shape my career, focusing on the community and the importance of communication for resolving difficult issues.

Laila Fouad

My favourite was the community involvement and service component. I volunteered to teach Arabic and English to the University housekeeping staff. This made me realise that I loved teaching, strengthened my communication skills and later led me to my current job as a math teacher.

Mohamed Zain

LEAD was a fully integrated program working on the multidimensional development of its students. Community involvement and service, together with ethical development and concern for the environment, has marked my life forever.

Sara Taraman

We were provided with a safe space to mature, realise our full potential, and explore the world around us. Experiential learning, ethics, professionalism, diversity, and inclusion formed the core of the program. My current workplace has three other LEAD graduates working with me. Our colleagues say, “If you want it done right, give it to a LEAD”.

3.2 North America

Remaking American Higher Education: Innovation in a Time of Disruption

Steven H. Mintz

Abstract

Although American colleges and universities receive much more public and private support than their foreign counterparts, enrol a higher proportion of college-age population and attract many more international students, American higher education is beset by pressing challenges, such as affordability, student debt, low levels of degree attainment, high levels of inequality, and questionable student learning and post-graduation employment outcomes. These problems have prompted widespread calls for innovation in curriculum design, pedagogy, assessment, delivery modalities, and credentialing. This essay will look at the distinctiveness of American higher education; how the post-secondary landscape is shifting; the challenges and forces that are driving calls for innovation; barriers to innovation; and the kinds of innovation that are most likely to gain traction in years to come.

American higher education is, in many respects, the envy of the world. The United States' most prestigious research universities dominate global rankings. Roughly a fifth of all international students choose to study at an American college or university, more than twice the number that attend the UK, Canadian, or Australian universities and more than in France, Germany, Japan, and Spain combined. In addition, public and private support for American colleges and universities significantly exceeds its foreign counterparts (UNESCO, 2022).

And yet, for all its successes, American higher education is beset by pressing problems. These involve affordability, student debt, degree attainment, equity, and post-graduation outcomes. There are serious doubts about how much American college students learn and how well-prepared they are for the job market.

These problems have prompted widespread calls for innovation. The proposed innovations take diverse forms and include calls for innovations in curriculum, degree pathways, pedagogy, assessment, delivery modalities, and credentialing. Some go further and call for faster, cheaper, more flexible career pathways.

In this essay, I will look at the distinctiveness of American higher education, how the nation's higher education landscape is shifting, and the challenges that drive the calls for innovation. I will then examine the variety of innovations that are under consideration, the barriers that impede the implementation of these innovations, and the kinds of innovation that are most likely to gain traction in the years ahead.

We're told that predicting the future is a mug's game. Nevertheless, it is essential to recognise that American higher education has never been static and has repeatedly had to adapt to novel circumstances. As America's colleges and universities confront fresh challenges, it is high time to scrutinise and evaluate the transformations that are already underway.

The Distinctiveness of American Higher Education

Although American colleges and universities resemble those in the United Kingdom and Europe with their grassy quads and limestone and sandstone-clad gothic and Georgian architecture, in fact, higher education in the United States differs sharply from its foreign counterparts.

The most obvious distinctions involve the number and variety of institutions. The American higher education landscape consists of over 4,000 public and private institutions and includes non-profit and for-profit colleges and universities, selective and open-enrolment institutions, 2- and 4-year schools, secular and religious institutions, predominantly face-to-face and fully online providers, and residential and commuter campuses.

Other distinctive features of American higher education include profound differences in mission, size, and cost. The higher education ecosystem in the United

States includes technical institutes, military academies, music conservatories, religious seminaries, and art schools, as well as specialised institutions that train healthcare workers, airline pilots and mechanics, and information technology specialists. Institutions range in size from fewer than a thousand students to online institutions with enrolments that top 140,000 learners. The cost of attendance ranges from substantially less than $10,000 a year to $70,000 and more annually (Powell et al., 2021).

But perhaps **American higher education's most unique feature is that it is a highly competitive higher education marketplace, with institutions competing for students, faculty, resources, and reputation. One consequence is a higher education system that is highly stratified,** with a small number of colleges and universities with endowments in the billions, while the vast majority of institutions have endowments less than a tenth of that amount.

American higher education is distinctive in other respects, as well. A widespread belief that a college degree is a prerequisite for a secure middle-class standard of living has led the United States to offer few alternative routes, like apprenticeships, into the workforce. Also, most American institutions are unselective, meaning that almost any high school graduate can find a college or university that will accept them.

Two other defining features of American higher education deserve notice. One is an emphasis on the liberal arts. At most American colleges and universities, all students, irrespective of their major, must fulfil certain liberal arts requirements, which typically account for a third of the credit hours required for graduation. These typically take the form of distribution requirements that entail successfully completing courses in composition, mathematics, the arts, the humanities, and the social and natural sciences. Some programmes also require students to demonstrate a basic level of fluency in a foreign language.

Stressful student life is yet another defining characteristic of American colleges and universities. Most 4-year institutions provide residence and dining halls and sponsor a host of extracurricular activities, including intercollegiate athletics. In the United States, a college is not simply an educational institution. It also provides a coming-of-age experience. The breadth of functions of colleges and universities – which includes human capital formation, local and regional economic development, basic and applied research – and these institution's range of responsibilities – typically encompassing health care, a wide range of student activities, and entertainment -- help explain why a college education in the United States costs much more than elsewhere.

Challenges Facing American Higher Education

The challenges facing American higher education are many. First of all, there is a demographic challenge. As the high school-aged population has fallen, especially in the Northeast and Middle West, many institutions, desperate to tap new markets, aggressively pursue international students, community college transfer students, military veterans, working adults, family caregivers, and students from lower-income backgrounds.

In general, these non-traditional students require greater investments in student services and academic and financial support. Many attend part-time, and many swirl from one institution to another.

Another source of concern is a completion challenge: Graduation rates being too low and time to obtain a degree too long. Around 40 per cent of first-time, full-time students at 4-year colleges and universities fail to graduate and, as a result, fail to reap higher education's economic advantages. Completion rates are even lower for part-time and transfer students and lower still for community college students (Hanson, 2021).

Yet another challenge involves cost. Tuition, fees, and room and board have risen much faster than the cost of living and even faster than housing and healthcare, resulting in very high levels of student debt. Among the factors contributing to rising costs are pressure to institute new academic programmes, increasing expenditures on financial aid, technology, energy, and campus maintenance, compliance with government mandates, and rising expectations about facilities and student support services. The result is a business model challenge, as institutions strive to limit costs while increasing revenue.[1]

1. For more information on the topic, see:
Archibald, Robert B. and Feldman, David H. (2010) Why Does College Cost So Much? New York; Oxford University Press.
Archibald, Robert B. and Feldman, David H. The Road Ahead for Colleges and Universities (2017). New York: Oxford University Press.

Then, there are learning and workforce readiness challenges. The learning outcomes of a college education are highly uncertain, and rightly or wrongly, there is a widespread perception in the business world that college graduates are inadequately prepared for the workplace. Then there is a post-graduation challenge; many graduates flail and flounder for years before landing a steady job. According to some recent studies (Redden, 2020; Georgetown University's Center on Education and the Workforce, 2022), 40 per cent of graduates wind up in a job unrelated to their degree, and that at 30 per cent of colleges, nearly half the degree holders earn less than high school graduates.

Equality challenges also arouse widespread concern. These include the fact that Black, Hispanic, and students from low-income backgrounds are concentrated in the least selective, least resourced institutions. Also, Black, Hispanic, and female students tend to enrol in majors with lower post-graduation earnings. At the same time, students who start at a community college and transfer to a 4-year institution often discover that the courses they took do not count toward general education or major requirements.

Then, too, there are pressing political challenges. A growing number of voters express doubts as to whether colleges offer an adequate return on investment. Also, there is concern, especially pronounced among Republicans, that freedom of speech and diversity of opinions on campus are threatened.

These challenges have prompted widespread calls for innovation. How to make higher education more affordable and accessible, increase graduation rates, provide a better return on investment, enhance student learning, and better prepare graduates for the workforce – these are but a few of the problems that innovators are trying to solve.

The Shifting Higher Education Landscape

The United States' higher education landscape is much more diverse than the public generally assumes. The stereotypical selective residential institutions that connote higher education in the popular imagination actually comprise a small minority of institutions. Only 50 to 60 institutions are considered highly selective, admitting a third or fewer applicants. Nearly half of college students attend a 2-year institution, and one in five or six are in fully online programmes (CollegeData.com, 2022).

The higher education landscape is in a state of flux. Competition for students has intensified. Demand for master's degrees has swollen. A spate of institutional mergers and acquisitions has occurred, while multicampus institutions (like North-eastern with nine campuses) have multiplied.

Among the most important shifts in the higher education ecosystem are these:

1) The boundaries between high school and college are blurring, as secondary school students increasingly acquire college credits through early college/dual degree programmes, Advanced Placement, and International Baccalaureate programmes.

2) Alternative credentials are proliferating. Alternatives to associate's, bachelor's degrees, and master's degrees include an expanding universe of job-related certificates and certifications and shorter, accelerated programmes like edX's MicroMasters and Coursera's MasterTrack.

3) Alternative providers are partnering and sometimes competing with existing institutions. These range from technology giants like Google and Microsoft, museums like the American Museum of Natural History and the New-York Historical Society, foundations like the Gilder Lehrman Institute of American History, coding academies, boot camps, and low-cost and even tuition-free providers, like the University of the People.

4) New educational models are emerging, including competency-based approaches, self-paced, self-directed learning, earn-learn programmes, and stackable models, some of which are organised around demonstrated competencies rather than seat time and award credit for prior learning.

5) New platforms and educational marketplaces have arisen, including the MOOC platforms Coursera and edX.

6) The number of faculty off the tenure track has risen sharply, while many online institutions have embraced new staffing models that replace faculty subject area specialists with coaches, course mentors, and designated graders.

Contrasting Conceptions of Innovation

Innovation in American higher education is taking diverse forms. There are, currently, four dominant approaches to innovation in higher education:

Disruptive innovation

The most radical disruptors want to create cheaper, faster, more flexible pathways into the job market that can better serve the needs of working adults, family caregivers, and degree completers who do not have the time or resources to pursue a traditional on-campus education. To cut costs and trim time to degree, disrupters like Western Governors University, which currently enrols over 135,000 students, has (Ehrmann, 2021):

- Adopted a staffing model that replaces traditional faculty members with less expensive coaches and course mentors.
- Substituted "master" classes, designed by teams of content-area, instructional designers, pedagogues, and assessments specialists, for those created by individual instructors.
- Offers self-paced, self-directed courses with multiple start dates and flexible calendars.
- Awards credit for prior learning.
- Features a "competency-based" approach that emphasises mastery of job-related skills rather than seat time or credit hours.

By targeting adult learners, the disruptors found a niche that many existing institutions have failed to serve adequately due to their limited start dates, long semesters, and higher costs.

Technological innovation

Technology, many innovators believe, holds out the prospect of personalising education and guiding and supporting students more efficiently and proactively.

By monitoring student behaviour, learning analytics makes it possible to identify struggling or off-track students and trigger interventions in near real-time. The most sophisticated data-informed approaches, like those utilized by Georgia State University, track literally hundreds of variables, including student engagement, persistence, and performance in individual classes, delays in declaring a major, changes in majors, and shifts in the number of courses taken, and then respond with behavioural nudges or other forms of support (O'Bryan & Shah, 2021).

Technology, proponents argue, can also enhance the learning experience itself. The University of Michigan, for example, has introduced a number of technology tools to improve students' learning outcomes at scale (University of Michigan Center for Academic Innovation, 2022).[2]

- M-Write, an automated essay grading software, analyses students' written responses to prompts and questions to identify students who need additional help in understanding essential course concepts and provide immediate feedback on their writing.
- ECoach is a personalised advising and educational support platform that informs students about their professors' learning goals, provides study tips, updates students about their progress in their classes, and enables students to study course material collaboratively. Future iterations will help students select majors and inform them about study abroad, internships, and research opportunities.

However, the history of instructional technology is largely a history of disappointment, due, in part, to the fact that technology designers clung to a rather poor understanding of the learning process, typically involving scripted instruction and drills. **More recent innovations, in contrast, adopt a constructivist approach to learning in which students actively process information and engage in problem-solving and project creation.**

New tools give students the opportunity to collaboratively annotate texts and images, curate content, construct timelines, map concepts, mine texts, visualize data, create infographics, digital stories, podcasts, Word Clouds, and virtual museum exhibits and contribute to class blogs and virtual encyclopaedias.

Pedagogical innovation

The goal of pedagogical innovation is to improve the quality of teaching and reduce achievement and equity gaps by embracing the insights of the learning

2. See: https://lsa.umich.edu/sweetland/mwrite.html for M-Write and https://ecoach.ai.umich.edu/Welcome/ for ECoach.

sciences and constructivist learning theories. **Proponents of pedagogical innovation seek to replace instructor-centred classrooms with educational experiences that are more learner and learning-centred and emphasise active-, inquiry-, problem-, team-, and project-based learning.**

Key principles derived from the learning sciences include these:

- Deep learning and conceptual understanding require students to actively process information, alone or with peers, rather than merely absorbing information passively.
- Engagement is central to learning, and students are more motivated to persist when they consider the content meaningful and relevant and believe that their abilities and skills can be developed through sustained effort and practice.
- Students learn more when an instructor guides, models, scaffolds, and supports student learning and provides regular, substantive feedback and when students interact with one another, for example, by taking part in discussions and debates, or engaging in role-playing activities, or participating in collaborative inquiry or problem-solving.
- That instructors can enhance student learning by embracing certain empirically validated pedagogical practices, including:

  Frequent low-stakes quizzing: Frequent quizzing helps students strengthen their ability to remember, retrieve, and apply information while reducing test-taking anxieties.

  Interleaving: Learning is improved when students study a variety of topics rather than focusing exclusively on a single subject.

  Mental modelling: Comprehension increases when students extract underlying patterns and principles from the instructional material and construct an explanation, an interpretive framework, or a casual model.

  Retrieval practice: The effortful recall of facts or concepts reinforces memory and understanding.

  Spaced practice: Spreading the study of content and concepts over time strengthens cognitive understanding.

  Metacognition: To become self-regulated learners, students must learn how to monitor and critically evaluate their thought processes, knowledge, and skills.

Big challenges stand in the way of pedagogical innovation. Doctoral programmes do not emphasise training in teaching, and few colleges require or incentivize faculty to adopt evidence-based instructional approaches. The classroom largely remains a black box, and student course evaluations are notoriously unreliable and often biased. Meanwhile, models of "effective" instruction, like TED talks or public television documentaries, do not reflect the importance of social interaction, timely, substantive feedback, and active engagement and processing of information in facilitating learning.

Curricular innovation

The goals of curricular innovation are three-fold:

- To rethink educational pathways to bring more students to success. One example is the idea of math pathways – math classes that are better aligned to students' areas of interest. Thus, students in the arts and humanities might benefit from courses in quantitative reasoning, those in the social sciences from classes in statistics, and those in the sciences from Calculus. Another example is the idea of structured degree pathways that provide students with more coherent educational trajectories that are carefully sequenced and have clearly defined learning objectives.
- To integrate career preparation across the undergraduate years.
- To incorporate more applied, experiential, high-impact, and educationally purposeful activities (including mentored research, supervised internships, undergraduate research, study abroad, service-learning, and community engagement) within the undergraduate experience.

  The innovations that I myself favour most strongly combine elements of each of these approaches. Innovation, in my view, is imperative because today's dominant educational model does not serve many students well. The problems are:

- Distribution requirements that entail a grab bag of discipline-based introductory courses that tend to do little to provide students with broad perspectives on the arts, humanities, and natural and social sciences or to help undergraduates develop their communication or numerical skills, essential civic knowledge, and cultural literacy. Meanwhile, most students do not get help with study and test-taking skills or assistance with choosing a major and creating a degree plan that would help them graduate successfully in a timely manner.
- The expectation that students take five classes simultaneously if they are to graduate in four years is at odds with the realities of life for today's new student majority, who must juggle coursework with other responsibilities. Ensuring undergraduates receive a rigorous, intensive, and impactful academic experience will require us to rethink what we teach, how we teach, and how a college education is delivered.
- A discipline-based major only rarely prepares students for the kinds of jobs that they are most likely to pursue after graduation. If we are to improve career readiness, we need to consider other ways to ensure that graduates get windows into the job market and acquire job-related skills.
- Extra-curricular activities, which instil a sense of belonging and give students opportunities to develop the social, intercultural, leadership, and soft skills that will serve them well in later life, are optional, and many students today lack time to take advantage of these activities. It makes sense, in my view, to figure out how to integrate these opportunities into the co-curriculum.
- Limited numbers of advisors, which means that when students experience problems, no one notices, and help is not readily available.

So, what should we do?

1) Reassess the purpose of a college education.

   In addition to being about career preparation and credentialing, we should embrace a more ambitious conception of the purpose of undergraduate education. In my view, a college education should be developmental and transformational. It should promote the growth of the whole student, emotionally, socially, physically, and ethically as well as cognitively. It should expose students to the arts and culture and enhance their aesthetic sensibilities. It should also free students to think in fresh, analytical, and informed ways and help them bring historical, ethical, and cross-cultural perspectives to bear on current issues.

2) Reconsider what we teach.

   There is nothing wrong with specialised, discipline-focused courses, but we should also expand students' opportunities to study bigger issues from multidisciplinary perspectives. Students would also benefit from more coherent and integrated degree pathways consisting of intentionally aligned, synergistic courses. Thus, a biomedical pathway might include courses in chemistry and physics that draw examples from the human body; arts and humanities classes that focus on the literature of pain and illness, representations of the body, and the history of disease, medicine, and public health; and social studies classes that examine epidemiology, health policy, and the impact of social structure, behaviour, and values upon health.

3) Rethink how we teach.

   A host of interesting ideas about pedagogy are circulating that instructors might consider. These include inquiry, case, decoding the discipline, interdisciplinary, gamified, policy-oriented, and project-based approaches. There is also social-emotional learning and culturally responsive and trauma-informed pedagogies. Each of these approaches offers a way to provide a learning-centred education that cultivates students' technical, research and soft skills, promotes students' social and emotional development, and fosters greater interaction with faculty and classmates.

4) Make equity a high priority.

   Unfortunately, inequities pervade the academia. Low grades and course withdrawals often correlate with a variety of variables. Women and students from underrepresented and low-income backgrounds are frequently less likely to major in high-demand fields.

   The first step in addressing these inequities is to conduct an equity audit to identify discrepancies based on gender or race or ethnicity, or some other social variable such as transfer status. Next, it is helpful to survey students to isolate the factors that contribute to equity gaps and to review low-stakes assessments that might indicate areas of potential problems. Then, it is essential to engage in a process of reflection and analysis to determine how disparities might be best addressed.

5) Make the transfer process more seamless.

Even at institutions where transfer students constitute a majority of graduates, it is often the case that these students face barriers to success. Problems many transfer students encounter include delayed evaluation of transcripts, transferred credits treated as electives, course unavailability, gated majors, and placement tests that channel transfer students into non-credit remedial courses.

Best practices include aligning 2- and 4-year gen ed and major requirements; expediting transcript evaluation; improving onboarding of transfer students; offering targeted programmes and services (including bridge programmes, a one-stop resource centre for transfer students, peer mentoring, and co-requisite remediation, which substitutes credit-bearing courses with supplemental instruction, for remedial courses). An exciting innovation is co-enrolment, in which a student is simultaneously accepted at neighbouring 2- and 4-year institutions and can take classes and receive advising from both.

6) Reimagine how we assess student learning.

Instead of relying largely on high-stakes examinations and term papers, faculty should consider alternative modes of assessment. These might include frequent low-stakes quizzing, authentic assessments (like a letter to the editor, a memo, a proposal, or a policy brief), a multimedia or poster presentation, a performance task, a project, a presentation, a podcast or video story, or a student portfolio.

To remain relevant, institutions, even institutions as time-honoured and deeply entrenched as colleges and universities, must adapt and evolve to meet new realities. Higher education in the United States must adjust to demographic shifts, changes in student interests and needs, and the evolution of the economy and workplaces. Pedagogy, too, must adapt. Even at residential campuses, students are less content to sit in lecture halls and seek alternatives, including practicums, research opportunities, maker spaces, internships, and clinical and field experiences.

For far too long, American higher education has been institution- and faculty-centred rather than learner-centric. It is not that colleges and universities do not provide students with a host of services and activities. It is certainly the case that many schools regard students as customers that need to be aggressively recruited and treated with kid gloves. But a customer focus is not the same as a learner focus, which involves commitments to bringing all students to mastery, designing learning experiences that are engaging, immersive, and experiential, introducing pedagogies and modes of delivery that meet the needs of all students and providing frequent feedback and interaction, wrap-around support, and intensive mentoring.

Too often, curricula, schedules, pedagogies, assessments, and workload policies reflect the interests of departments rather than what we know about teaching and learning, students' developmental needs, or the challenges faced by today's growing number of non-traditional students.

In my eyes, those takeaways underscore the need for continued innovation, experimentation, and a focus on student development across all dimensions.

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Trends in Canadian higher education institutions: Recognising the importance of community engagement and research for social impact

Joanne Curry and Stephen Dooley

Abstract

In a changing and complex world, higher education institutions (HEIs) and funding bodies have identified the benefits of linking students, faculty, and researchers more closely to people, institutions, and enterprises in their communities. In addition to building connections, enhancing research relevance, supporting innovation, and raising economic productivity, there is also a moral imperative to engage, especially for public institutions with a social and fiduciary responsibility to help their communities address the accursed problems of our time – from climate change to inequality, from supporting the needs of Black, Indigenous, and People of Colour (BIPOC) to addressing the United Nations Sustainable Development Goals. An increasing number of academic institutions have embraced this challenge, and while the road is long, winding, sometimes potholed and forked, research shows the value of engagement often comes not so much from reaching a destination but the process of getting there.

This paper discusses key ideas and shares good practices regarding community engagement, community partnerships, and community-engaged research in Canada's higher education sector. Using examples from Simon Fraser University (SFU) and other Canadian HEIs and organisations, we identify challenges, opportunities, and strategies to help universities, research funders, and their communities achieve their best results together.

Introduction – Community Partnerships and Institutional Approaches

Structurally, HEIs have always engaged with their communities, as with professional schools, liaising with the accreditation bodies that are essential to fulfilling their mutually supportive functions. Tactically, policymakers have also long understood the practical and often profitable benefits of linking universities with the businesses and agencies that thrive on research assistance. In Canada, for example, the federally funded Canada Foundation for Innovation demands such linkage as a condition for funding university-based initiatives.

Recently, however, an increasing number of HEIs have come to recognise the strategic advantages of community engagement, including the broad benefits that accrue to students, staff, and faculty who are closely engaged. These HEIs are supplementing their educational and research efforts with the full range of financial and physical resources to link more closely with and better serve community interests.

The "whole institution" concept challenges institutions to bring all their assets to bear to connect with and support communities.

Simon Fraser University (SFU) partnered with the JW McConnell Family Foundation to commission the 2017 report, *Maximizing the Capacities of Advanced Education Institutions to Build Social Infrastructure for Canadian Communities*. The report identifies five sets of instruments that HEIs can leverage to foster community and societal wellbeing: financial, physical, relational, educational, and research. **HEIs across Canada are now embracing these practices, looking for ways to increase their social impact by embedding "whole institution" engagement in their strategic plans in a manner that not only recognises the unique attributes of the communities it serves but also views the community as a key collaborator.**

Social procurement, social infrastructure, and inter-institutional collaborations

Numerous institutions, from SFU in British Columbia to York University in Ontario, are using social procurement to advance the wellbeing of their communities, helping to reduce poverty, promote economic and social inclusion, and support local economic development and social enterprise. As purchasers of millions of dollars in goods and services, higher education procurement departments can achieve unprecedented community benefits merely by incorporating social and environmental factors in their purchasing practices.

The British Columbia Collaborative for Social Infrastructures (BCCSI) has developed a social procurement guide (Simon Fraser University, n.d.). The BCCSI was founded by SFU, the BC Institute of Technology, the University of Northern BC, and Vancouver Island University, with funding from the McConnell Foundation to scale up social infrastructure practices. Another BC initiative, the Community Scholars Program, gives charitable and non-profit organizations across the province expanded training and access to library journals (Simon Fraser University, 2021).

In Ontario, Georgian College is partnering with Ashoka Canada on a Community Benefit Purchasing project (Georgian College, 2020), and York University has committed to an institution-wide social procurement strategy. SFU is also a leader in planning, building, or renewing campus infrastructure in a way that supports community development, a category explored in another thought piece commissioned by the McConnell Family Foundation in partnership with SFU.

City-university partnerships

There is also an emerging trend among HEIs to widen and deepen mutually beneficial partnerships, specifically with local governments and First Nations. Many cities and universities are formalizing their collaborations by entering into agreements or creating joint structures to support work in priority areas. At its three campuses in Burnaby, Vancouver, and Surrey, SFU has strategically built out formal civic-university collaborations, promoting connections up and down their respective hierarchies, capped with formal mayor/president relationships. Innovations include the co-founding of Vancouver City Studio, a programme that inspired a stand-alone entity that now operates City Studios throughout the world (CityStudio Vancouver, 2022). Innovation districts, civic innovation labs, and joint projects are also well underway.

Elsewhere in Canada, the University of Calgary (2022) and the University of Saskatchewan (2018) have developed local government partnerships to improve knowledge and technology transfer and advance community economic and social development. Both city and university partners realize the benefits of collaboration, each providing dedicated people and resources to support the work. [(1)]

SFU has several signature community programmes, including:

Image: SFU Public Square, 2019 Community Summit, Panel Discussion lead by SFU President, Dr Joy Johnson

a) SFU Public Square holds a space for authentic conversations with communities to learn together and work towards equitable and sustainable solutions to our world's complex challenges.

b) The SFU Surrey - TD Community Engagement Centre promotes collaboration, resource sharing and co-creation of ideas, facilitating and aligning university and community capacities to identify and address key societal issues affecting Surrey's City Centre and surrounding neighbourhoods.

c) The SFU Community Leaders Igniting Change (CLIC) programme, a partnership with the City of Surrey Poverty Reduction Coalition and Envision Financial, is

1. For factors in building local government-university relationships, see Curry (2016).

a leadership programme for marginalized community members that recognizes that all humans have assets and lived experience that can be further developed. Participants, most of whom have never previously been on a university campus, engage with peers to identify local issues and craft responses that promote social wellbeing and belonging.

Indigenous relationships

Image: Tsatia Adzich (Métis): 2016 convocation speaker; conferred a Bachelor of Arts degree by Simon Fraser University in BC, Canada, in Communications & First Nations Studies

Inspired by the 2015 Truth and Reconciliation Commission report (Truth and Reconciliation Commission of Canada, 2015), **HEIs across Canada have begun to address the lack of academic, research, and community-level relationships with Indigenous peoples.** Calls to action include developing institutional plans and strategies (see SFU, UBC, and UVic), hiring Indigenous faculty and staff, creating new Indigenous student pathways, launching programmes for Indigenous language instruction and incorporating Indigenous culture and ceremony into events and convocations. Universities Canada has published principles (Universities Canada, 2015) to guide these efforts. As part of these comprehensive approaches, universities, colleges, and institutes are working more closely and formalizing relationships with their local First Nations. In BC, the role of the local First Nations in economic and social development is prominent. The nations of Squamish, Musqeam and Tsleil-Waututh are now among the largest holders of developable land in Vancouver.

Measuring and recognizing campus-community connections to support institutional learning

Since 2019, sixteen HEIs representing diverse communities and post-secondary institutions have immersed themselves in the Carnegie Elective Community Engagement Classification (2021)– a system that strives to support institutional learning and transformation to nurture deeply rooted and pervasive community engagement. A similar project has also run in Australia.

During a three-year pilot, the 16 Canadian HEIs strengthened their learning community by reflecting on the importance of community-campus connections and the roles of HEIs in social justice, truth and reconciliation with Indigenous communities, values inherent in bilingual and multi-cultural societies and equity, diversity, and inclusion.

The Canadian Pilot Cohort of the Carnegie Community Engagement Classification (2021) is now in the last stages of launching a framework that will welcome, inform, and engage other HEIs that seek to better understand, evaluate, measure, and improve their effectiveness and impact within their respective communities.

One of the pilot's findings is that signature programmes can serve as beacons of excellence for community engagement. Programmes with a demonstrable social impact can catalyze further public and institutional support for programming and research allocation. Further, while it is important to measure success, it is equally important to celebrate, both within the institution and with community partners.

Community-Engaged Research

There are many related terms and definitions of community engagement (CE) and community-engaged research (CER). Many institutions are using or adapting the Carnegie Foundation (2021) definition of CE as a "collaboration between higher education institutions and their larger communities (local, regional/state, national, global) for the mutually beneficial exchange

of knowledge and resources in a context of partnership and reciprocity". Community-Based Research Canada (CBR Canada) interprets community-engaged research as "a research approach that involves active participation of stakeholders, those whose lives are affected by the issue being studied, in all phases of research to produce useful results to make positive changes" (Nelson et al., 1998, p.12).

Where community engagement can take on a great diversity of forms – learning, dialogue, volunteerism, community-centred education programmes, etc. – community-engaged research aims to address a special question or problem through an applied research paradigm. They all have in common that they are rooted in reciprocity, power-sharing, mutual participation, and action-orientation with project outcomes that are practically relevant to community members, making positive social change and/or promoting social equity. Researchers and practitioners do not jump in and out of community work; they show up, take the time to build relationships, and work as equal partners with community members.

It is important not to treat 'the community' as a single, homogenous entity.

While it is tempting to see one community when looking outside the university walls, **there are always multiple, diverse communities, some with competing ideas and perspectives. It is important that university strategies take account of this as they pursue connections and deploy resources.**

Image: Our Community, Our Voice research project (2016); graphic facilitator captures comments and ideas from community consultation

A recent study of refugees settled near SFU Surrey confirmed the diversity of community stakeholders. Our Community, Our Voice (OCOV) was a 2-year university-community research study, funded by Immigrant Refugee Citizenship Canada (IRCC) and facilitated by the City of Surrey, to identify the settlement needs of new refugees (Our Community, Our Voice Steering Committee, 2016). Surrey has the highest intake of refugees of any city in British Columbia, and it was important to develop appropriate services to meet settlement challenges.

On the flip side, **the community can also misread the university as a homogenous entity, flush with resources and easy to navigate.** Instead, community members often find a warren of faculties and departments – complex, diverse, sometimes disconnected and variously motivated. **It is important to be conscious of the two-way complexities when establishing partnerships.**

Initiatives such as SFU's Community-Engaged Research Initiative (CERi) provide an important front door to a university. CERi's mission is to develop a unique social infrastructure to entrench and expand SFU's capacity to lead community-engaged research (Simon Fraser University, n.d.).

In this context, an often-discussed barrier to the development of partnerships is the time it can, and should, take to establish authentic relationships. There is also a potential disconnect between these prerequisites for community engagement and tenure and promotion policies in the academy, especially for junior faculty members who struggle to establish community relationships while trying to publish enough to move up the ranks.

An important trend in community-engaged research is a shift towards community driven-research (Nguyen et al., 2021; Wallerstein et al., 2017).

This emerging practice gives more decision-making power, including the distribution of research funds, directly to community groups (Minkler et al., 2003; Plumb et al., 2004; Tremblay et al., 2017). A major impetus for the shift to community driven research is the need to decolonize research to better meet the needs of (and not do harm to) Indigenous communities (Tri-Council of Canada, 2010, see Chapter 9: Research Involving the First Nations, Inuit and Métis

Peoples of Canada). Historically, Indigenous communities were 'researched' – as subjects, not participants – while Indigenous peoples are now striving to be more self-empowered, to re-imagine and govern their own research processes (Schnarch, 2004; Tuck, 2009; Tuck & Yang, 2012; Wilson, 2008) and work with settlers as allies (Flicker, 2018; Held, 2019).

The concept of community-driven research is also embedded in other contexts, such as patient-oriented research. The Fraser Health Authority in British Columbia, Canada, has launched a Patients Partnership in Research programme designed to engage patients along a spectrum from consultation, to involvement, to collaboration and empowerment in research.

Here again, funding agencies are exploring how to provide funds directly to community organizations. In 2017, the Canada Research Coordinating Committee (CRCC) was created to improve the coordination of Canada's research funding agencies: the Social Sciences and Humanities Research Council (SSHRC), the Natural Sciences and Engineering Research Council (NSERC), the Canadian Institutes of Health Research (CIHR), and the Canada Foundation for Innovation (CFI). SSHRC's flagship 'Connections and Partnership Grants' have been bridging capacity and knowledge exchange between campus and community for almost two decades in the social sciences and humanities. But challenges remain. For example, programmes rarely include funding to support and pay salaries of community partners or for the time of community participants.

CIHR is also a leader in community-driven and patient-oriented research, and NSERC has several programmes that call for more collaborative partnerships in science. For example, the CIHR HIV/AIDS and STBBI Community-Based Research (CBR) Program can provide direct funding to the community.

The CRCC and other philanthropic and governmental funding bodies, such as the Vancouver Foundation, the Mental Health Commission of Canada, and the Canadian Mortgage and Housing Corporation, are now requiring community-driven, participatory research in several of their granting programmes. Equity, diversity, and inclusion (EDI) are also increasingly common considerations in policy development across higher education and public institutions, civil society, and corporate sectors. It is now standard for higher education institutions to require funding proposals and projects to include EDI consideration. This is ever more important in addressing local challenges faced by Indigenous peoples, visible minorities, members of the LGBTQ2S communities, immigrants, refugees, and international students.

Academic research ethics rules can also create tension with community partners.

In the OCOV research study (Our Community, Our Voice Steering Committee, 2016), some community members grew impatient, awaiting approvals from the university research ethics board. The requirement for institutional approval of research partnerships can also seem inconsistent with the principle of co-creation, where the community is allowed oversight in all aspects of the research.

As discussed in the literature (Christensen, 2018; Stoecker, 2008), there are many instances where institutional standards do not match the community's ethical approach, particularly in the area of informed consent for marginalized or vulnerable youth. Yet, significant progress is being made to align institutional and community ethical standards.

For example, A growing number of community-based ethics boards, such as the National Inuit Strategy on Research, are developing standards, practices, and reciprocal agreements with HEIs that align priorities and expedite ethical reviews.

SFU's Vancity Office of Community Engagement partnered with Hives for Humanity to support the development of Research 101, a community-based project that produced resources for ethical research in Vancouver's Downtown Eastside (DTES). This included a resource card on informed consent and a manifesto for ethical research (Empowering Informed Consent: Community Ethics in Cultural Production, Resource Card and Research 101 Manifesto for Ethical Research in the DTES | March 7th, 2019, Launch Event).

Another emerging opportunity is increased training of Indigenous and BIPOC scholars and researchers, with more being awarded tenure track positions.

While there is a long way to go, and it would be wrong to assume that all these scholars are interested in community engagement and research, there is a growing network of Indigenous scholars in this space.

For example, Dr Charlotte Loppie from the University of Victoria is part of the Canadian Institutes of Health Research (CIHR) Network Environments for Indigenous Health Research. Working through the BC Network Environment for Indigenous Health Research (BC NEIHR), Dr Loppie is partnering with BC's First Nation Health Authority (FNHA), the BC Association of Aboriginal Friendship Centres (BCAAFC) and Métis Nation BC to foster "capacity development as well as knowledge sharing and mobilization among British Columbia's Indigenous Peoples" (Loppie, 2021).

We can also look forward to more academic opportunities for Indigenous and BIPOC persons, given the growth in equity, diversity, and inclusion policies at HEIs across Canada and globally. SFU recently hired a Vice-President, People, Equity and Inclusion to provide strategic leadership across the university on EDI initiatives, including faculty and staff recruitment, retention, and engagement.

At the same time, training in community-engaged research techniques will become even more prevalent for community organizations and individuals across Canada and worldwide.

Community-Based Research Canada (CBR Canada) developed the Community Based Research Excellence Tool (CBRET), delivered through workshops (online during COVID), for community participants, graduate students, and interested faculty and staff.

Internationally, Budd Hall and Rajesh Tandon lead the Knowledge for Change (K4C) Consortium for Training in Community Based Research (2015). This train-the-trainer model is part of the UNESCO Chair in Community Based Research and Social Responsibility in Higher Education, a partnership between the University of Victoria and the Society for Participatory research in Asia (PRIA) in New Delhi, India. As of the date of publication, K4C has hosted seven cohorts with 125 participants.

Conclusion

The considerable – and often mutual – benefits that accrue from community engagement and community-engaged research are such that the process is often an end in itself (Dooley et al., 2012). No matter what other goals and benefits are being sought, **engagement supports capacity building in the community and enriches university connection, effectiveness, and impact.** For example, in the OCOV study (Our Community, Our Voice), 11 recent refugees were hired as peer research assistants. These individuals brought important assets, informing the project and enriching the results while also gaining skills and social capital through interactions with the research team and other community members.

All forms of community engagement are important in informing and supporting best practices in community development. But practitioners must remember that there is no single approach or set of procedures to fit every programme. **In both community engagement and community-engaged research, authentic relationships are the primary prerequisite for success, and these take time to build and nurture.**

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The Coming Transformation of U.S. Higher Education

Arthur Levine

Abstract

The United States is experiencing profound, unrelenting, and accelerating demographic, economic, and technological change. The nation's population is changing racially, ageing, moving, and coming from abroad. The country is undergoing a transformation from an industrial to a knowledge economy. New digital technologies have emerged with the power to recast our lives and the world around us.

Change of this magnitude and scope, which last occurred during the Industrial Revolution, is rare. One of its consequences is that all our social institutions, which were created for past times, are compelled to change in order to meet the demands of the emerging order. As a result, U.S. Higher education will once again be transformed as it was during the Industrial Revolution.

New Realities

That transformation will be driven by four profound and jarring new realities, none of higher education's sown making.

1) New content producers and distributors will enter the higher education marketplace, driving up institutional competition and consumer choice and driving down prices.

At the periphery of mainstream higher education, a grab bag of diverse and independent postsecondary institutions, organizations, and programmes, for-profit and not-for-profit— have mushroomed in the past quarter-century. They are knowledge organizations, ranging from libraries and museums to media companies and software makers as well new universities and entrepreneurial start-ups that have entered the postsecondary marketplace, offering content, instruction, and certification. They have abandoned key elements of traditional higher education—emphasizing digital technologies, rejecting time and place-based education, creating low-cost degrees, adopting competency or outcome-based education, focusing on the growing populations under-represented in traditional higher education, offering pioneering instructional designs such as boot camps, and alternative certifications. Coursera offers an instructive example.

Coursera is an online, publicly-traded learning platform company launched in 2012 and currently valued at nearly $3 billion. Today it offers 82 million users more than 4,000 courses and speciality studies, ranging across the fields offered by traditional universities from data science and business to humanities and social sciences (Coursera, 2022).

Coursera differs from traditional higher education in terms of who provides its content, an eye-popping list of more than 200 of the world's leading universities and businesses. Its higher education partners are a veritable who's who of colleges and universities from around the world, including, California Institute of Technology, Columbia, Duke, Ecole Polytechnique, Hebrew University, Johns Hopkins, Moscow State University, Peking University, Princeton, University of Chicago, University of Michigan, and Yale, to name just a very few.

While an impressive roster, what is unique about Coursera is that it offers classes, specializations, and certificates from businesses and non-profits outside higher education. The businesses are leaders in building and supporting the global, digital, knowledge economy, and their practices and products are at the cutting edge in areas such as technology (e.g., Google and Microsoft); finance and management (e.g., Goldman Sachs and PricewaterhouseCoopers) and merchandise and sales (Alibaba and Amazon). The non-profits, which are of equal renown, include the American Museum of Natural History, Museum of Modern Art, World Bank, Yad Vashem and many more.

To understand the potential impact of these new providers, we need to look at what they are actually offering.

There is a Google's Information Technology (IT) Certificate Program. Created to fill labour force needs in the field, the programme consists of a five-course sequence on computer networking, operating systems, system administration, IT infrastructure, and IT security. Students rate each of these classes 4.7 or better on a five-point scale. It's a sub-baccalaureate programme, in a field commonly offered at two- and four-year institutions, worth 12 college credits and awarding a Google badge, which is an accepted employment credential, aligned with professional licensure tests and standards. More than 147,000 students have enrolled in the programme, which Google advises can be completed in six months or less with five hours of study a week for $49 per month. The first month is free, and students commit to only a month at a time (Coursera, 2022).

The number and range of what is being offered is staggering. If we look beyond Coursera at what else their partners are doing, the Coursera programmes are just the tip of the iceberg. For example, in addition to the two certificate programmes Google offers through Coursera, it has 78 more of its own and Microsoft has 77.

On the non-profit side, another example is the American Museum of Natural History, which has its own graduate school, offering a PhD in comparative biology and a Master of Arts degree in teaching. It also provides six-week online courses on subjects such as the solar system, evolution, climate change, and water, for $549 each, with an extra fee for obtaining graduate credit. These courses also qualify for professional development credit for teachers.

With Coursera, the looming issue for higher education is not just the explosion of content but the world-class standing of Coursera providers. Non-elite universities may be particularly at a disadvantage in competing with industry giants. Students will have the option of studying at and obtaining certification from Google, an international powerhouse with the latest technology and top human capital or the usually more expensive, local, regional university. They will have the choice of studying at the American Museum of Natural History or Museum of Modern Art, two of the foremost museums in the world, or a nearby college.

Few of the multitude of new providers will have the stature of Coursera's partners. Nearly all will enrol fewer students than Coursera. They will vary in length, though they predominantly offer round-the-clock access and not be location-specific.

It is not at all clear what choices students will make between traditional and non-traditional providers. However, traditional higher education is undoubtedly facing mounting competition from a mushrooming number of new content providers, and students have dramatically more choices—often at lower cost—in how, when, and where they learn.

2) With near-universal access to digital devices and the Internet, students will seek the same things from higher education that they are getting from the music, movie, and newspaper industries.

In these three industries, consumers chose round-the-clock over fixed time access and anywhere, mobile access over fixed locations. They select consumer rather than producer determined content, individualized over uniform or one size fits all content, and unbundled rather than bundled content—a track over an album or a story over a whole newspaper. They pick low cost over high with the exception of luxury goods. The same will be demanded of higher education.

College students favour these changes. As early as a decade ago, Levine and Dean (2012) found in contrast to traditional higher education, **digital natives preferred anytime, anyplace access to education, rather than set locations and times, education driven by the consumer rather than the institution, and digital over analogue media.**

In addition, Levine and Dean found older adults, largely working women, attending college part-time, sought affordable, unbundled or stripped-down versions of college. When these students were asked what they wanted from college, they asked for convenience, service, quality, low cost, and to be charged for only the services and activities they used. They did not want to pay for facilities they didn't use, events they did not attend, or electives they didn't take.

Here is the point. Students' lives are increasingly filled by competing pressures and demands beyond college; Moreover, Levine and Dean (2012) found a growing tendency, particularly among non-traditional students, to come to college only to attend classes, commuting in just before the start of class and commuting out immediately after. This encourages students to place a premium on convenience—anytime, anyplace accessibility; personalized education that fits their circumstances and unbundling, only purchasing what they need or want to buy at affordable prices.

3) The industrial era model of higher education focusing on time, process, and teaching will be eclipsed by a knowledge economy successor rooted in outcomes and learning.

The shift from teaching to learning and from fixed time and process to fixed outcomes will occur for three reasons. The first is educational. **The current model assumes all students learn the same things at the same time. In reality, if the time and process of education are held constant, student outcomes will vary widely.** This is because different individuals learn the same subjects at different rates. Even the same individual learns different subjects at different rates.

We have an education system with fixed times and processes, not because it is the best or most effective way to educate people but because of the era in which it was created. It is a product of the Industrial Revolution in which production was tied to the clock and production processes were standardized. The Industrial era university mirrors these practices.

Educationally, it makes sense to focus on the outcomes we want students to achieve, what we want them to learn, not how long we want them to be taught. Imagine taking your clothes to a laundry. The proprietor doesn't ask you how long you want them washed. And for a good reason. It's an absurd question. Your only concern is that the clothes be clean when you pick them up, irrespective of how long that takes. The outcome is what matters, not the process. The same is true of education.

The second reason is equity. In the current higher education model, equity means enabling all students to access comparable facilities, professors and programmes for the same period of time. That is, equalizing the time and process of education. However, **real equity would mean making it possible for all students to achieve the same outcomes, not assuring them they will achieve those outcomes but giving them the differential resources they need to have the opportunity to achieve them.** Equity is necessarily about access to equal results, not access to identical processes or time.

A third reason is that the current model requires all education experiences to be translatable into units of time—courses, credit hours, seat time, degrees, and the like. Time is the common currency or accounting system used to evaluate, compare, standardize and record educational experiences. For more than a century, this model worked well for the Industrial era university.

But it will not continue to work owing to the explosion of new content being produced by employers, museums, television stations, software companies, banks, retailers and a host of other for-profits and non-profits inside and outside higher education. They have generated a bazaar of time-based and non-time-based educational content—consisting of course and competency-based programmes; outcome and process-based education; time fixed and time-variable instruction; formal and informal instruction; individualized and uniform experiences; and degree, micro-credential, and non-credential granting education. Even among time-based programmes, some are of such short duration as to be below the credit radar screen.

This is a ragbag of disparate curricular practices, growing increasingly heterogeneous and which cannot be translated into uniform time or process measures. The one common denominator they all share is that they produce outcomes, whatever students learn as a consequence of the experience.

4) The dominance of degrees and "just-in-case" education will diminish; non-degree certifications and "just-in-time" education will increase in status and value.

American higher education has historically focused on degree-granting programmes intended to prepare students for careers and life beyond college. This has been described as "just-in-case education" because its focus is prospective, teaching students the skills and knowledge that institutions believe will be necessary for the future.

In contrast, **"just-in-time education" is present-oriented and more immediate, teaching students the skills and knowledge they need right now, as in "teach me a foreign language, or about pandemics or a new technology right now." "Just-in-time education" comes in all shapes and sizes, largely diverging from traditional academic time standards, uniform course lengths, and common credit measures.** It is driven by the outcomes a student wants to achieve. Only a small portion award degrees; most grant certificates, micro-credentials, and badges.

Since 1799, when Yale offered the first certificate programme for students who studied science rather the more prestigious classical curriculum, certificate programmes, generally sub-baccalaureate in technical

fields and post-baccalaureate in the professions, have become commonplace. A study of four-year institutions more than 40 years ago found that 21% of arts and sciences colleges and 28% of professional schools awarded certificates (Levine, 1978). They are even more common at two-year schools, which in 2018 granted 852,504 associate degrees and 579,822 certificates (Bustamante, 2019).

However, degrees have always enjoyed a far higher status and are regarded as far more valuable credentials.

Several factors are likely to reset the balance between them. First, there is a growing perception that degrees are declining in value in the labour market, which may prove no more than a temporary blip. For instance, a number of marquee employers have announced they will no longer require college degrees for employment, including Google, Ernst and Young, Penguin Random House, Hilton, Apple, Nordstrom, IBM, Lowe's, Publix, Starbucks, Bank of America, Whole Foods, Costco, and Chipotle (Glassdoor Team, 2020).

Additionally, public opinion polls have found that a growing percentage of people believe the value of a college diploma has declined. For example, a 2019 Gallup poll reported that a decreasing proportion of Americans consider a college degree very important—51% in 2019 versus 70% in 2013 (Marken, 2019).

A second cause for a possible reset is that periods of profound change like the present and the Industrial Revolution produce curricular flux. For instance, major changes were made in credentialing during the Industrial Revolution. New degrees were established like the PhD, the associate's degree, and the earned master's degree, previously more honorary than academic. Programmes awarding certificates multiplied, too, particularly after the development of continuing education units in the late nineteenth century. The bottom line is that this is a period amenable to re-sorting college and university credentials.

The third element is that the demand for just-in-time education will grow much larger. The increasing need for upskilling and reskilling caused by automation and the knowledge explosion promises to generate a population seeking "just-in-time education," exceeding that currently enrolled in degree programmes. Moreover, degree programmes are generally discrete, one-time events, while just-in-time is likely to occur repeatedly throughout one's lifetime. As with the Coursera example, the credentials awarded by those programmes will be better aligned with the job market than most degree programmes. "Just-in-time" education will be increasingly anytime, anyplace, consumer determined, individualized, and unbundled. It will do all these things and, by virtue of its scale, normalize such student expectations. At a minimum, degrees can be expected to lose ground to certificates and micro-credentials in the years ahead.

Impact of the New Realities

These four new realities will transform the Industrial era higher education system and establish the template for its global, digital, knowledge economy successor. The emerging model will have these characteristics.

Higher education will be based on learning and outcomes. Competency-based education, independent of time and process, will become the norm. Students will be required to master specified outcomes or competencies in order to earn a credential. The Carnegie unit and credit hour, which are time-based, will give way to competencies mastered as the currency and accounting system of higher education. Certification can be granted for mastering a single competency such as learning a foreign language or achieving a set of related outcomes such as the Google IT competencies. In short, the learner's mastery of competencies will be assessed, certified, credentialed and recorded on student transcripts.

The universe of higher education providers will expand dramatically to include not only traditional institutions but also a far larger number of non-traditional content producers and distributors, including non-profits and for-profits, ranging from corporations and museums to television networks and social media platforms. As a result, higher education content will be available digitally, anywhere, at any time. Students will be able to choose from among a plethora of providers at multiple price points and access content in the format they prefer in both bundled and unbundled forms, degree, and non-degree programmes. The standing of traditional and non-traditional providers will be levelled because competency-based education is source agnostic. It assesses only student learning, irrelevant of how it was acquired.

Demand for just-in-time upskilling and reskilling will dwarf traditional "just-in-case" enrolments, shifting the enrolment balance in degree and non-degree programmes, raising the status of micro-credentials, and spurring the production and distribution of content by non-traditional providers. The pandemic accelerated this because of the tens of millions of unemployed workers it produced.

Assessment will become largely formative, real-time and individualized, seeking to guide students in mastering competencies, sometimes called direct and authentic assessment. Earlier, this was likened to the workings of a GPS. Only the final formative assessment will be summative as it demonstrates the student has mastered the competency.

Certification, at least in the short run, will be a combination of degrees and micro-credentials. The longer-run future of degrees is less certain—a combination of micro-credentials in general and specialized studies may achieve the same results for students as a traditional baccalaureate degree.

Transcripts will become lifelong records of the competencies people achieve throughout their lives and the certifying authority for each.

Higher education will shift from the analogue to the digital; some institutions using digital technology in support of existing analogue programmes; others in parallel to current analogue programmes, and the remainder as replacements for existing analogue programmes. This will occur in all sorts of permutations within institutions as well.

The higher education faculty, whose numbers can be expected to decline, is currently composed of subject matter experts engaged in teaching and research. It will be diversified to include learning designers, instructors, assessors, technologists, and researchers, reflecting the nation's demographics. The competition for this talent both within and outside higher education will be fierce. Talent is likely to overshadow institutions, and with an abundance of competing providers, an agent may be more valued than tenure.

Tuition, which is now largely credit-based, will become subscription-based and tied to outcome attainment, which is Coursera's funding model.

As the higher education system of the global, digital, knowledge economy coalesces, a number of the historical staples of the industrial model will fade away. They will become the equivalent of buggy whips in the automobile age or slide rules in a time of calculators.

For example, in the industrial model of higher education, it made perfect sense to define and develop academic practice around the clock, but in competency or outcome-based education, the clock becomes irrelevant. As a consequence, historical practices such as credit hours, Carnegie units, credit-based courses, semesters, two- and four-year degrees, measuring faculty workload or student status in credits taught or completed lose their meaning and utility. They become artefacts to be discarded in what Henry Adams called the "ash-heap" of history (2008).

A-F grading is similar. It is a comparative measure of student performance relative to peers and the subject matter being taught. However, competency-based education, rooted in absolute standards, is essentially pass-fail. Students have either mastered a competency, or they have not. As a result, A-F grading and the products thereof such as dean's list, class rankings, and graduation honours defined by grade point average will atrophy as outcome-based education gains popularity.

Beyond the loss of familiar practices, **new quality control methods can also be expected to emerge. Because content from a multiplicity of providers will be omnipresent and the source of student learning will be immaterial in outcome-based education, a new kind of educational institution is likely to emerge.** That is, a certifying or validating institution, which does not create or disseminate content, but instead assesses student learning, guides student learning, certifies student learning, credentials student learning, and records student learning. In the short run, one can imagine many such organizations using different definitions of competencies to assess students. As consensus grows regarding those definitions, standards and practices will become increasingly uniform, and the number of such institutions can be expected to decline.

This institution and the shift to outcome-based education will put the current accreditation model at risk. Accreditation, the peer review, quality improvement, and self-policing agency for the academy, comes in two forms—institutional and programme accreditation. Originally created in the late nineteenth and early twentieth century to bring order and common standards to a higher education system lacking in both, accreditation's focus is and has always been on providers, which

are still assessed largely on the basis of the best higher education practices of the industrial era. In this time of change and innovation, accreditors and accreditation are increasingly viewed as being slow, outdated and discouraging of change. This is not surprising because the reason for creating accreditation was to standardize. **Unless accreditation is able to shift its focus from the process to the outcomes of education and from institutions and programmes to students, it will lose its utility.** The time for accreditation to act is short.

Every college and university in the U.S. will be affected by these changes but in different ways. Ten to twenty per cent are likely to close (Korn, Belkin & Chung, 2020). At particular risk are small, private, low selectivity and low endowment colleges in the Northeast, Midwest, and the Middle-Atlantic States, which are demographically challenged and weak financially.

Some colleges and universities will be able to adapt incrementally, particularly wealthy institutions which will have the luxury of time to observe what works at colleges and universities that are forced to change more quickly. Research universities and elite residential colleges will have an advantage here.

The rest of higher education will be disrupted. At greatest risk are regional universities and community colleges with high part-time, working, and older adult populations, the students who are currently leaving traditional higher education and enrolling in rising numbers at lower cost, 24/7 alternative providers.

This is a unique moment in higher education history. Colleges and universities must not wait for the future to happen to them. Policymakers and institutional leaders have the capacity to shape the future of higher education.

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Internationalization and North America's Competing Priorities

Grace Karram Stephenson

Abstract

This report on the internationalization of higher education in North America examines global activities and policies related to HEIs in Canada and the United States. The region is largely defined by the disparate priorities of players at federal, provincial, institutional and individual level – with international education plans reflecting the distinct priorities of each. The recruitment of foreign students is still the dominant government and institutional-level manifestation of internationalisation. However, many HEIs are broadening their strategic mandates to prioritise other aspects of internationalisation. Over the last decade, global activities have been negatively influenced by polarising political figures who have risen to power in the United States (federally) and Canada (provincially). Their influence has altered patterns of student mobility and faculty recruitment. Furthermore, key global crises such as climate change have galvanised academic efforts, creating knowledge diplomacy linkages across the region. New forms of research funding are promoting collaboration with non-HE players to improve institutional impact. While institutional and national competition and revenue generation are still driving factors in internationalisation, new initiatives for peace and understanding are emerging as stakeholders begin to prioritise sustainable higher education for the global community.

Introduction

Internationalisation of higher education in the North American context often centres on the recruitment of full-fee paying foreign students. Higher education institutions (HEIs) across the region have come to rely heavily on the revenue generated from international student tuition fees. As a result, many of the policy, programme and research landscapes focus on the retention and perpetuation of migrant student inflows. However, as with all forms of migration, student mobility is increasingly complex and impacted by global politics and national security concerns.

Beyond the recruitment of foreign students, there are a host of international higher education strategies and programmes which offer an alternative perspective on internationalisation and suggest that governments and institutions in North America are moving away from an exclusively revenue-focused approach. King (2020) called this the "maturation" of internationalisation, represented by a plateau in the competitive scramble for students or overseas programmes. Instead, **internationalisation is being defined by complex questions about the quality and equity** of international initiatives (Sabzalieva, 2020; Stein, 2021).

This report considers these distinct approaches to internationalisation by examining the implications of student recruitment, geo-politics, the Covid-19 pandemic and calls for equity in Canada and the United States of America (USA). Although the geographic definition of North America includes three countries (Canada, Mexico and the United States), Mexico is commonly accepted to be part of the Latin American region in political analyses. This report therefore refers to North America as a region of two countries: Canada and the USA.

are of equal renown, include the American Museum of Natural History, Museum of Modern Art, World Bank, Yad Vashem and many more.

To understand the potential impact of these new providers, we need to look at what they are actually offering.

There is a Google's Information Technology (IT) Certificate Program. Created to fill labour force needs in the field, the programme consists of a five-course sequence on computer networking, operating systems,

Higher Education Policy Landscape in North America

Canada and the USA are both large landmasses of approximately 9.75 million square kilometres. Canada

has considerably less habitable land than its southern neighbour and is home to only 38.5 million people, 66% of whom live within 100km of the border with the USA (Government of Canada, 2019). Canada has 223 universities (public and private) and 213 technical-vocational colleges or institutes (CMEC, 2021).

In contrast, the USA has a population of 332.5 million (US Census, 2021). There are 3,982 degree-granting institutions in the USA and numerous vocational institutions and trade schools (USNews, 2022). Both countries have a combination of public and private HEIs, with the majority of Canadian HEIs being publicly funded in comparison to a relatively small private sector. The USA has a robust private sector as well as large state-level public institutions, including both universities and community colleges.

The defining feature of the political systems in both Canada and the USA is decentralised government, with Canada's 10 provinces and the USA's 51 states having distinct responsibilities from those of the national-level government. Education is one responsibility clearly demarcated for the provincial or state parliaments and this includes higher education (Jones, 1997). Similarly, higher education systems in both countries have strong, Anglo-heritage origins that contribute to a further diffusion of authority to the institutions in the case of universities (Clark, 1986). Technical-vocational institutions, on the other hand, often reflect government and industry priorities, mainly at provincial level, as they address the need for skilled labour (Wadhwa & Jha, 2014).

The Limits of Government Leadership

The significant decentralization in higher education governance has implications for internationalization policy and programmes. Specifically, federal governments play a very minimal role in policy or programme development, but act as an essential gatekeeper in terms of visas and immigration as it relates to the recruitment of foreign students (Tamtik et al., 2020). Federal governments have released international education strategies, but research suggests that institutions are not led by these documents when developing their own internationalization programmes. Instead, government strategies summarise and advance ongoing activities rather than setting a vision for innovation (Helms et al., 2018).

In terms of the internationalization of research, federal governments do provide incentives related to global activities where research funding is concerned. Federal research councils are able to impact the global networks of researchers by establishing funding priorities that require international collaboration (Karram Stephenson et al., 2020). This is shown to increase publication rates, which in turn improve global rankings (Metcalfe, 2012). Although influential in building international research networks, this is still fairly minimal as a driver of internationalization and institutions are still the main drivers of internationalization compared with federal government players (Helms et al., 2018).

Although provincial or state governments play a more active role in higher education than their federal counterparts, most have limited their involvement in internationalization to the recruitment of foreign students. Provincial-level governments are instrumental in drafting international education strategies and many provide network support for institutions as they recruit foreign students (Ontario, 2022).

Global Research Collaborations and Knowledge Diplomacy

At institutional level, cross-border research collaboration is a significant part of internationalization in North America. HEIs and their international partners are working to tackle many of the large-scale crises that transcend borders. **Climate change, human trafficking and over-fishing are just some of the cross-border challenges on which researchers are working to fix through global collaborations** (BPRI, 2018; IOF, 2022; UC3, 2022). Knight (2019) identified these activities, in which universities collaborate to find solutions to global challenges, as knowledge diplomacy. North American scholars have contributed significantly to knowledge diplomacy through partnerships within the region and overseas. Increasingly, government funding agencies are designing partnership grant opportunities that require collaboration between more than one institution, as well as community partners for this type of collaborative problem-solving.

Foreign Student Recruitment

For the last 30 years, the recruitment of **full fee-paying foreign students has been the highest internationalization priority** for institutions and provincial governments in North America (El-Assal, 2020; Greene & Kirby, 2012; McCartney, 2021). Between 2015 and 2019, the United States maintained its position as the most successful recruiter of international students. In 2020, the number of foreign students studying in the USA was reported at more than one million (Atlas, 2022).

Canada has steadily increased its share of international students as well, moving from the 7th to the 3rd most popular country in the same time period (CBIE, 2020). In total, North America received more than 1.2 million students in 2015, a number which had grown to 1.4 million by 2019.

The financial implications of student recruitment are significant for both institutions and the North American economy. It is estimated that international students contribute more than 40 billion dollars to the region when tuition, housing and living expenses are considered (Atlas, 2022; CBIE, 2020).

Although research suggests that some institutions are moving away from a strict focus on student recruitment in their internationalization strategies, this mainly applies to large research-oriented institutions that have multiple sources of income. For smaller HEIs with an undergraduate focus, the reliance on international student tuition fees to bolster declining revenue is a continuing reality (King, 2020).

International Relations and Political Polarities

A number of factors have altered foreign student flows over the last ten years, the most significant of which were political fissures, both regional and global.

In 2016, the election of President Donald Trump in the USA had far-reaching impacts on internationalization as it relates to student mobility. Early in its administration, the Trump government implemented a travel ban on students from seven Muslim countries (Iran, Iraq, Libya, Somalia, Sudan, Syria and Yemen) (CNN, 2017). Although the banned countries were not among the top sending countries of foreign students to North America, the implementation of the travel ban diminished the general image of the USA as a welcoming nation (Van De Walker & Slate, 2019). This resulted in the USA receiving fewer student applications than expected. It also had the effect of seeing Canada's numbers increase slightly in what was known as the Trump Bump, as students chose to travel to Canada instead of the USA (Sabzalieva, 2020). Some analysts argue this corresponds with Canada's rise to third place in the number of international students globally. As a region, however, student numbers remained steady.

Canada, however, has not been without its own controversial political figures. The election of several conservative provincial governments has led to a decrease or restructuring of funding for higher education and entrenched the reliance on international students as a funding source. More recently, the 2022 Canadian "Convoy" uprising led to border closures and an occupation of public spaces in the capital city of Ottawa. This event may have lasting repercussions on the image of Canada as a peaceful study destination.

Beyond the internal politics which threaten the welcome of international students, **turbulent international relations have also led to alterations in student mobility flows.** For Canada, a significant cessation of foreign students occurred after relations with Saudi Arabia deteriorated when Canada's federal government criticised the Saudi legacy of human rights abuses in 2018. The King Abdullah Scholarship, which had covered the living costs and tuition fees of these students, was cancelled. Initially, analysts anticipated that 7600 undergraduate students would be removed form Canadian HEIs within a matter of months (Hounsell, 2019). Fortunately, concessions were made for graduate students, many undergraduate students made other arrangements to continue their studies and only 2000 students were forced to leave.

Most concerning for HEIs that depend on the revenue from international students is the ongoing trade conflict between the USA, Canada and China. In 2018, Canadian authorities arrested the CEO of Huawei International in support of a USA complaint against the company. Two Canadian officials were then arrested in China and a stalemate ensued. Since Chinese students represent 40-60% of international students going to North America, there are concerns that the heavily reliance on these students is unsustainable in the face of diplomatic breakdowns.

Ultimately, **political fluctuations in North America have had a significant impact on the internationalisation of higher education as it relates to student mobility.** This uncertainty raises questions about the primacy of North America as a leading destination for international students in years to come. It also suggests that governments, while being limited in setting the strategic goals for internationalization, can in fact have a strong negative impact when international relations are threatened.

The Impacts of the COVID-19 Global Pandemic

More recently, the Covid-19 pandemic has also had a significant impact on student mobility. In March 2020, the Covid-19 virus arrived in North America and required massive shutdowns of in-person classes in higher education. At the time of writing this report (March 2022), most HEIs in North America had resumed in-person activities for undergraduate classes and research laboratories. Where in-person courses were not available, governments were working to have distance courses count toward immigration points (Immigration, 2020).

Restrictions on international travel were a significant result of Covid-19 virus prevention and had a significant impact on the internationalization of higher education. It is estimated that in the USA there was a decrease in international student enrolment of 16%, with a further reduction of 43% in new enrolments (NAFSA, 2020). This represents a loss of almost 10 billion USD for local economies (NAFSA, 2021). In Canada the pandemic had similar negative effects, with a 17% decrease in enrolment and upwards of 7 billion CAD in lost revenue (Government of Canada, 2021).

The impact of the pandemic response on international research collaborations was also significant in the short term, with most conferences being cancelled in spring 2020. However, by autumn 2020 most organizations had made the transition to online networking, which has remained strong over the last 18 months. Three potential implications for internationalization can be seen. First, the new reliance on online collaboration has significantly decreased the cost and ease of international research collaborations in disciplines that do not require the sharing of infrastructure. Second, however, for disciplines in which international collaborations require shared infrastructure, distance has significantly delayed research programmes with international partners. Lastly, for professors in the early stages of their careers as well as graduate students, the lost opportunities for international collaborations that are afforded by conferences has significantly altered their career patterns as they lack access to in-person networking.

International branch-campuses (IBCs) founded by North American HEIs have also been affected by the Covid-19 pandemic. Most institutions also required virtual learning for their branch-campus and this resulted in the nature of the relationship between the home institution and branch-campus changing throughout the pandemic. Most significantly, many branch-campuses improved their student-care programming to model that of the home campus, adding services like mental health counselling which had previously been absent from cross-border programmes (Merola et al., 2022).

Ultimately, the implications of the Covid-19 pandemic for the internationalization of higher education will continue to unfold over the coming years. Important research is underway to capture the shift as organizations like the American Council on Education (ACE) in the USA lead the way with large-scale surveys on how internationalisation activities have responded to Covid-19 restrictions (ACE, 2022).

Equity, Race and Indigeneity

Beyond student mobility, **internationalization in higher education is also being re-defined by student activism and demands for equity.** Although HEIs in North America have regularly been home to student activism, the nature of activism in the last five years has had distinct international connections. The most impactful movement, on an institutional level, is the call for name changes at well-known institutions. Student protesters have demanded that administrators change the names of buildings and institutions or remove monuments that are linked to founders with histories of oppressive behaviour, often including slavery or indigenous genocide.

These student movements in North America are part of a global network which began in South Africa called *Rhodes Must Fall*. South African students initiated this

protest to remove references to Cecil Rhodes, whose colonial legacy has had a far-reaching impact. The movement was picked up by students at Oxford University in the United Kingdom where Rhodes' statue stands. In connection with this movement, North American students have demanded name changes at many faculties or institutions, including Harvard in the USA and Ryerson University in Canada. The global connections of student activism present a new aspect of internationalization that is extra-curricular and emanates from the student level, yet has a significant impact on HEI identity and institutional change.

Race-relations at HEIs in Canada and the USA are currently being redefined by two social movements in broader society: *Black Lives Matter* (BLM) in the USA and the *Truth and Reconciliation Commission* (TRC) in Canada. The BLM movement began in 2020 after the tragic murder of a black man by police in the American state of Minnesota, and resulted in protests across campuses in the USA and Canada. New scholarly concepts such as white privilege or *micro-aggression* echoed from this event and led to new priorities in academic recruitment, with the inclusion of underrepresented communities and new forms of equity training for academic workers.

In the Canadian context, the discovery of unmarked graves of indigenous children who were forcibly placed in residential schools led to strong displays of public grief and calls for accountability in line with the Truth and Reconciliation Commission, a national inquiry with recommendations on how to restore peace with Canada's indigenous communities (Munroe, 2021). The framework of "Truth and Reconciliation," as a national restorative process, is another example of a movement with international ties that started in the global South and has been adopted by policymakers and academics in North America.

Both BLM and TRC have raised questions about the supposed diversity of internationalization. Scholars have suggested that cross-border movement is not a prerequisite for inter-cultural activities in nations like Canada and the USA, where significant diversity exists within the population (Sabzalieva, 2020). Rather, significant work needs to be done locally to improve the representation of racialized groups in HEI campus communities. Many professors and students have also built North America-wide networks of solidarity in response to these movements. One such initiative is the Critical Internationalization Network, an example of a community of scholars who are attempting to redefine current global university trends with equity at the centre.

Conclusion: The Potential of Internationalization

In conclusion, governments, HEIs and students in North America have many overlapping and competing priorities related to the internationalization of higher education. These range from student recruitment to research collaborations and activism for equality. Unfortunately, all of these efforts are housed within a global political framework that is increasingly fragile. Global health crises, trade wars and populist movements threaten both the mobility of students and the research partnerships that have been at the centre of North American internationalization. Amid this fragility, however, student activism and knowledge diplomacy present a new picture of internationalization as a way forward in a fragmented world, as the global connections of students and researchers contribute to more equitable internationalization with the potential to tackle major global challenges.

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3.3 Asia Pacific

Towards Societally Embedded Higher Education: A Panoramic Overview of Asia & Oceania

Rajesh Tandon and Niharika Kaul

Abstract

The social commitment of higher education has gained much public attention during the pandemic in the Asian region. With scientific research under deep public scrutiny, the societal relevance of teaching and research in higher education institutions is now being publicly debated. Several strands of this discourse go beyond the traditional service learning or co-creation of knowledge methods. Finding contextually relevant knowledge solutions for diverse socio-geographies around the region has been focused upon in community-led actions for adapting to climate impacts, increasing at a phenomenal pace within the region.

Given the huge diversity of the region, the nature and profile of the higher education system varies greatly. Yet, the pace of enrolments and demand for inclusion of the hitherto excluded has been growing. Greater attention is demanded to bring higher education institutions into a life-long learning framework, so that new ways of linking formal learning with life stages of populations can be devised. Several such categories comprise the elderly, the migrants, the displaced, and refugees, given their increasing numbers.

The region is also finding a disconnect between the 'official' language of higher education and local languages in communities and regions. Implanting European institutional models and languages in higher education on the diverse Asian territory, with a diversity of indigenous communities and languages, is now being challenged through new ways of learning. The disruption of face-to-face education due to the pandemic in the region has forced the creative emergence of many hybrid models.

This paper, therefore, will use illustrations from the higher education system and institutions in the region to demonstrate the directions of the future. Moving towards re-positioning the public purposes of higher education to be more directly embedded in local societies.

Introduction

"In HEIs, what is taught, what is researched and what is served derive purpose from being responsive to the context" (Hall & Tandon, 2021; 293).

Higher education institutions (HEIs) today serve a critical role in preparing the next generation of socially responsible individuals, at a time when global crises like the Covid-19 pandemic and climate change have increased structural, social and economic inequalities globally. In order to meaningfully contribute to addressing societal challenges and achieving the 2030 Agenda for Sustainable Development, HEIs have to produce local knowledge solutions with communities around them. Becoming responsive to local challenges requires making their teaching, research and service missions locally rooted and contextually situated (Tandon, 2018).

In a sense, there is greater demand and need for Higher Education (HE) systems to become far more embedded in the societies they are part of than has been the case lately. Over the past four decades or so, the rapid expansion of the knowledge economy around the world has implied stronger global inter-connectedness of HEIs and a stronger focus on producing talent, entrepreneurs and patents, all based on the perspective of a knowledge economy. This trend has been most dominant in the Asian region, where engines of the knowledge economy such as China, Taiwan, Korea and India are global suppliers of knowledge products and talent (ADB, 2007).

Further separation of HEIs and the society they are located in has been fuelled by global competition and ranking systems that were restricted to the USA, UK and Australia until recently but have spread rapidly to many Asian countries, led by China, India and other English language HE systems. Pressures to compete with rankings have resulted in further separation of HEIs and the society they are located in (Hall & Tandon, 2021). The

whole current system of global rankings is inherently exclusionary:

> "the notion of a one-size-fits-all, competitive framework is inappropriate, in that it is not in the best interests of a collegial and diverse higher education. It matters not how 'inclusive' the rankings are, how multifaceted and complex they may be, or the extent to which they allow for culturally different models of higher education to be included and celebrated. Rankings are wrong because they are, by their very nature, othering" (Hall & Tandon, 2021; 71).

Global university rankings are designed to preserve colonial hegemony and retain power and control over production and use of knowledge in the hands of the privileged few:

> "Those 'top' universities, too, are predominantly white in terms of their staff and students, due to their particular positions within those countries' institutionally racist education systems. Furthermore, rankings implicitly support epistemicide (Santos, 2016) through their continued promotion of exclusive and culturally White forms and structures of knowledge production and dissemination" (Hall & Tandon, 2021; 74).

For HEIs to be inclusive and shed these colonial practices, there needs to be a systemic change in understanding HEIs purposes, and the patterns that determine their value, governance systems and funding (Hall & Tandon, 2021).

As the world begins to re-construct a fairer, safer and more just society after the pandemic, it is beginning to be realised that HE systems have to be transformed significantly so that HEIs are embedded in their societies and responsive to them. The demand for a rapid increase in enrolments in HEIs in the Asian region is being fulfilled through mindless multiplication of standard models of teaching and research, irrespective of local, regional and national societal needs and challenges. Within this trend of greater societal expectations from HEIs to re-focus their societal contributions in the post-pandemic era, several new directions are emerging around the world. In the Asia/Oceania region, many such efforts to transform HE systems and HEIs are beginning to show promise. This article provides a panoramic overview of such initiatives in Asia & Oceania.

Co-creating Knowledge

One of the growing expectations from HEIs is to produce knowledge in partnership with other social actors such that knowledge solutions can be acted upon to improve the socio-economic conditions of communities. Over the past several decades, research processes in academia have become narrowly defined by disciplinary boundaries and detached from societal realities (Tandon & Pandey, 2019). New approaches to producing actionable knowledge are also promoted through climate change adaptation solutions, such as the Adaptation Research Alliance (ARA). The ARA is a collaborative endeavour to scale up funding and capacity building for action-oriented research that facilitates climate change adaptation, especially in developing countries (ARA, 2021). In particular, it aims to overcome some of the major barriers that action research faces today in terms of a disconnect between research and the interests and needs of the most vulnerable sections. The ARA emphasises the transdisciplinarity of research and its co-production through joint efforts:

> "Research is transdisciplinary, collaborative (South-South and North-South) and co-produced from the outset with multiple stakeholders and users (local and international partners, grass-roots organisations, decision makers, and the private sector in addition to researchers). Dominant traditional research practice often excludes grass-roots actors. Research processes that enable authentic inclusion of many voices and sectors from the outset have been shown to enable accessible and actionable solutions and meet the needs of those most vulnerable to climate risks" (ARA, 2021; 2).

Co-creation of knowledge is undertaken when research is framed contextually, in partnership with local actors and community members living in that region, who face those challenges on a daily basis and are able to co-create sustainable solutions to deal with those challenges. In Brazil, a national movement transformed into a network of universities and anti-poverty social movements through the co-production of knowledge, as explained below:

> "Co-creating grassroots knowledge from below has been at the heart of this social movement/network that has resulted in changes to laws, creation of cooperatives and more" (Hall, et al., 2015; 10).

To address inequities in academic knowledge production, community-based research and community-based research partnerships are key mechanisms that can enable a mutually beneficial relationship between communities and academia (Hall, et al., 2015). They view the knowledge of community leaders, indigenous communities, and other community stakeholders as valuable to the research process, and treat them with respect (Tandon et al., 2016).

For example, the Mizan K4C Hub, located at Universiti Sains Islam Malaysia (USIM) has been working with the Orang Asli Indigenous Communities. Over the past few years, they have used community-based participatory research methodology to understand their experiences and challenges in their daily lives. Researchers from the USIM built trusting relationships with the community over time, and undertook a rapid study with them. The findings were used to advocate for policy to support the communities' loss of livelihood by presenting it to the Malaysian Human Rights Commission (Suhakam) (Kaul, 2021).

Many HEIs are beginning to practice multi-disciplinary research triggered by the need to find community-driven solutions during the pandemic. All study disciplines have the potential to significantly contribute to addressing challenges in different socio-ecological contexts and politico-economic systems (Tandon, 2017). This means that every problem can be looked at from several dimensions, and instead of dividing study topics into narrowly defined fields, different disciplines must work together through mutual sharing and learning strategies to understand the topic holistically.

Several similar stories have emerged in the region. During the pandemic, Universiti Putra Malaysia (UPM) produced a 3-D Face Shield through the involvement of the Faculty of Engineering and the Faculty of Design and Architecture in a cross-disciplinary initiative. Such endeavours made UPM a socially responsible university that could provide contextual solutions for problems that the local communities faced during the pandemic (Talib, 2020).

Similarly, Pandit Ravishankar Shukla University (PRSU) conducted research to study the impact of Covid 19 on informal female workers and their socio-economic conditions, health and psychological conditions in Chhattisgarh, India. The research findings suggested that care work had increased for them; they faced increased domestic violence, not only at the hands of their husbands but from their children and parents-in-law; and lost their livelihoods overnight. In this manner, PRSU was able to co-create actionable knowledge by partnering with the women in their local community (NU, 2021).

Different innovative strategies have emerged within Community-based Research (CBR) for co-producing contextually relevant knowledge that responds to the needs of the communities which participate in them:

> "Participatory theatre, for instance, aims to combine entertainment with an exploration of attitudes and to share knowledge in order to stimulate positive social changes" (Tandon et al., 2016; 17).

Another creative example of CBR methodology is 'The Saree Project', an arts-based data collection method used by Martha Farrell Foundation (MFF) with female domestic workers in India (MFF, 2020). The Project involved these women writing/drawing/painting their experiences of sexual harassment on pieces of cloth and stitching the pieces onto a saree that is one of the traditional Indian garments worn by women, including the women domestic workers in the region.

Therefore arts-based research has gained popularity in academia, especially since it fosters co-creation of knowledge, learning and teaching each other, involving *"people as whole human beings"* (Tandon et al., 2016).

In several countries, new HE policies are beginning to recognise the societal relevance of valuing local knowledge and the use of community-based participatory research (CBPR) in training the next generation of researchers. The National Education Policy of India, launched by the Government of India in July 2020, has now mandated a compulsory course on community engagement and social responsibility. As a part of this policy, a programme for building the capacity of Master Trainers in CBPR has been launched recently (UGC, 2021).

In Indonesia, the Ministry of Religious Affairs (MORA) has mandated community partnership for all Islamic Higher Education Institutions in the country. These principles promote participation, empowerment, inclusiveness, gender equality, environmental care, accountability, transparency, and sustainability. Community service planning is undertaken through preliminary research or using existing research emerging from learning processes, for integration of community service with the other two university missions (dharma) of research and teaching. This is one of the most promising examples of integration of research with the teaching mission in the region (MORA, 2014).

Likewise, the Māori principle of 'Ako' is central to knowledge and learning in New Zealand. 'Ako' means both teacher and student; research training sessions emphasize relationship-building and acknowledge the time needed to do so; these concepts are fundamental to a Māori ontology and their inclusion in training help ensure its relevance. Additionally, the broad spectrum of learners that engage with Ako present a rich opportunity for knowledge-sharing in such research training sessions; in this sense, the principle of Ako (people as both teachers and learners) is made evident (Tandon et al., 2016).

An equally powerful example of integrating the three missions of HEIs can be found at Visva-Bharati Santiniketan in India. Visva-Bharati Santiniketan, a university set up by Nobel Laureate Rabindranath Tagore more than a hundred years ago, has been undertaking PhD field research toward improving local community conditions. The partnership approach to research and teaching at the university is best manifested through a long-standing tradition of inviting the local community to enter the campus for continuous interactions through several festivals, including "Poush Utsav", Holi Festival and various "melas" hosted by the university that allow for local artisans and craft persons to sell their handmade crafts to people. (Hall & Tandon, 2021).

Finally, the 'Kampus Sejahtera' or 'balanced campus' initiative at USM is based on the Malaysian philosophy of maintaining balance in research and teaching with the surrounding society. USM believes that a balanced living in all aspects of human life, from spiritual to physical, intellectual, cultural, ethical, and environmental, leads to a balanced society, an approach that is integrated into its research and training practices (Hall & Tandon, 2021).

The above examples illustrate how several HE systems in different countries of the region are beginning to re-imagine their cultural and spiritual contexts within which the core research and teaching functions of HEIs can be integrated. This shift away from a colonial, standard, one-size-fits-all approach to defining HE systems is making the possibility of societal embeddedness of HEIs more feasible.

Locally rooted teaching and learning

A core function of all HEIs is teaching. Current conversations in HE policy circles in many countries of the region are beginning to promote such teaching in an engaging manner, where students can explore the relevance of theories and concepts in the real world of their local and regional societies and contexts. While earlier practices of engaged teaching were limited to a few social science disciplines, there is now an increasing trend to make such practices institution-wide. Recent mandates by University Grants Commission (UGC) in India encourage such engaged teaching for all faculties and courses (UGC, 2020). Many creative ways of engagement with local communities are evolving, initially based on the formats of 'service-learning' practised in other regions.

A major push for service-learning as integral to all teaching in the region has come from United Mission Board. The United Board values the intellectual, social and spiritual sensitivity that service- learning inculcates in learners. It approaches service-learning beyond the idea of outreach; service-learning is seen to integrate the community's knowledge and needs with student action in the field that fosters learning.

One example of service-learning facilitated through such partnerships is the "Color Your Dreams" project initiated by the faculty of Architecture, Van Lang University in Vietnam, to teach skills and give inspiration in using acrylic and architecture models for hearing impaired children in Hy Vong Binh Thanh School for Hearing-Impaired Children. The programme is initiated as students from the university work with pupils over ten weeks, where they learn and practice using acrylic and models, stone material and outdoor activities for creating artwork. Students at the university learn how to communicate with people with disabilities, and train in their area of study, as well as do group work, project management and lesson planning (Vietnam Campus Engage, 2020).

Similarly, Dagon University (DU) in Myanmar initiated a service-learning programme in collaboration with the United Board, which intends to educate learners intellectually, spiritually and ethically. The University staff also developed the human resources needed for service-learning. It held a three-day service-lear-

ning workshop for facilitators, as well as a follow-up session. The United Board supported some University staff in participating in the "Learning from Yolanda" international service-learning project in the Philippines and facilitated an introduction to Silliman University's service-learning programme as a source of ideas and models for DU (United Board, 2016).

Lady Doak College in Madurai, India, has exemplified how a course on culture and languages can incorporate service-learning as an integral component of the curriculum. The course acquires its distinctiveness from its emphasis on the service-learning component. Through building an understanding among learners of the service sector in India, orientation visits to service agencies and planned service-based activities in two service sites, learners understand community development and gain a practical understanding of theoretical concepts related to human rights, social sciences and other academic subjects through the process of service-learning (International Study Centre Lady Doak College, 2021).

In the region, a large number of hitherto excluded, new generation HEI students are not able to pursue further education because much of the teaching takes place in English or other dominant national languages. The use of local languages in teaching is beginning to gain greater acceptance in many HEIs in the region. The University of the South Pacific is one such example; a regional university spread over 12 countries, with a central campus in Fiji; this HEI explicitly embraces local culture and knowledge systems in its foundational vision and values, "Pacific values of inclusive family, participatory & open dialogue". All undergraduate students take a compulsory course in Pacific culture, and many credit-based courses are taught in Pacific languages.

Several countries in south and south-east Asia are also 'revisiting' their language of instruction practices in order to enable inclusion and greater learning competence. It is interesting to note that many East Asian countries, with a long history of enormous technological and economic enterprise, have historically promoted the use of mother tongues in HEIs...China, Korea, Japan being best examples of the same.

Mainstreaming life-long and life-wide learning in higher education

As the pandemic has created more stark divisions in accessibility to education globally, higher education institutions have a responsibility to ensure no one is left behind. Adult and lifelong learning principles form the foundation for building an inclusive and diverse learning ecosystem in higher education institutions:

> "Like education in all domains, rather than being reactive or adaptive (whether to change in labour markets, technology, or the environment), adult education needs to be reconceptualized around learning that is truly transformative... Participation and inclusion go hand-in-hand with emancipatory visions of adult education, which includes an appreciation of informal learning – the knowledge and capabilities acquired outside formal schooling settings. Adult education policy will need to recognize informal learning across the lifespan as part of prioritizing inclusion and participation" (UNESCO, 2021; 114, 115)

A multi-level entry system of education, where adults from different age groups and backgrounds can enter academic courses at different levels of accreditation, is the need of the moment. Vocational education and training need to be mainstreamed in higher education institutions instead of functioning as a separate field for skill upgradation. It is necessary to look beyond the prism of skilling; it is a means of valuing experiential knowledge and respecting diverse forms of knowledge. The HEIs can create systems for 'recognition of prior learning' such that practical knowledge can be certified and access to higher education is enabled (Kaul & Tandon, 2020).

One of the largest sections of hitherto excluded 'students' are senior citizens. As post-retirement and early retirement careers and interests get articulated by the elderly (whose life span could be nearly 20 years after retirement), a nationwide system of HEIs was launched in China some decades ago. A range of Senior Citizens' Universities (SCUs) emerged in China as the ageing population in the country expanded. These universities offer the elderly specialised courses covering sports, recreational activities, health, and technology, among other subject areas. Community-based teaching

centres have also been established in China, enabling the elderly to attend universities near their houses. The elderly are repositories of experiential knowledge, and through these academic courses available for them, they can build on their experiential knowledge and enrich their and others lives further (People's Daily Online, 2021).

Another interesting development triggered by the pandemic is closer linkages between HEIs and community education centres. Historically, HEIs have operated without links with educational centres that served other sections of society. This linkage is already showing promise, as exemplified by the use of community education in China during the pandemic. The East China Normal University founded Shanghai Municipal Institute for Lifelong Education (SMILE) as the first research institute for lifelong education in China. SMILE's work on how community education promotes community development proved that community education was critical in helping community residents cope with the Covid-19 crisis. The process of caring and connecting people's hearts and minds during the crisis by colleges in certain districts in Shanghai was very useful for those communities. Community support and linkages helped maintain confidence and a sound mental state among residents and facilitated joint efforts to fight the pandemic at an individual, family and community level. They provided a path for residents to *learn to live* and prepare for the crisis (Li, 2020).

Opportunities for education and learning for other sets of displaced ('displaced from their liberty') people are somewhat limited in the post-secondary education system. One such category is those imprisoned at an early stage of their life, not being able to acquire skills to return to a meaningful life of dignity in society. Some HEIs in the region are actively creating educational opportunities for prisoners, as seen through the 'College Education Behind Bars' programme in the Philippines. The University of Southeastern Philippines (USeP), the Bureau of Jail Management and Penology (BJMP) and the Social Entrepreneurship Technology and Business Institute (SETBI), a non-profit organisation, are conducting this programme to provide educational opportunities to persons deprived of liberty (PDLs) while they are detained at the Davao City Jail.

Once the PDLs are admitted to the course after an interview and entrance exam, they can proceed with their four-year college education, through the academic courses complemented with a rehabilitation programme. In addition, parolees undergo a probation period where they maintain contact with the SETBI team, who connect them to potential employers. This programme not only recognises the potential that prisoners can have to contribute constructively to society, but also as knowledge holders who should be treated with dignity. At the same time, it teaches the instructors to use innovative means to enhance learning within a drastically different environment from what they are used to (Zafra, 2021).

Forced migration, climate impacts (floods, droughts, cyclones, fires, etc.) and wars continue to displace a large number of communities from their own 'homes'. Such forcibly displaced populations are increasing within this region too. Many become 'refugees' in their own lands; many move to other jurisdictions; some become refugees; many others live as 'refugees', seeking shelter in different cultures and unknown communities. Education opportunities are rather rare for such populations, as they face constraints of language, access to formal educational institutions for continuing education and upgrading their skills to become productive in the new context. An interesting example from the region is an initiative by the University of Technology Sydney's (UTS) faculty in Australia and Cisarua Refugee Learning Centre (CRLC) in West Java, Indonesia, for conducting teacher training both digitally and on-site, and for conducting research together. The CRLC was started in August 2014 by a small group of refugees and is entirely refugee-led. Having partnered with CRLC, perceptions and myths about refugees being dangerous or helpless have been altered through a continued, mutually trusting relationship between HEI faculty, researchers and refugee communities (UTS, 2019).

Conclusion

Higher education in the Asia/Oceania region is now at a crossroads. The national HE systems are under pressure to focus more clearly on local and regional linkages after the pandemic. With greater attention to further policy support to local economic enterprises, circular economy and efficient use and regeneration of natural resources, HEIs are being encouraged to orient their teaching, research and service missions and related activities to local societal contexts, challenges and opportunities.

The examples presented in this article illustrate three critical ways in which HEIs are demonstrating increased societal embeddedness. Enhanced demands for local knowledge solutions are encouraging co-creation of knowledge in partnership with many social actors, local communities and local governments. A new generation of researchers are learning these methodologies of community-based participatory research to facilitate the co-creation of knowledge. The use of local languages to promote greater inclusion of learners as well as understanding local knowledge systems is also gaining greater momentum in the region, as several examples illustrate. Life-long learning opportunities for hitherto excluded sections of society has also become a priority for several HEIs and is also being incentivised through national policy support.

The dynamic HE systems of this region are undergoing important changes that may further embed teaching and research into the aspirations and challenges of local communities, regions and societies. This may indeed make HEIs even more relevant to local societies and may generate more public support for them.

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The Future of International Higher Education in East Asia

Futao Huang

Abstract

The purpose of this article is to argue about the future of internationalisation of higher education (IHE) in the principal East and South-East Asian countries. The article begins with a brief introduction to the main IHE changes in the principal countries in the region from the late 19th century until the end of the 1980s. To continue with the general trends and outcomes of HEi in the principal countries in the region. The article concludes by arguing that if these Asian countries aim to achieve a brighter future in IHE, they need to make tremendous efforts to work together to promote national economic prosperity and development, create a stable and peaceful environment in the region, foster academic systems with national distinctiveness, global attraction and competitiveness, make more favourable institutional governance arrangements and establish global centres of learning or excellence.

Introduction

The internationalisation of higher education (IHE) in Asia has gone through several phrases since the 19th century, when many countries began to build their modern higher education systems by learning from Western models. Like other regions, radical changes have taken place in IHE in Asia since the early 1990s. While more similarities can be found in the region in recent years, differences in the understanding of IHE, its related policies and strategies and the approaches to it are also obvious and considerable among the countries and systems in the region. With respect to the study of "internationalisation in higher education," although the past decades have seen a huge and multifaceted range of literature interpreting the term, most of the existing research is concerned with specific themes or aspects of IHE in one country or a small group of countries, and a comprehensive description of IHE at regional level is still hard to find. The purpose of this article is to argue what the future holds for IHE in the region, with a focus on the main East and Southeast Asian countries. The section below offers a brief introduction to the main changes that took place in IHE in the main countries in the region from the late 19th century to the end of the 1980s. The third section aims to depict the general trends and outcomes of IHE in the main countries in the region. The article concludes by discussing the future of IHE and the potential challenges facing IHE in Asia.

The concept of IHE is not only an inherently controversial term, but also a changing notion and perception. For example, some researchers suggest that IHE basically includes internationalisation at home and internationalisation abroad. The former refers to the acceptance of international students and academics, hosting international conferences, integrating international perspective and content into teaching and research activities, and the use of foreign languages in both teaching and research. The latter mainly involves transnational and borderless education, as well as cross-border education (Crowther et. al., 2001). Further, Knight claims that "internationalisation at national, sector and institutional level is defined as the process of integrating an international, intercultural or global dimension into the purpose, functions or delivery of postsecondary education" (Knight, 2008).

This article proposes that "IHE" is primarily concerned with the process of undertaking exchange activities, ideas and values in higher education and research in different countries and cultures. Its main forms cover the cross-border movement of students and academics, educational programmes and campuses, the provision of English-taught programmes in non-English countries, and the quest to enhance the international and global competitiveness of national higher education and research.

In the article, examining all the nations in Asia, even those in East and Southeast Asia, would be risky and indeed impossible. There are many reasons for this. First, compared with Europe, East Asia not only has advanced economies like Japan, Korea, Singapore and Hong Kong, but also emerging countries such as China and Malaysia. Second, compared with China, Japan and Korea, the English language is more widely used as one

of the primary academic languages in Singapore, Hong Kong and Malaysia. Third, the tradition and heritage of academia in Asia may also have significant impacts on the degree of international mobility of both students and academics in individual systems. Finally, though market-driven mechanisms have been gradually introduced into higher education in all systems since the mid-1990s, the nature and pace of marketisation varies substantially across the five cases. Higher education in Hong Kong is highly marketised. Japan's higher education system is more rigidly regulated by government. Case studies in the region thus primarily consist of the main countries and systems in two sub-regions: Northeast Asia, including countries and systems like China, Japan, Korea and Hong Kong of China; and Southeast Asia, represented by countries like Malaysia, Singapore and Vietnam.

Changing phases

From a historical perspective, changes in IHE in the main Asian countries can be practically divided into four phases:

In the first phase (late 19th century - late 1920s), many countries in the region established modern universities and higher education systems modelled on Western ideas and patterns. As Western models had a predominant influence on the modernisation of Asian higher education, and contemporary universities in many Asian countries were basically Western institutions shaped by the particular Western power that was the colonial ruler (Altbach & Selvaratnam, 1989), it could be called the westernisation phase of Asian countries. In addition to the adoption of Western models, many Asian countries such as China and Japan also translated foreign academic books into local languages, dispatched domestic scholars and students to Western countries and invited foreign experts and scholars to Asia (Ministry of Education, 1981)

From the 1920s onwards, when Japan established its modern higher education and research systems with an emphasis on nationalism and militarism, the Japanese educational model and conventions were exported to Korea, Taiwan and some South Asian countries as a measure of control in the colonisation of these countries. Japan's higher education during this period primarily took the form of exporting Japanese academic values and standards to certain East Asian countries and areas. During this phase, the Japanisation of higher education or Japanese colonisation was one of the most important features of IHE in some Asian countries and systems (Ebuchi, 1997).

In the third phrase, the intense ideological conflicts between capitalist countries led by the USA, the UK and other Western countries and communist countries represented by the Soviet Union in the post-war period significantly affected the fundamental characteristics of IHE in Asian countries. For example, IHE in the region can in practice be divided into two broad patterns. The first pattern includes countries like Japan and Korea, India, Malaysia, Singapore and the Philippines that were more impacted by US ideas and institutional forms. The second pattern covers China, Vietnam and other countries which were substantially affected, at various times, by the former Soviet model. By the late 1980s, international activities were undertaken more within each group separately: almost no academic and cultural exchange activities were carried out or emphasised between different country groupings. Clear examples are the Americanisation of higher education in Japan, Korea and Taiwan since the late 1940s, the predominant influence of British ideas of higher education in Malaysia, Singapore and Hong Kong, and the introduction of almost all aspects of higher education from the former Soviet Union into China since the early 1950s.

The internationalisation of Asian higher education moved into the fourth phase after the fall of the Berlin Wall in 1989. Increased economic globalisation and the rapid growth of economic and trade cooperation and IHE have together generated demand in Asian countries for new policies and activities to respond to the changing context at global, regional and national level. New IHE developments in Asia are discussed in the following section.

Trends and outcomes

Despite differences in the approaches to IHE and the focus placed on its activities across individual countries, some common IHE trends at regional level are identified below (Huang, 2015; Huang & Welch, 2021).

First, at regional level, the regionalisation of higher education, in particular intra-regional collaboration in personal mobility, teaching and research activities, as well as academic and educational networking, have

become increasingly important policy issues in most Asian countries (Molly, 2012). Since the late 1990s, while closer collaboration between individual countries in Southeast Asia and Northeast Asia has gradually developed in trade and higher education as a result of a constitutional effort to consolidate ASEAN+3 (China, Japan and South Korea), the three countries have also undertaken a wide range of collaborative activities in higher education based on the Campus Asia Project that was launched in April 2010 (MEXT, 2011). Under this project, the three countries have formulated national policies and strategies to further integrate their higher education systems in broader fields. These initiatives include the provision of financial support to build intra-region university networking and design joint curricula and joint degree programs that combine the three countries' cultural and academic strengths. Further, while the traditional academic and cultural links between Australia, Europe, the UK and the USA, between India and the UK, between Japan and the USA, and between Korea and the USA have been emphasised as before, stronger links and new partnerships have been built between China and its neighbours, in both Central Asia and Southeast Asia, based on the New Silk Road initiative, especially since 2013.

Second, there has been more active cross-border movement of students in the main countries in the region. As an example, China had accepted nearly 500,000 inbound international students as of 2017 (Xinhuanet, 2018); Japan had accommodated over 300,000 international students by 2020 if the number of students in Japanese language institutes is also included (JASSO, 2021). The number of international students in South Korean universities has been steadily increasing, rising from 83,000 in 2010 to 154,000 in 2020 (KESS, 2021). More importantly, by country of origin, the largest number of students who study in China, Japan, South Korea, Singapore and Malaysia all come from other Asian countries within the region.

Third, **a far wider variety of activities of IHE have been implemented in many Asian countries. These include not only the traditional activities of cross-border movement of students, faculty members, researchers, scientists and educational curricula, but also newly-emerged transnational higher education activities such as jointly-run academic programmes and campuses, and distance teaching and learning via internet, in collaboration with other countries or overseas universities** (Huang, 2007). For example, there are nine Sino-foreign collaborative universities in China. The foreign partner universities are from the UK, the USA, Russia, Israel and Hong Kong. There are 10 international branch campuses in Malaysia, seven of them in Japan, and five of them in Korea. Further, in an effort to become more competitive, and to attract a wider range of inbound students, major universities in many Asian countries are expanding their English language lectures or degree programmes for both undergraduate and graduate studies with the intent of attracting more students from other Northeast Asian countries and English-speaking countries (MEXT& KEDI, 2009). This is especially the case in non-English-speaking countries. For example, the Ministry of Education in China mandated in 2001 that ten per cent of university subjects should be taught in a foreign language (usually English). National surveys by MEXT (Ministry of Education, Culture, Sports, Culture and Technology) reveal that quick progress was made in providing English-taught degree programs. For example, except at local public universities, the number of English-taught degrees at undergraduate level has shown a rising trend, increasing from 164 in 2012 to 219 in 2016 in the private sector and from 50 to 63 in the public sector. The same trend can be seen at graduate level (MEXT. (2019).

Finally, IHE has played an increasingly important role in improving the quality of teaching, learning and research activities, promoting the international status of national higher education and building world-class universities in many Asian countries, especially since the emergence of several global university ranking tables in the early 2000s (Huang, 2021). In other words, **IHE has been widely used as an effective means of enhancing the academic excellence and competitiveness of national higher education systems and leading universities in the region.** Almost all the main countries have formulated national policies or strategies to build world-class universities and made strides in establishing regional hubs or centres of excellence. In short, **many Asian countries have been trying to move from the periphery of the centre of excellence to become at least a regional centre of excellence.** It could be said that East and Southeast Asia represent the most dynamic new region for the worldwide development of internationalisation, with the growth of major new competitors such as China, Singapore and Malaysia over the last decade or more.

Prospects and challenges

It is difficult to accurately predict the future of IHE in Asia, which has been advanced by economic, political and ideological drivers, or the future of values of culture. Nevertheless, some trends are clear.

First, it is likely that there will be increased inter-regional collaboration and cooperation in higher education and research in more areas. Through all the regional and inter-regional initiatives and efforts, the countries of Southeast and Northeast Asia in particular will be working more closely together to provide further impetus to collaboration in higher education at regional level and also to shape an emerging dimension of East and Southeast Asian higher education.

Second, the continual rise of China's economic development and academic competitiveness at regional and global level will lead to it playing a more prominent and important role in stimulating the regionalisation of IHE and having a more powerful influence on the global landscape of higher education and research. More importantly, **international collaboration and cooperation in the highly dynamic and diverse Asia region will help to break down the traditional centre-periphery model of the West and the Rest.** Major new centres in China, Japan, Singapore and Malaysia will attract higher numbers of bright scholars and students from the region and beyond, as well as forging important new relations within the region and helping to develop world class institutions of higher learning.

Third, on the one hand, there will be growth in the number of outbound students from Asian countries going to Western countries to pursue advanced degrees, increased research collaboration between Asian and Western countries, and a rise in the number of international branch campuses and transnational educational programmes built on the basis of international collaboration and partnership between Asian and Western countries. On the other hand, with the emergence of regional centres of learning and educational hubs, and the long-lasting effects of the COVID-19 pandemic, a greater emphasis will be placed on internationalisation at home. This is not only limited to efforts to incorporate international and global perspectives, orientations and contents into university curricula, strengthen interaction between local students and international students, undertake internationally or globally-focused research activities, use digital technology innovatively, and ensure all students can benefit from these activities within one country, but also to expand intra-regional collaboration in Asia.

Finally, it seems that much closer and more direct collaborations and partnerships will be built up between government, industry and business, and higher education institutions and academia in order to facilitate IHE in individual countries and systems in the region. While national governments still maintain strong leadership and impose various regulations on higher education institutions, and industry and business continue to affect IHE by posing new demands, individual universities will be delegated more authority and autonomy to create institutional internationalisation strategies and engage in international activities based on their missions and goals. Further, in some countries like Japan, South Korea, Malaysia and Singapore, more efforts will be made to achieve closer and more comprehensive collaboration between government, private industry and business and higher education institutions in order to facilitate a higher degree of IHE and pursue global academic excellence.

In terms of challenges, first, because the proportion of East Asian immigrant/mobile academics is much higher outside than within Asia, it can be assumed that the regionalisation of students and academia in East Asia is lower than in either Europe or North America. In particular, the large percentage of students pursuing advanced degrees and seeking employment outside Asia may have a direct correlation with the issue of brain drain in some countries in East Asia, though in recent years both China and Korea have been able to achieve a partial reversal of brain drain.

Second, it is possible that a wider gap in the degree of IHE between individual countries and systems at regional level will emerge. Some countries and systems like China, Japan, Singapore and Hong Kong will attract more inbound international students and high-skilled talents from other countries, while other countries like Vietnam, India, the Philippines and Myanmar will have more outbound students and face the issue of brain drain. Further, at national level, there will be a similarly wider gap between selected universities and other universities in terms of funding, and social and academic reputation, as national governments try to increase the international competitiveness and academic excellence of a few selected universities. The gradual formation of a more rigid hierarchical structure of higher educa-

tion and the research system in countries like China, Japan, South Korea and Malaysia provide good examples of this.

Finally, although many Asian countries are trying to develop the distinctive features of national higher education and research systems, there seems to be an increasing convergence in higher education and research in some countries brought about by the desire to climb league tables. This may result in a new dependency culture and Anglo-American hegemony.

Arguably, if the main countries in Asia aim to achieve a brighter future for IHE, **they need to make tremendous efforts to work together to promote national economic prosperity and development, create a stable and peaceful environment in the region, foster academic systems with national distinctiveness, global appeal and competitiveness, and make more favourable institutional governance arrangements. Most importantly, huge endeavours are required from national governments and academics in Asia to establish centres of learning or excellence at global level by enhancing academic capability.**

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The Future of Higher Education focused on the specific perspective of India

Vidya Yeravdekar

Abstract

India has had a rich tradition in learning and education since ancient times. From time immemorial, India has always been a centre of learning. The traditional and conventional "Guru" (teacher) – Shishya (student) tradition and the "Gurukulam" model of imparting education have endorsed India's contribution to the cause of education. Universities like Takshashila (600 BC to 500 AD) and Nalanda (500 to 1300 AD) attracted scholars from the world over to India in pursuit of knowledge. The Indian higher education system today is the third-largest in the world with 38.5 million students studying in more than a thousand universities and over 42,000 colleges and 11779 stand-alone institutions. The gross enrolment ratio (GER) is 27.1"%, which means that 27 out of 100 students in the 18-22 age group are studying in higher education (AISHE Report 2019-20). With the world's largest higher education system, along with a demographic advantage, India's focus is to create an education ecosystem which is not just best 'in' the world, but best 'for' the world. The country is now engaged in the use of higher education as a powerful tool to build a knowledge-based information society of the 21st century. The Indian education system has already demonstrated its quality by producing some of the best minds to have contributed to the world. CEOs of a number of top global companies were educated in India. The new education policy announced by the Prime Minister of India on 29 July 2020 has further strengthened the existing education system towards the creation of an education system that will create global citizens with deep-rooted Indian values.

Introduction

India has had a rich tradition in learning and education since ancient times. Subsequent to the glory of Nalanda and Takshshila, in 1857, the first three universities, viz the University of Bombay, the University of Calcutta, and the University of Madras, were set up in the presidency towns. After three decades, the fourth university, i.e., Allahabad University was established in 1887. Again, after three decades, the fifth and sixth universities arose at Mysore and Banaras in 1916. These universities, modelled on the University of London, were affiliating, examining, and regulating higher education bodies in India. (Prabhu, 2006).

A little more than half a century has passed since the Government of India initiated a planned development of higher education in the country, with the establishment of the University Grants Commission (UGC) in 1953 and its formalisation into a statutory body of the Government of India in November 1956. Its purpose was to coordinate, determine and maintain university education standards in India. The policy for developing higher education has been mainly governed by the 1986 "National Policy on Education" (as modified in 1992) and its 1992 Program of Action. The 1986 Policy and 1992 Action Plan were based on the two landmark reports, namely, the "University Education Commission Report" of 1948-49 (popularly known as Radhakrishnan Commission) and the "Education Commission Report" of 1964-66 (popularly known as Kothari Commission). These two reports laid down the basic framework for the 1986 National Policy for higher education. The Radhakrishnan Commission on University Education had set up goals for developing higher education (Keav, 1972). After independence, the Government of India established the Ministry of Education, later renamed the MHRD on 26 September 1985, and again renamed the Ministry of Education in the 2020 National Education Policy.

Today, the Indian higher education system is the third largest in the world. There were only 20 universities and 500 colleges with 0.1. million students at the time India attained independence (MHRD, 2010). However, over the last three decades, there has been an exponential increase in the number of educational institutions, teachers and students. Today, the Indian higher education system has exponentially advanced in infrastructure, calibre, and reach.

Open and distance learning has also expanded, thereby playing a significant role in increasing the Gross Enrolment Ratio. Measures such as online courses and digital

repositories, funding for research, improved student services, credit-based recognition of MOOCs, etc., are taken to ensure it is at par with the highest quality in-class programmes.

Internationalisation of education is facilitated through institutional, student and faculty collaborations, also allowing Indian institutions to set up off-campuses abroad, although the bill to allow foreign universities to establish their campuses in India has not yet seen the light of the day.

Several of the latest initiatives brought about by the Ministry of Education, along with furthering the efforts of the Human Resource Development Ministry, have resulted in a systematic change of the HEI framework in India. Making it sophisticated and more convenient, along with incentivising universities to perform and function better.

Quality and Ranking Framework

The establishment of a **National Assessment and Accreditation Council (NAAC)** in 1994 was an important step for the accreditation of all colleges and universities in terms of quality and sustainability in the Indian education system (NAAC, 2022).

In addition to the UGC, other professional bodies were also established for the recognition or accreditation of various study courses, e.g. the All India Council of Technical Education (AICTE), the Bar Council of India (BCI), the National Medical Commission (NMC), the Indian Nursing Council (INC), the Council of Architecture (CoA), the National Board of Accreditation (NBA) etc. (UGC, 2020). They are empowered to monitor different plans and policies, promote research activities, allocate grants, revise and formulate examination systems, evaluate curricula, organise training programmes for teachers and professionals and assess and ensure the quality of higher education in their respective areas.

National Institutional Ranking Framework (NIRF)

In 2015, the Government of India's Ministry of Education (previously Ministry of Human Resource Development) launched the National Institutional Ranking Framework (NIRF) to evaluate and rank institutions based on factors such as teaching resources (faculty-to-student ratio, percentage of PhDs among lecturers), research output, graduate outcomes (employment rate and median salary of graduates, etc.), the extent of internationalisation, and perceptions of quality among the public, employers and academic institutions (Ministry of Education, 2021). The NIRF has gained momentum and the confidence of the public as it covers all kinds of institutions. It also observes transparency in the announcement of the results of rankings. The national ranking is used as one of the mandatory criteria to decide which universities can be granted autonomy, and their eligibility in the Institution of Eminence (IOE), among other things. The NIRF has helped institutions to understand their performance each year and to know their competitors and peer performers. Indian authorities are determined to advance Indian HEIs further in international rankings and establish world-class universities. The NIRF is now preparing Indian institutions/universities to enter international rankings such as QS & THE to position them among the top 500 universities in the world.

Institutions of Eminence

The UGC has launched the Institutions of Eminence scheme to implement the Government's commitment to empower ten public and ten private HEIs and help them become world-class teaching and research institutions called 'Institutions of Eminence Deemed to be Universities'. The public institutions are eligible to receive up to 10 billion Indian rupees (about USD$143 million) each in additional funding over a period (IOE, 2022). The incentive that the IoEs create is for other institutions to aim for the level of excellence to achieve worldwide recognition. This project will also be considering additional institutions to explore their potential fully.

Graded Autonomy Regulation

Recognising the need to create an enabling environment whereby HEIs can become institutions of global excellence, autonomy is pivotal to promote and institutionalise excellence in higher education. In this regard,

the UGC has established the Grant of Graded Autonomy Regulations, 2018. This regulation is aimed to provide autonomy to HEIs based on quality benchmarks under the University Grants Commission (Categorization of Universities (only) for Grant of Graded Autonomy) Regulations, 2018 (MHRD, 2018). These regulations are presented in a well-rounded manner and provide requisites and conditions for autonomy for all the different categories of universities under the UGC framework.

India's National Education Policy (NEP)

The vision of India's new education system has accordingly been crafted to ensure that it touches the life of each and every citizen, consistent with their ability to contribute to many growing developmental imperatives of this country on the one hand and towards creating a just and equitable society on the other. India's new National Education Policy (NEP) 2020 is the first education policy of the 21st century, replacing the thirty-four-year-old 1986 National Policy on Education (NPE). Built on the foundational pillars of Access, Equity, Quality, Affordability and Accountability, this policy is aligned with the 2030 Agenda for Sustainable Development and aims to transform India into a vibrant knowledge society and global knowledge superpower by making both school and college education more holistic, flexible, multidisciplinary, suited to 21st century needs and aimed at bringing out the unique capabilities of each student.

The 2020 National Education Policy has been introduced at the right time to complement the process and vision of creating quality institutions, a culture of innovation, and a highly-skilled workforce. Indian higher education needed a transformation to upgrade them to some of the best HEIs in the world.

The NEP was formulated after a very detailed consultative process, unprecedented in depth and scale. The consultation involved over 2 lakh suggestions from 2.5 lakh Gram Panchayats, 6600 Blocks, 6000 ULBs, and 676 Districts. From January 2015, the MHRD initiated a collaborative, inclusive, and highly participatory consultation process. In May 2016, the Committee for Evolution of the New Education Policy, under the Chairmanship of Late Shri T.S.R. Subramanian, Former Cabinet Secretary, submitted its report. Based on this, the Ministry prepared 'Some Inputs for the Draft National Education Policy, 2016'. In June 2017, a Committee for the Draft National Education Policy was constituted under the Chairmanship of eminent scientist Dr K. Kasturirangan. The policy was formally launched in July 2020 by the Hon'ble Prime Minister of India (MHRD, 2020). The NEP, 2020, therefore, went through two very eminent committees and the tenure of three Ministers of Education, Government of India. It is a robust and prosperous education policy.

Some of the important features of this new NEP are to increase GER in higher education to reach at least 50% by 2035, provide holistic and multidisciplinary education for flexible and innovative curricula of all HEIs, which will include credit-based courses and projects in community engagement and service, environmental education areas, value-based education to embrace the development of humanistic, ethical, constitutional, and universal human values of truth, peace & love, scientific temper, citizenship values and life skills. Lessons in service and participation in community service programmes will be an integral part of holistic education, inculcating global citizenship amongst students to ensure that learners are empowered to become aware of and understand global issues and become active promoters of more values, peace, tolerance, of inclusive, secure, and sustainable societies. It will also endeavour to provide autonomy to institutions, enhance industry-academia relations, along with setting up high-quality support centres, with the establishment of the National Research Foundation (NRF) to foster research through a single-window system. This will change the research eco-system in India, with a strong focus on internationalisation of higher education, reforms in HEI governance and leadership, promotion of the Indian knowledge system, the Academic Bank of Credit (ABC) to store the academic credits earned from various recognised HEIs so that degrees from an HEI can be awarded taking into account credits earned. The establishment of the National Educational Technology Forum (NETF) will also provide a platform for the free exchange of ideas on using technology to enhance learning, assessment, planning and administration. It will focus on online, digital, and liberal arts education (MHRD,2020).

Some innovative recommendations of the NEP 2020

a) **Academic restructuring:** The curricular and pedagogical structure of school education follows a 5+3+3+4 design, corresponding to the age ranges of 3-8, 8-11, 11-14, and 14-18 years, respectively. It will consist of the Foundational Stage (in two parts, i.e., 3 years of preschool + 2 years in primary school in Grades 1-2; both together covering ages 3-8): with flexible, multilevel, play/activity-based learning and the curriculum and pedagogy of National Curricular and Pedagogical Framework for Early Childhood Care and Education (ECCE). The undergraduate degree will be of 3 or 4 years' duration, with multiple exit options within this period, with appropriate certifications- a certificate after completing 1 year in a discipline or field including vocational and professional areas, or a diploma after 2 years of study, or a bachelor's degree after a 3-year programme. The 4-year multidisciplinary bachelor's programme shall be the preferred option since it allows the opportunity to experience the full range of holistic and multidisciplinary education in addition to a focus on the chosen major and minors as per the student's choices.

b) **Holistic Multidisciplinary Education:** The policy envisages a broad-based multi-disciplinary holistic education at the undergraduate level for integrated, rigorous exposure to science, arts, humanities, mathematics and professional fields having imaginative and flexible curricular structures, creative combinations of study, integration of vocational education and multiple entry/exit points. Holistic and multidisciplinary education will help develop well-rounded individuals who possess critical 21st-century capacities in fields across the arts, humanities, languages, sciences, social sciences, and professional, technical, and vocational fields; an ethic of social engagement; soft skills, such as communication, discussion, and debate; and rigorous specialisation in a chosen field or fields. Such a holistic education shall be, in the long term, the approach of all undergraduate programmes, including those in professional, technical, and vocational disciplines. A new vision and architecture for higher education has been envisaged with large, well-resourced, vibrant multidisciplinary institutions. Higher Education Institutions will be transformed into large multidisciplinary universities, colleges, and HEI clusters/Knowledge Hubs, each of which will aim to have 3,000 or more students. A university will be a multidisciplinary institution of higher learning that offers undergraduate and graduate programmes with high-quality teaching, research, and community engagement. The definition of the university will allow a spectrum of institutions that range from Research-intensive Universities, Teaching-intensive Universities and Autonomous degree-granting Colleges (ACs).

b) **The Academic Bank of Credit (ABC):** The ABC will digitally store academic credits earned from various recognised HEIs so that degrees can be awarded, taking into account credits earned. The academic bank of credit will function like a commercial bank. Students will be accountholders to whom the bank will provide credit accumulation, credit transfer and credit redemption services. These credits can be deposited in student accounts. After accumulating credits, a student can redeem them to obtain any academic degree.

c) **The National Research Foundation (NRF):** Aims to catalyse and expand research and innovation across the country. The main focus of the NRF will be to enable a research culture to permeate through our universities, helping to develop a research culture in the country through suitable incentives for outstanding research. It also aimed to undertake major initiatives to seed and grow research at State Universities and other public institutions where research capability is currently limited. The NRF will provide funding for research in all disciplines. Successful research will be recognised and, where relevant, implemented through close linkages with governmental agencies as well as with industry and private/philanthropic organisations.

d) **Internationalisation of HE:** This will be facilitated through institutional collaborations and student and faculty mobility, allowing entry of top-ranking global universities to open campuses in India. These initiatives will also help achieve larger numbers of international students studying in India and provide greater mobility to students in India who may wish to visit, study at, transfer credits to, or carry out research at institutions abroad, and vice versa. Courses and programmes in subjects such as Indology, Indian languages, AYUSH medical systems, yoga, arts, music, history, culture, and modern India, internationally relevant curricula in the sciences, social sciences, and beyond, meaningful opportunities for social engagement, quality residential facilities and on-campus support, etc. will be fostered to attain this goal of global quality standards, attract

greater numbers of international students, and achieve the goal of 'internationalisation at home'.

India will be promoted as a global study destination providing premium education at affordable costs, thereby helping to restore its role as a Vishwa Guru. An International Students Office will be set up at each HEI hosting foreign students, to coordinate all matters relating to welcoming and supporting foreign students. Research/teaching collaborations and faculty/student exchanges with high-quality foreign institutions will be facilitated, and relevant mutually beneficial Memorandum of Understanding (MOUs) with other countries will be signed. High performing Indian universities will be encouraged to set up campuses in other countries, and similarly, selected universities, e.g., those from among the top 100 universities in the world, will be allowed to operate in India. A legislative framework facilitating such entry will be put in place, and universities will be given special dispensation regarding regulatory, governance, and content norms on par with other autonomous institutions of India. Furthermore, research collaboration and student exchanges between Indian and global institutions will be promoted through special efforts. Credits acquired in foreign universities will be permitted, where appropriate, as per the requirements of each HEI, to be counted for the awarding of a degree.

The NEP 2020 has carved a new path for India and the world. Everybody is watching this transformation of the Indian education system. India was considered a 'Vishwa Guru' when universities like Nalanda and Takshasila attracted a large number of scholars and students from across the world. The Government is now working hard to restore this glory by involving the participation of various stakeholders to implement the New Education Policy. The implementation of the National Education Policy has gained momentum, and the world will surely see a lot of changes in the Indian education system in the future.

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Higher Education in the Asia-Pacific

Yang Rui

Abstract

The Asia-Pacific region is attaining a greater global presence. Seen largely as an area of progress and growth, its recent development in higher education has been widely acknowledged. This is even more remarkable when compared with other non-Western societies. Modern higher education systems have been well established throughout the region. Over the last decades, most states have transformed their higher education systems from elite to mass form. With high R&D investment, research has continued to grow rapidly. Asia-Pacific societies now openly aspire to elevate some of their universities to world-class status. At the same time, higher education in the region faces a number of challenges. As private institutions have become key higher education providers in various societies in the region, one prominent issue is quality. Another key priority for most states in the region is to provide equal access to and equity in higher education. An additional notable concern is a growing gap between spiralling enrolment and plateauing public finances. Tracing the cultural roots of higher education systems in the region, this paper offers a panoramic view of higher education development in the Asia-Pacific region.

Introduction

Due to the lack of an official definition of the Asia-Pacific region and its boundaries, the list of Asia-Pacific countries depends on the context. It boasts some of the world's oldest residential universities and venerable higher learning traditions, such as Takshashila in ancient India in the fifth century BC, China's Taixue during the Former Han period (206 BCE-8 CE), and the House of Wisdom in Baghdad during the Islamic Golden Age dating back to the eighth century (Tandon, 2008). However, modern universities in the region are all based on European academic models as the result of Western imperialism and colonization in the nineteenth century (Altbach, 2004). Decoupled from their indigenous traditions, all Asia-Pacific higher education systems have sustained a strong Western influence, as shown by the German model on the Japanese system, the British in India, Singapore, Hong Kong, and Malaysia, and the French legacy in Southeast Asian nations such as Thailand, Indonesia, and Vietnam.

Some fast-growing economies in the Asia-Pacific have demonstrated successful development models over the past decades., the region has become the most significant contributor to global GDP, reaching a 34.9 per cent share in 2019 (Asian Development Bank, 2020). Home to 60 per cent of the world's population, the middle classes are fast-growing with a burgeoning demand for higher education. Previous decades have witnessed remarkable progress, including a vast expansion of higher education and rapidly expanded access in nearly all countries throughout the region. Meanwhile, higher education development has met a number of challenges, from quality control to inequalities. With significant differentiation between the experiences of a few Western societies, such as the United States, Canada, Australia and New Zealand, and the non-Western majority, this chapter focuses on the latter. It shows that while the immense complexity of the region poses a great challenge to making sense of its higher education trends, some features of the development have been identified and comparable.

Institutional Infrastructure

The most prominent achievement in higher education in the region is an unparalleled growth in the post-secondary sector over recent decades. Most Asia-Pacific nations are non-Western. Their modern universities were established based on Western experiences as an approach to learning advanced knowledge. As latecomers in contemporary higher education, their development means, to a great extent, becoming similar to Western systems and institutions, especially in infrastructure, standards, measures, and organizational behaviours. It is thus positive to note that, within a relatively short period in history, many of them have learned remarkably well from the West about how to institutionalize their modern higher education systems

and institutions. In this regard, the societies have made substantial progress in higher education by learning from the West. A Western-style higher education system has been established throughout the region.

As noted above, the Asia-Pacific region has long and rich traditions in higher learning. Yet, modern universities are an imported concept for most of its non-Western nations. Although the oldest institutions of higher learning emerged millennia ago, modern higher education systems were only introduced from the West as social institutions since the nineteenth century. This foreign transplant has now taken root in all societies in the region, with differing paths and trajectories in higher education development. Some nations have progressed extraordinarily well. Japanese universities, for instance, have long been a global science and technology powerhouse. China's achievements in higher education are particularly impressive. Swiftly achieving the world's largest number of students and teachers and becoming the second largest producer of scientific papers.

While China's modern higher education system has been well established as contributing to the rise of Chinese power, most other systems in the region have also grown substantially. For example, student enrolment in higher education increased significantly from 626 per cent in Thailand to 2119 per cent in Vietnam during 1980-2011. From 2000 to 2013, gross enrolment ratios in higher education rose from 6.6 to 29.7 in China, 9.5 to 31.5 in India, 14.9 to 31.5 in Indonesia, 25.7 to 37.2 in Malaysia, 28.8 to 38.8 in the Philippines, 35.1 to 51.2 in Thailand, and from 10.5 to in 25.6 Vietnam (Welch, 2016, p. 42).

Again, China's story is particularly stunning. In 2020, 41.83 million students enrolled in its 2,738 regular and 265 adult higher education institutions, a gross enrolment rate of 54.4 per cent. Annual postgraduate admissions reached 1.1 million (116,000 and 990,500, respectively) at doctoral and master's levels, and a total of 3,139,600 at-school postgraduate students. Teaching and administrative staff reached 2,668,700 with 1,833,000 full-time teachers and a student-teacher ratio of 18.37:1. There were 771 private higher education institutions, enrolling 2,556 master's students and 7,913,400 undergraduate and associate degree students (Ministry of Education, 2021). Behind the numerical growth are systemic reforms since the 1980s.

External factors have influenced the region's traditional societies. Some systems are built on their colonial legacies. For instance, Hong Kong's higher education system was established during the colonial era to produce an Anglicized ruling Chinese elite to support colonial rule and extend British cultural influence in China and Asia. Founded in 1911, the University of Hong Kong was the first higher institution in the society. Purposely designed to use English as its medium of instruction, it had a very distinctive role to play as an instrument of British cultural imperialism in China. It was intended as a "British lighthouse in the Orient" (Cunich, 2012, p. 439), with a broad remit to educate the new generation of Chinese youth who would lead the modernization of China. The second higher education institution, the Chinese University of Hong Kong, was born in 1963 by the amalgamation of three post-secondary colleges.

Hong Kong system's later development reflected the interaction between higher education and societal development. The 1990s saw the birth of more higher education institutions and the expansion continued after the change of sovereignty in 1997. In 2000, the government decided to increase the participation rate of tertiary education to 60 per cent by encouraging the non-government sector to participate in the provision of post-secondary education. A number of self-financing higher education institutes emerged to offer two-year sub-degree programmes, leading to associate degrees and higher diplomas. The gross enrolment ratio consequently increased from 9.3 per cent in 1980 to 68.5 per cent in 2015, growing at an average annual rate of 11.96 per cent. Having some of the region's best-built universities in teaching and research, Hong Kong is now home to eight publicly funded universities, of which most enjoy an international reputation.

In addition to the most developed higher education systems in advanced nations in the region, a modern (Western style) higher education system has also been well institutionalized in a wide range of societies from Taiwan to Thailand and Chile. Manifestations of such infrastructural establishment are in various key aspects, including institutional organization, curriculum, degree structure, and mode of governance.

Social and Financial Resources

Most Asian-Pacific states recognize the role of an effective higher education system in nation-building. Heavy investments by some countries have led to fast-growing innovation and research and the rise of key universities in the region through global rankings. Many East and Southeast Asian societies in the region are strongly committed to education. Their public spending on higher education is generally high by international standards. However, public spending per student in the region has decreased recently as the market was introduced to higher education and educational costs per student increased substantially. Accordingly, government subsidies declined as a share of total funding, while the share of financing contributed by tuition fees rose considerably. The private cost of higher education has become substantial in some societies. Since the 1990s, some developing nations have increased their R&D investments, and a multi-source financing system has taken shape in many Asia-Pacific societies. Government funding is no longer the only source of finance, and the percentage it contributes to the total revenue has declined dramatically.

In a time of resource shortage, various higher education systems and institutions have adopted different coping strategies. Some are better positioned than others based on their socio-economic conditions. For instance, earning more than 10 billion Australian dollars in international student fees in 2019, Australian universities have become over-reliant on revenue from international students (Calderon, 2020). Revenues in Asia-Pacific higher education systems are generated from a variety of sources, including government funding, tuition and fees, income earned through entrepreneurial activities of higher education institutions, philanthropy, and donations. For example, the income structure of China's top ten universities in 2019 revealed that, on average, public funding made up only around one-third of their total income. As national flagships, they were much better placed to generate additional revenues than most other institutions that continue to rely heavily on government funding.

Investment in basic research is a strategic move that has been intensely practised, especially in East Asian states such as China and Singapore. The Singaporean government is famous for its generous higher education funding. While Singapore's average expenditure on tertiary education at 1.1 per cent of its GDP might appear to be lower than that of OECD countries, it spends 7.1 per cent of its total public expenditure, compared with the average of 3.1 per cent of OECD member states (Jacob et al., 2018). China has substantially increased its appropriation for basic research by 23 per cent a year on average in the 2000s. Its years-long run of double-digit percentage increases in spending on R&D has continued (Normile, 2020). China now devotes 2.1 per cent of GDP to S&T in its most recent 14th Five-Year-Plan (2021-2025), approaching the level of developed countries. Similar policies are adopted widely in other societies such as Hong Kong, Korea and Malaysia.

However, since the 2000s, decentralization and corporatization were introduced into the higher education sector throughout the Asia-Pacific region. Higher tuition fees and lower public subsidies have since become the new normality aiming for higher education institutions to become more efficient in resource allocation. Even in Singapore's highly centralized system, the University Governance and Funding Review in 2000 recommended that greater autonomy be given to major universities to ensure that they remain competitive and relevant in the long run. Singaporean universities have been given greater operational autonomy with regard to staff remuneration, and the university councils have more autonomy in setting strategic directions. They have gained more flexibility in selected aspects, including start-up research grants and reduced teaching load for top researchers. It is also necessary to point out that there have been widening gaps within the Asia-Pacific region: while R&D spending of rich countries is at a new high, small South-East Asian economies are lagging behind.

Research and Innovation

Asia-Pacific governments see universities as a source of strength in the knowledge-based economy of the twenty-first century. With the world's most powerful system in the United States, the region also has an increasing number of fast-improving systems and institutions. While the United States is a magnet for worldwide talent, a new wave of East Asian science powers are emerging. Such shifts of magnitude suggest a more pluralistic scientific and cultural environment in global higher education, with East Asian societies making sus-

tained strides in technological progress over the past decades. China, for instance, leads the world in patent applications at 40 per cent of the global total and has started to set the pace for others to follow in a number of scientific fields (Ball, 2018). As Simon Marginson (2021) remarks, the great flowering of scientific investigation in China has exploded the belief still widely held in the Euro-American zone that Judeo-Christian civilization or Western political democracy is essential for the highest level of intellectual achievements.

According to many observers, Singapore is often cited as a classic example of the successful building of scientific capacity. It is at the forefront of innovation in higher education, (Third World Academy of Sciences, 2004). Since the 1990s, it has developed a system of higher education that is the envy of many countries and regions. The story of how it became a research nation is truly stunning. Other examples include Hong Kong and Taiwan. Although tiny in size, Hong Kong has a few research universities with an international reputation. With only 0.10 percent of the world's population, its universities account for 1.01 per cent of the world's highly cited researchers (Web of Science Group, 2019). In contrast, Taiwan's science and technology, innovation, and universities have been underestimated internationally. In the Scimago Journal & Country Rank 1996-2019, Taiwan came nineteenth in total output of international publications out of 240 countries and societies globally.

Teaching and Learning

As a prime part of the totality of modern universities, teaching and learning practices in all Asia-Pacific societies are required to be informed by Western concepts and principles. Most of them have achieved a high level of sophistication in university teaching and learning. Since their higher education has experienced a shift from elite to mass form, there have been many corresponding changes in teaching and learning, such as student population and access. Moreover, flagship higher education institutions in the region have similarly aimed at world-class status, an aspiration with significant implications for teaching and learning in the universities, including content and approaches as well as orientation. Higher education institutions are evaluated vigorously, with clear guidelines, regulations, and criteria set by the authorities. In contrast, quality assurance has been much less systematic within institutions, depending greatly on institutional situations.

A good sign of teaching and learning development is the wide use of information communication technology at all higher education institutions. Educational technology has become a well-developed research area, paving the way for even further use of modern technologies in higher education institutions. Building up the necessary skills and infrastructure has played a critical role in battling the COVID-19 pandemic, during which many Asia-pacific universities shut their campuses and shifted to teaching online, which has expanded significantly ever since, fast becoming the main mode of instruction implemented on a massive scale. Even those without much previous e-learning experience have started teaching online. The pandemic has become an impetus for Asia-Pacific universities to evaluate their technical preparedness for new changes, prompting them to reflect on how they can tap into disruptive technologies such as mixed reality, data science, and artificial intelligence to serve the needs of education and address latent disruptors better.

Perhaps Hong Kong provides the clearest example. As one of the world's most competitive cities, Hong Kong is home to some of Asia-Pacific's very best universities in teaching and research achievements. Its eight publicly funded universities offer a wide array of high-quality programmes up to doctorate degrees. Over twenty post-secondary institutions are offering a variety of locally accredited sub-degree programmes. Tertiary teaching and learning in Hong Kong enjoy a global reputation, from the renowned executive business management to increasingly popular blended/experiential learning programmes. From 1995, the teaching and learning quality of universities is assessed regularly, similar to the academic audit first developed in the United Kingdom (Meade & Woodhouse, 2000). In the face of the COVID-19 pandemic, Hong Kong universities have demonstrated their infrastructural strength, with online teaching widely adopted. To the extent of becoming the prevalent mode of teaching and learning as the universities suspended face-to-face classes.

It is worth noting that for the Asia-Pacific region, cross-national student mobility is becoming more of a two-way traffic, with a growing number of students from outside travelling to Asia-Pacific countries to study. While Japan and China are increasingly chosen as study destinations for international students, others

such as Hong Kong and Singapore have also been performing well in this regard, and Malaysia is not far behind, especially in terms of attracting students from the Islamic world.

Issues and Challenges

Despite recent rapid economic developments over the past two decades, the Asia-Pacific is still home to half the poor of the world (living on less than $1.25 per capita per day) and half of those who are illiterate (nearly five hundred million people in the region). It thus faces a variety of health, education, sanitation and secure livelihood challenges and inequalities. Its higher education development also faces enduring challenges. As noted above, Asia-Pacific societies fall into the highly advanced, middle-income and poor categories in terms of development points, Western and non-Western culturally, and even with colonial, non-colonial and colonized histories. Due to such great diversity, the challenges identified below have very different meanings in different countries. They are mainly for the relatively weaker systems in the region.

First, having subscribed to market ideologies and approaches in higher education governance, many Asia-Pacific states have become increasingly reluctant to finance enrolment growth in their societies. Corresponding to such reluctance has been a fall in state support for students and families. This is not only seen in less wealthy countries such as Vietnam but also in countries like China, which is usually known for investing heavily in education at both society and family levels. One significant reason has been the growing popularization of higher education, defined as predominantly a private good.

Second, with insufficient government funding, much attention was shifted to the private sector. Various stakeholders, including students, families and governments, were asked to share higher education costs. This caused higher education budgets to compete for resources against equivalent rising demands in other major areas such as health, housing, transport, and welfare, as seen in the Philippines and Indonesia, where private higher education has long occupied the lion's share of enrolments. Even in highly advanced Japanese and Korean systems, the private higher education sector has played a significant role in providing higher education. At the same time, socialist China and Vietnam expanded their private higher education (Welch, 2016).

Leaving much to the market with limited state capacity to regulate the growth and quality of higher education has caused a series of quality and equity issues, especially in developing countries with widening gaps between rich and poor. Private institutions are generally seen to hire part-time academics with low salaries and insufficient time in the Philippines, Indonesia, and Vietnam in Asia, and even more so in many countries in Latin America for an extended period (Mendoza, 2020). Some countries in the region have continued to struggle with a variety of issues related to gaps in higher education between social classes, ethnicities, genders and geographical regions (Hawkins, 2016).

Third, despite scattered brain gain and brain circulation in some countries, less developed non-Western societies in the Asia-Pacific generally suffer from brain drain to the West, including the Western societies within their own region. For example, a large number of students from China (including Hong Kong and Taiwan), India, Korea, and Malaysia choose to study in Europe, North America and Australia and New Zealand, and stay in their host countries after graduation.

Future Orientation

Most of the main spiritual and philosophical traditions emerged simultaneously and independently in China, India, Iran, Israel and Greece during the Axial Age (Jaspers, 2010). They continue to define us when we are amid a second Axial Age, an era of dramatically accelerated cultural evolution with a new global consciousness and connectivity (Tu, 2009). What has been much neglected in the current debates is that all traditions must understand each other. Yet, they are not on an equal footing. While it is imperative for Western systems to learn about others, it is even more urgent for non-Western systems to synthesize their own intellectual traditions with the dominant Western tradition.

As a Western-style higher education system has been institutionalized throughout the region, Western knowledge is regarded as superior and seen as the only knowledge that counts. While universities are "a key site of struggle, where local knowledge meets global knowledge in a battle to represent different worlds in different ways" (Pennycook, 1996, p. 64), the inte-

llectual mind on Asia-Pacific campuses is often more Western than indigenous. The impact of colonialism on most Asia-Pacific higher education systems has been profound and enduring, disrupting local traditions and raising thorny issues of how to preserve local strengths, epistemic, linguistic, administrative, and cultural, in the face of often imperious imports (Welch, 2019).

In this regard, Asia-Pacific higher education systems have much to learn from each other. Over the past decades, tremendous strides have been made by East Asian universities. A growing number of their scholars have demonstrated a good grasp of East Asian and Western traditions in their fields, with a distinctive bicultural identity. This is indeed a remarkable achievement that positions East Asian universities and scholars nicely for even greater future success. Such a bicultural intellectual condition embraces Western learning as one of the most important elements of their modern knowledge systems (Reagan, 2000). In the context of globalization, it is fast gaining significance. Integrating East Asian and Western ideals of higher learning, it has great implications for university development within their own region and beyond.

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Global and Regional Engagement for Sustainable Development: the Case of Chinese Higher Education

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Abstract

This chapter presents China's key higher education developments, particularly in its quest for quality, regional and global recognition of Chinese higher education and increasing global and regional influence in higher education. Key policies and initiatives, such as the 985, 211 and double world-class university projects, increasing scholarships for Chinese and foreign nationals and establishing university networks, and the belt and road initiative will be presented to highlight China's global and regional engagement, which contributes to both national and regional sustainable development. How Chinese higher education institutions are empowered and utilised to implement national initiatives to address quality higher education, contribute to national development, and China's international relations policies will also be discussed. Furthermore, this chapter argues that path dependency, capacity, and international relations contribute significantly to how a country and its higher education system and institutions engage with the local community, contribute to national sustainable development, and promote a country's higher education and its graduates beyond national borders.

Introduction

With all United Nations Member States adopting the United Nations 2030 Sustainable Development Agenda and its 17 Sustainable Development Goals (SDGs), multiple stakeholders, including higher education institutions, contribute in various ways to the achievement of the SDGs. However, increasing globalisation and regionalisation of the world order requires an understanding of how national higher education systems and their institutions engage globally and regionally in relation to their contribution to sustainable development at local, national, regional and global level.

Much of higher education institutions' (HEIs) contribution to society has been attributed to their three missions: teaching, research and extension (which is often termed as the "third mission") and is frequently linked to their relationship to multiple stakeholders, particularly with regard to support for national and local economic development and innovation (Perkmann et. al., 2013). This stereotyping of higher education institutions is unwarranted and undermines their contribution to sustainable development, in particular their global and regional engagement and how these institutions' teaching, research and engagement activities contribute to sustainable development, taking into account the dynamic and complex relationship between key social agents and institutions (e.g. higher education institutions), contexts, historical development and strategic ambitions (Thomas et. al., 2022). How a country's higher education system and its respective institutions engage at global and regional level is also informed by the development of its respective higher education sector and national policies, including international relations and foreign policies.

Considering that China has the largest population (roughly 1.44 billion - Worldometers, n.d.) and higher education system in the world, this chapter looks at the case of China to understand how global and regional engagement in higher education contributes to the achievement of the UN 2030 Sustainable Development Agenda. It argues that path dependency, capacity and international relations contribute to how a country, and its higher education system and institutions, engages with its local community, contributes to national sustainable development and promotes its higher education and graduates beyond national borders. It also sets out China's key higher education developments, policies and initiatives, particularly as part of its quest for quality, regional and global recognition of Chinese higher education, and increasing global and regional influence in higher education.

Developments in Chinese Higher Education

With over two thousand years of history, China has one of the oldest education systems in the world. Tracing back to the fourth century BCE when Confucius established a private academy, Confucian heritage remains influential in modern Chinese higher education (Wu & Zha, 2018). However, modern Chinese higher education has had to adapt to a changing neoliberal reality, increasing globalisation and regionalisation of the global world order. Chinese higher education has experimented with various models, including the Soviet Model (after 1949), which focused on specialised institutions. Since the 1980s, in the era of reform and reopening, China has learned and adopted higher education models from the developed world (Wu & Zha, 2018). The current modern Chinese higher education system and its institutions is the result of various Western influences, including the Japanese model with a strong imprint from the French and German traditions of the 1890s-1900s, the American model of the 1920s and the more centralised European model of the 1930s (Cai & Yan, 2017).

Massification of education has contributed to increased participation in modern Chinese higher education. According to the UNESCO Institute of Statistics (UIS) database (n.d.), the gross enrolment ratio increased from 2.97% and 7.59% in 1990 and 2000 to 24.20% and 58.42% in 2010 and 2020, while the female participation rate in Chinese higher education also increased from 2.47% in 1994 to 24.96% and 63.93% in 2010 and 2020, respectively. In 2020, 14.9% of higher education enrolments in China were in private higher education institutions, reflecting the opening up of Chinese higher education to private sector providers in recent decades. According to China's Ministry of Education (2020), there were 41.83 million students (including 8.46 million students attending online HEIs) in 2,738 higher education institutions in 2020, which is a significant increase from 36.99 million higher education students in 2016 (MoE, 2017). Postgraduate enrolments also increased from 1.981 million (1.639 million & 342,000 in Master's and Doctoral programmes) in 2016 to 2.864 million (2.44 million and 424,000 in Master's and Doctoral programmes) in 2019 (MoE, 2017; 2020). The expansion of public and private education providers resulted in a significant increase in higher education institutions in China from 1,071 and 2,305 in 1999 and 2009 (Shen 2018), to 2,738 in 2020 (MoE, 2021). Private higher education institutions have increasingly provided undergraduate and vocational-technical education, particularly for those that did not manage to pass the National Matriculation Test 'gaokao' (Shen, 2018). Furthermore, the number of inbound international tertiary education students coming to China increased from 36,386 in 2006 to 225,100 in 2020, while outbound international tertiary education students from China increased from 818,604 in 2015 to 1,061,511 in 2019 (UIS, n.d.).

This success story of Chinese higher education reform is the result of various continuous reforms linked to China's open-door policy in the economic sector, which has shifted from a centrally planned to a more market-oriented economy. Although education reforms began in the 1980s, the most prominent ones were undertaken in the 1990s, focusing on strategies that emphasised decentralisation, liberalisation and privatisation, with key themes including the massification of higher education, quality assurance, transformation of higher education governance, restructuring of higher education institutions, and building world class universities (Cai, 2013; Cai & Yan, 2017; Wu & Zha, 2018), mostly to serve the needs of China's economic development.

Global and Regional Engagement

As indicated in the previous section, Chinese higher education has significantly addressed the capacity issues relevant to its national economic development, and paved the way for increasing global and regional engagement in higher education to enhance global recognition, further increase quality in key disciplines, and provide a mechanism for knowledge, higher education and science diplomacy. This global and regional engagement can also be seen in relation to the contribution made by higher education and its respective institutions to the UN 2030 Sustainable Development Agenda. Knowledge brokerage should be a key function of universities, and public engagement and linkage and exchange mechanisms supporting higher education institutions' developmental and entrepreneurial missions need to be strengthened as countries seek to advance the UN 2030 Sustainable Development Agenda (Richards-Kennedy & St. Brice 2018). Increased

articulation between scholarship, innovative solutions, strategic partnerships and activism to support national strategies to achieve the SDGs is required to ensure the maximisation of higher education institutions' contribution to sustainable development (Richards-Kennedy & St. Brice, 2018, p.8).

Recent decades have shown that China's diplomatic discourse and behaviour place significant importance on people-to-people exchanges in foreign relations. According to Liu (2015), the link between people-to-people exchanges and diplomacy is fundamentally assumed to relate to communication activities and increasing the number of players in diplomacy, as well as the production, management and distribution of public goods. It is also about strategic arrangements, optimisation of operating mechanisms and enhancement of communication competences for improved mutual understanding and cooperation. Moreover, the focus on people–to-people exchanges is aligned with the Chinese concept of 'Guanxi', which is often understood in terms of 'an intricate and pervasive relational network' bound by reciprocal obligation, assurance and mutuality (Kavalski 2018a, p.90; 2018b).

People-to-people exchanges can also be seen in terms of global and regional engagement in the higher education sector. During China's G20 Presidency in 2016, China's Ministry of Foreign Affairs highlighted China's overarching approach of "innovative, coordinated, green, open and shared development" and launched the country's national plan to implement the UN 2030 Sustainable Development Agenda (International Institute for Sustainable Development, 2016). In November 2021, on the 30th anniversary of China's dialogue relations with the Association of Southeast Asian Nations (ASEAN), China not only expanded its ties with a comprehensive strategic partnership, but also made five proposals, including "building a peaceful, safe, secure, prosperous, beautiful and amicable home together" (Xinhua, 2021). This reinforces the strategic role of people-to-people exchanges in China's diplomacy and the role of higher education as part of China's Belt and Road Initiative. The above shows China's commitment to achieving the SDGs and its strategies focused on coordinated, open and shared development, to which people-to-people mobility also contributes.

Relevant Initiatives

China's higher education-related global and regional engagement can be seen in several initiatives, including the Confucian institutes, the world class universities initiatives (e.g. projects 211 and 985 and the Double World-Class programmes), internationalisation initiatives (e.g. the establishment of foreign branch campuses in China and Chinese Universities abroad), enhancing student and faculty mobility, and the establishment of higher education and discipline-specific networks. More recently, China's Belt and Road Initiative, particularly through its people-to-people exchange component, has also contributed to the country's global and regional engagement in higher education.

In spite of criticisms of the use of Confucius Institutions as a basis for China's soft power and influence in the global world order, these institutes are seen as a form of globalisation and contribute to the enhancement of partnerships and cultural understanding around the world. Confucius Institutes are Chinese culture and Mandarin Chinese language programmes funded by China and staffed by Chinese nationals and exported around the world (Hubbert, 2019). First announced in 2004 under the aegis of Hanban (Confucius Institute Headquarters), 550 Confucius Institutes and 1,172 Confucius Classrooms have been established in 162 countries and regions with more than 2.3 million registered students by 2019 (Qiao et al., 2021).

In relation to China's quest for global recognition and enhancement of the quality of its higher education institutions, several world class university initiatives have been launched: projects 211 and 985 and the Double First-Class University project. Projects 211 and 985, launched in 1995 and 1998, are aimed at cultivating high-level elite universities for national economic and social development strategies and world-class universities, respectively (Shen, 2018). There are currently 112 universities in project 211 and 39 universities (increased from the initial 9) in project 985 (China Education Centre, n.d.). Launched in 2018, the Double First-Class University project is aimed at developing a number of world-class universities and disciplines by 2050 and improving Chinese higher education and international competitiveness (Huang, 2017). As of 2022, there are now 147 universities and roughly 300 subject disciplines (including a recent focus on cross-disciplinary subjects) under the Double First-Class University project (Sharma, 2022). Furthermore, the number of

Chinese higher education institutions listed in the Quacquarelli Symonds (QS) World University Rankings has significantly increased from 10 to 53 in 2010 and 2022, respectively, with 6 institutions listed in the top 100 (Quacquarelli Symonds, 2010; 2022).

Aside from the focus on improving the quality and international recognition of Chinese higher education institutions and key disciplines, China has also engaged in increasing the international presence of universities in China and Chinese universities abroad, increasing inbound and outbound international student mobility and establishing university and discipline-focused networks.

Following the opening of the University of Nottingham Ningbo China in 2004, the number of Sino-Foreign Cooperative Universities in China had increased to nine by 2018 (Lu, 2018). Chinese higher education institutions have also been expanding their presence abroad, as seen with the establishment of Soochow University in Lao PDR (2011), the Tongji University Florence Campus (2014), Xiamen University in Malaysia (2015), and the Peking University London Campus (Huang, 2022). Furthermore, the number of transnational institutions and programmes in China had significantly increased to 154 institutions and 1,187 programmes by 2021 (Huang, 2022).

The establishment of the China Scholarship Council (CSC) in 1996 contributed to the growth of inbound and outbound international student mobility in China. Reporting to the Ministry of Education, the CSC provides support for different types of international academic exchanges with China, including: foreign students in China, Chinese students abroad and Chinese research institutions that wish to cultivate exchanges with faculty and staff at foreign universities. In 2018, CSC scholarships financed 65,000 foreign students in China and an equal number of Chinese students abroad. Each of these groups is examined in detail below. It is estimated that the CSC funds about 12 percent (around 65,000) of foreign students studying in China and seven percent of Chinese students studying abroad (also roughly 65,000) (Fedasiuk, 2020).

The CSC sponsors about 12 percent of foreign students studying in China in a given year (roughly 65,000 students) and seven percent of Chinese students studying abroad (again, approximately 65,000 students). Furthermore, since 2011, the Chinese Academy of Sciences (CAS) has been committed to delivering breakthrough science and technology, a higher calibre of talent and superior scientific advice (Chinese Academy of Sciences, 2022). Since 2009, the CAS has implemented several international talent programmes, including the CAS Fellowship Programme for Senior International Scientists and the CASE Fellowship Programme for Young International Scientists, which has attracted over a thousand foreign scientists to conduct research at its institutes. Though the CAS-TWAS Fellowship, since 2004 the CAS has invited around 50 scientists a year from developing countries to study or conduct research at its institutes (Chinese Academy of Sciences, 2022). Furthermore, China also has initiatives, such as the Thousand Talents Plan, to attract high-level scientific talent with the aim of making China a world leader in science and technology by 2050 (Kang, 2020).

Examples of China-led university networks include the establishment of the Asian University Alliance (AUA) and the University Consortium of the 21st Century Maritime Silk Road (UCMSR) in 2017 and 2018, respectively. Spearheaded and hosted by Tsinghua University, the AUA is composed of 15 elite universities from different Asian countries, including Peking University, the University of Tokyo, Seoul National University, the National University of Singapore and the University of Malaya. By strengthening collaboration among its member institutions, the Alliance aims to jointly address regional and global challenges, especially those related to higher education and economic, scientific and technological development. The AUA also organises people-to-people exchanges (e.g. the AUA overseas study programme and the AUA staff exchange programme), conferences and joint research programmes (Asian Universities Alliance, n.d.).

Highlighting the Silk Road spirit of "peace, friendship, openness, inclusiveness, mutual learning and mutual benefit", the UCMSR (2022) was established to provide a platform for educational cooperation to facilitate exchanges and cooperation in areas of inter-university communication, talent cultivation, discipline building, technological innovation and social service. The consortium currently has 66 member universities (52 in Asia, 7 in Europe, 4 in the Americas and 3 in Oceania). Both university networks highlight the need for international cooperation, mutual learning and benefits, and can be seen as part of China's regional (AUA) and global (UCMSR) engagement in higher education.

Chinese higher education institutions' engagement with networks is not necessarily China-led, as can be seen with the Japan-led Collective Action for Mobility Programme of University Students in Asia (CAMPUS Asia), established through the Southeast Asian Ministers of Education Regional Centre Specialising in Higher Education and Development (SEAMEO-RIHED), in partnership with the ASEAN-China Centre, including the ASEAN-China Network for Cooperation and Exchanges among Engineering and Technology Universities (ACNET-EngTech), the ASEAN-China Arts Colleges Alliance (ACACA) and the ASEAN-China Alliance of Private Higher Education Institutions (ACAPHEI) (SEAMEO-RIHED, 2021).

Although China's Belt and Road Initiative, launched in 2013, is often associated with promoting economic integration and infrastructure development across Eurasia and beyond, education is strategically positioned as one of the enabling factors of the Belt and Road objectives (Xu, 2021). Close people-to-people ties are one of the main goals of the Belt and Road Initiative, along with policy coordination, infrastructure connectivity, unimpeded trade and financial integration (MOFA, 2019). When presenting the progress of the Belt and Road Initiative, China's Ministry of Foreign Affairs (2019) highlighted the fact that the Belt and Road Initiative (BRI) upholds the principles of extensive consultation, joint contribution and shared benefits, in line with the Silk Road spirit of peace and cooperation, openness and inclusiveness, mutual learning and benefit. The achievements of the BRI, as reported in the education component of closer people-to-people ties, include: setting up the Chinese Government Scholarship–Silk Road Programme, mutual recognition agreements of higher education qualifications with 24 Belt and Road (B&R) countries, opening 153 and 149 Confucius Institutes and Classrooms, respectively, in 54 B&R countries, and scholarships for Master's and Doctoral programmes.

China's Higher Education Institutions & SDGs

China's higher education sector has constantly changed and adapted in line with historical and contemporary developments. Higher education in East Asia, including China, was initially in catch-up mode, utilising and/or localising neoliberal Western higher education models to build capacity and quality in its respective higher education systems (Liu, 2022). Eventually, through its higher education system and institutions, Chinese higher education began to explore the uniqueness of universities, recognising the basic function of higher education institutions, promoting institutional reform and innovation, and manifesting China's social and cultural characteristics as core contents of higher education development in China (State Council of China 2019 cited in Liu 2022). These developments are aligned with a shift in focus from national socio-economic development to being a global economic power and becoming a key player on the global platform, including its commitment to the 2030 Sustainable Development Agenda.

Global and regional cooperation, including people-to-people exchanges, forms a significant foundation of China's international relations policy. This is clearly reflected in China's 2016 national plan to implement the 2030 Agenda for Sustainable Development, which included guaranteeing 12 years of free education for children with disabilities and delivery of President Xi Jinping's pledge to provide 120,000 training opportunities and 150,000 scholarships for other developing countries by 2020, including scholars from least developed countries (LDCs), small island developing states (SIDS) and African countries (International Institute for Sustainable Development, 2016).

China also strengthened ASEAN-China cooperation by transforming ASEAN-China dialogue relations (from 1991) into a comprehensive strategic partnership in 2021. On the 30th anniversary of ASEAN-China relations, China's President Xi Jinping highlighted its good neighbour policy towards ASEAN and stressed the importance of people-to-people exchanges (Xinhua, 2021). President Xi promised to enhance cooperation through mutual recognition of diplomas, launch the China-ASEAN Science, Technology and Innovation Enhancing Programme, support the establishment of a China-ASEAN Knowledge Network for Development, increase the number of China-ASEAN Young Leader Scholars, and support a programme for 300 young scientists from ASEAN to come to China for exchanges in the next five years (Xinhua, 2021).

In line with China's vision and initiatives (including the Belt and Road Initiative) to build a community with a shared future for the world, China's 2035 education modernisation plan aims to provide higher level and more open education, strengthen educational and humanistic exchanges, promote the exchange of hearts and minds among people for civilised exchanges, and make greater contributions to the creation of a better future for mankind (MOE, 2019 cited in Zhu, 2019). Furthermore, the 2035 education modernisation plan places a significant emphasis on exchange and co-development in the international context (Zhu, 2019).

As China's higher education is mostly driven by national policies, the country's national strategy, including international relations and foreign policy, has a significant influence on the development and initiatives of Chinese higher education institutions. The Belt and Road Initiative, China's commitment to the 2030 Agenda for Sustainable Development, and the importance placed on people-to-people exchanges, provide the framework and corresponding support for Chinese higher education institutions to engage globally and regionally by establishing university networks, enhancing academic and student mobility and research collaboration, and contributing to socio-economic development in their respective communities, country and region and the rest of the world.

Chinese higher education institutions not only contribute to education and science diplomacy, but also to the achievement of China's commitments to the 2030 Sustainable Development Agenda. China's focus on the massification of education (including increasing access to higher education), its increased focus on Science & Technology and contributions to national socio-economic development and higher education's role in supporting national policies, including Healthy China 2030 (World Health Organisation, 2017) and Made in China 2025, as well as China's aim for global intellectual, science and technology dominance (Jain, 2021), has enabled Chinese higher education institutions to contribute to key SDG goals, including alleviating poverty and hunger, ensuring quality education, decent work and economic growth, as well as SDG partnerships. For example, the expansion of China's higher education has given rise to the development of university towns in sub-cities and contributes to addressing the increasing number of enrolments, but also to broader socio-economic development (Mei & Symaco, 2021). With the increasing global and regional engagement of China's higher education institutions, the contribution of Chinese higher education institutions cuts across national borders.

China's education and science diplomacy clearly enhances people-to-people exchanges, cooperation and mobility, contributing to increased access to higher education, increasing economic development and, essentially, poverty alleviation, as well as jointly addressing the challenges posed under the UN 2030 Sustainable Development Agenda. These are manifested in the growth in higher education participation, inbound and outbound student mobility, the development of university networks, and the support and implementation of joint research not limited to science & technology largely undertaken by Chinese higher education institutions through national development frameworks and directives, including the Belt and Road Initiative and China's ongoing support for people-to-people exchanges.

As suggested in this article, understanding China's higher education institutions' contribution to the UN 2030 Sustainable Development Agenda should be seen within a complex framework which includes path dependency, capacity building and international relations. Although China's national development agenda and international relations & foreign policy sets the framework for China's higher education policies, individual Chinese higher education institutions are encouraged and supported in their initiatives for global and regional engagement with other higher education institutions, particularly the Belt and Road countries.

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Riding the Waves Higher Education Globalization in Oceania: Responding to the Pandemic, Rising Geopolitical Tensions, Decolonisation and Climate Change

Christopher Ziguras

Abstract

After the end of the Cold War, universities in Oceania played a pivotal and relatively uncontroversial role in building international linkage for three decades, facilitating transnational flows of knowledge, students and scholars. Greater enmeshment in global knowledge production networks was widely seen to generate a wide range of social and economic benefits, albeit unevenly distributed. Very quickly, that unquestioned openness to educational globalisation came to be seen as problematic. This chapter provides a brief overview of the key structural features of higher education internationalisation in Oceania before considering a range of global challenges with which universities are now expected to engage. The chapter considers separately the quite distinct experiences of high-income Australasia (Australia and New Zealand), as compared with the many South Pacific island states, including Papua New Guinea, Fiji, the Solomon Islands, Vanuatu, New Caledonia and French Polynesia. In Australasia, the market-based model has come under increasing political pressure, as the pandemic highlighted just how dependent universities are on international enrolments, and geopolitical tensions led to a defensive strategic lens now being applied to international partnerships. In the South Pacific, the call for decolonisation of higher education is increasing scrutiny over how universities engage with global knowledge systems in ways that prioritise local social and economic development.

Introduction

After the end of the Cold War, universities in Oceania played a pivotal and relatively uncontroversial role in building international linkages for three decades, facilitating transnational flows of knowledge, students and scholars. Greater enmeshment in global knowledge production networks was widely seen to generate a wide range of social and economic benefits, albeit unevenly distributed. Very quickly, that unquestioned openness to educational globalisation came to be seen as problematic.

Internationalisation is now challenged by new geopolitical tensions that position internationalised institutions as sites of vulnerability to hostile actors, as well as by calls for universities to be held accountable for the greenhouse gas emissions caused by a culture of hyper-mobility. The COVID pandemic, of course, prompted a much more rapid reversal of internationalisation, with nearly all of Oceania closing borders to international travellers for most of 2020 and 2021. While we will only really know the long-term impacts of these challenges with the passing of time, we can see some early signs of strategic reorientation on the part of governments and universities in the region.

In this paper, we consider separately the experiences of two groups of states in Oceania because their contexts are starkly different. Firstly, we consider how the international engagement strategies of the two high-income countries in the region, Australia and New Zealand, are being rethought. The latter part of this chapter considers the experiences of universities in the South Pacific.

Australasian internationalisation

Australia and New Zealand's first universities were established in the nineteenth century as colonial outposts of the British academic world and, from their early days, they were tightly enmeshed with the academic system of "the old country" (Pietsch, 2013). The Anglophone universities of the antipodes maintained extensive

links with British and North American higher education systems for over a century, and by the 1990s had become key nodes in regional academic networks, supported since that time by policy settings and market conditions that promoted an eagerness to engage with the Asia Pacific region, and East Asia in particular.

Australasian universities are heavily internationalised in various ways. Prior to COVID, they had among the highest proportions of international students in the world, peaking in 2019 at 32% of all students in Australian universities (including offshore programs and campuses) and 16% in New Zealand (Australian Government, 2022; New Zealand, 2022). Education has become a major export industry in both countries, representing the fourth or fifth most valuable export industry in each country, and in some areas (such as the State of Victoria and the city of Auckland), it is the single most valuable source of foreign earnings. After years of commitment to outbound mobility, Australian students learn abroad as part of their university studies at a higher rate than nearly any other country, with 19 per cent of Australian undergraduates having a mobility experience in 2019 (International Graduate Insight Group, 2020).

Incoming international students are highly concentrated in the major urban centres in both countries. Most international students in Australia study in the largest cities – Sydney, Melbourne, and Brisbane – while in New Zealand, fully two-thirds of all international students are located in Auckland (Infometrics & National Research Bureau, 2016). **In large part, the enthusiastic internationalization of the student population has been possible on such a scale because the societies in which this is occurring are already profoundly ethnically diverse since both countries have had large-scale immigration programs for most of their history.** Overseas born residents account for 39% of the population of Auckland and 32% of Sydney, and 58% of Melbourne's population have at least one parent born overseas

COVID, China and Climate Change

The pandemic caused two crises in Australian international education. The first focused on the financial impact on universities, and the associated loss of academic and professional staff jobs resulting from the closure of borders and a significant drop in international enrolments. **Those concerned about universities' dependence on international students saw the downturn as an opportunity to proclaim 'I told you so' to a receptive national media,** but it is doubtful that universities will decide to actively reduce international enrolments and associated revenue in the post-COVID era, to limit future vulnerability.

The second crisis concerned the plight of international students who remained in Australia and New Zealand during the pandemic, which revealed underlying vulnerabilities, particularly in Australia. In recent years, the international education sector was primarily focused on ensuring the welfare of a growing international student population, especially concerning workplace exploitation, accommodation and engagement with the broader community (Farbenblum & Berg, 2020; UNSW Human Rights Clinic, 2019; Ziguras, 2015). When the pandemic hit, strict lockdowns meant that many international students in Australia and New Zealand lost their jobs and access to campus life and social engagement, on top of the anguish of not being able to travel home, were their concerns about the welfare of their families and friends. International students in Australia experienced higher levels of financial hardship because they were not able to access main emergency support payments, whereas, in New Zealand, equivalent programs were available to temporary residents and locals alike. Two-thirds of international students working in Australia prior to COVID lost all their work, compared with only 17% of local students whose employment was subsidised by COVID support programs (Lawrence & Ziguras, 2021). This experience starkly highlighted the vulnerability of hundreds of thousands of temporary residents in Australia, who are able to study and work, but who do not have access to the same legal rights and social safety net that protect the rest of the community (Marginson et al., 2010; Peter Mares, 2016).

While the effects of the pandemic will hopefully be short-lived (international enrolments are bouncing back in both countries in 2022), rising geopolitical tensions threaten to have a much larger impact on international academic engagement. And ironically, it is these countries' success in the global education market that makes them highly vulnerable to political sensitivities. Australia and New Zealand both draw a majority of their international students from Asia, and China is by far the largest source country accounting for nearly 40% of international university students in Australia and 50% in

NZ (Australian Government in pre-COVID times, 2021; Infometrics & National Research Bureau, 2016). Education is not alone in being so dependent on China, which is the largest trading partner for many industries in both countries.

The political relationship between China and Australia, and New Zealand deteriorated from 2017 when allegations of Chinese covert influence campaigns were raised in both countries (Hartcher, 2019). In the following years, Australia and New Zealand repeatedly aggravated the Chinese government, for example, by blocking Huawei from involvement in the development of 5G networks on grounds that the Chinese company posed a security risk, blaming China for malicious cyber-attacks, and criticising Chinese policies on a range of issues, including its occupation of the South China Sea, treatment of the Uyghur minority, and the Hong Kong national security law. In response, China engaged in economic coercion against Australia, blocking the importation of a range of Australian products, including coal, barley, wine and lobsters. Chinese government media began warning students of the risks involved in studying in Australia (Wan & Xu, 2021), but there has been no definitive action to restrict student mobility so far.

There have been two responses to this situation in the higher education sector – decoupling and securitisation. Decoupling involves strategic economic disengagement with China, but governments prefer to say market diversification. Australia has sought to find other markets for exports blocked by China and so far has been able to limit the costs of China's economic coercion (Wilson, 2021). The priority of Australia's 2021 ten-year international education strategy is diversification (Australian Government, 2021). This is not a wholly new concern, and the policy explicitly addresses a range of forms of concentration, but the significance of its elevation to primary importance in the new strategy is not lost on the sector.

Securitisation refers to the reframing of activities in terms of security concerns and the consequent downgrading of other ways of understanding the activity (Buzan et al., 1997). We see this happening to international education worldwide, as commercial, cultural and developmental logics become subsumed by a concern with the security risks posed by the cross-border movements of students, scholars and ideas. It is not that geopolitical concerns are a new feature of international education; for centuries, educational mobility was put to work in the service of colonial empire-building in the Nineteenth and early Twentieth Centuries (Pietsch, 2013) and then repurposed to assist in the integration of Cold War blocs in the late Twentieth Century (Ziguras, 2018).

Australia and New Zealand's success in international engagement during the neoliberal mobility boom since the 1990s makes these countries' education systems particularly vulnerable in an increasingly tense world. Concerns have been raised in both countries about universities being sites of intellectual property theft, particularly concerning 'dual-use' technologies, about foreign students and scholars being encouraged to work on behalf of their governments, for example, by being asked to report to the authorities on compatriots, demonstrate on campus against perceived slights to their home country, and create a culture of self-censorship on campuses due to fears of antagonising foreign governments.

The impacts have been strongest in Australia, where after several years of work, governments and universities have arrived at a new set of guidelines for international engagement, which involve far higher levels of scrutiny both within institutions and by the government (University Foreign Interference Taskforce, 2021). **There has been a ratcheting up of pressure on institutions to align their strategic objectives and risk assessment frameworks with Australia's geopolitical orientations,** the most recent iteration is a parliamentary enquiry into national security risks affecting the Australian higher education and research sector (Commonwealth of Australia, 2022).

Antipodean universities have embraced the United Nations Sustainable Development goals, both as a guide informing decisions on curriculum development and research priorities and as a means of articulating the real-world relevance and impact of their work. Four of the top ten universities in the 2021 Times Higher Education Impact Rankings, which assessed contributions made to achieving the SDGs, were Australian institutions (O'Malley, 2021). While such rankings do need to be treated sceptically, these results do indicate the degree to which these universities have explicitly adopted the SDGs as a means of expressing their aspirations and achievements. This newly articulated commitment to addressing global challenges is forcing Australasian institutions to move away from a narrow and quite self-interested focus on revenue generation and brand-building. Climate change is major concern, with a succession of institutions pledging to transition to carbon neutrality quickly, and this will likely translate into a reduction in travel by university staff and students. Helping this shift was two learnings from the pandemic, first that there are now good alternative means of international engagement through videoconferencing and second, that universities can save a large amount of money by curtailing travel.

Higher Education Internationalisation in the Pacific

The international engagement of universities in the South Pacific is starkly different. While Australasian universities are, on the whole, well-established, large and well-funded and thus able to consider themselves as 'world-class' institutions (Salmi, 2009), universities in the South Pacific are comparatively small, financially constrained and focused on the training needs of local communities (Healey, 2022).

Just as Antipodean universities were created as outposts of the British higher education system, the oldest universities in the South Pacific were established by foreign governments as part of broader efforts to develop modern state institutions. In 1965 the Australian government established Papua New Guinea's (PNG) four universities – the University of PNG, PNG University of Technology, the University of Goroka and the Papua New Guinea University of Natural Resources and Environment. PNG was a United Nations Trust at that time, under Australian administration, but even after independence in 1975, the close relationship has continued, with Australia remaining PNG's largest donor and PNG being Australia's largest development assistance recipient. Similarly, the University of the South Pacific (USP) was established in 1968 by the governments of Australia, New Zealand and the United Kingdom as a regional university modelled on the University of the West Indies established three years earlier. To serve its Pacific territories, France created the French Pacific University in 1987, which later split to form the University of French Polynesia and the University of New Caledonia. These remain very much integrated within the French national higher education system, adhering to the same policies and regulations, curriculum and academic calendar as in France.

The region's other universities have postcolonial origins, having been created either by national governments as public universities – including the National University of Samoa (1984), Fiji National University (2010), Solomon Islands National University (2013), National University of Vanuatu (2020) – or private universities established by a community group – University of Fiji (2004) and Christ's University in Pacific, Tonga (2004). Regardless of their histories, all these universities' international engagements are framed by the significant disparities that exist in relation to Australia, New Zealand and France.

Decolonisation and Climate Change

From their inception, all higher education institutions in the South Pacific have faced the challenge of tailoring and adapting imported established systems, curricula and pedagogies to suit local needs. In recent years, there has been a renewed focus on such questions through the lens of decolonisation. We see this expressed in the considerable interest in research on Pasifika students' approaches to learning, with scholars endeavouring to move beyond deficit models through a deeper engagement with traditional ways of sharing knowledge (Boon-Nanai et al., 2022; Matapo & McFall-McCaffery, 2022; New Zealand, 2020). There has also, in recent years, been a move towards more sociologically informed studies of educational policy, governance and administration, leading to a more sophisticated recognition of the importance of social context and in particular the significance of collective identities and relationships between social groups (Wright, 2022).

The challenge of decolonising the curriculum invariably involves rethinking the place of a wide range of approaches, including a range of Western intellectual traditions, the utilitarian demands of employers and governments, and various local religious and cultural traditions. Take the example of ethics courses, which are compulsory in Fiji's universities. White & Mua (2022) describe internal academic debates about what should be taught. These courses encompass intellectual traditions including 'good governance', democratic citizenship, utilitarianism, religious moral beliefs, professional ethics, indigenous cultural traditions, and

universal human rights, among others. Debates focus on what combination of these is most appropriate for particular student groups, with strong divisions between professional faculties that advocate for narrow professional ethics courses, government figures more concerned with 'good governance' in an effort to overcome corruption, and humanities and social science scholars interested in a more socio-cultural approach.

Another pressing issue for South Pacific universities is the degree to which professional education and licensing should be harmonized with international standards. Australia and New Zealand have entered into a large number of mutual recognition agreements for professional qualifications (82 and 41, respectively), but only one of these involves the South Pacific, an accounting agreement between Australia and PNG (APEC, 2022; Ziguras, 2021). Aligning professional education facilitates vastly greater employment opportunities for graduates who are prepared to work abroad, which is a significant issue given the small populations and limited graduate opportunities in island states. For example, Fiji National University is seeking international recognition for its engineering programs under the Washington Accord framework and has obtained recognition of its radiography program by Australian licensing bodies (Healey, 2022).

While climate change is, of course, a growing priority for universities globally, it is an existential issue for universities in the Pacific, as their communities grapple with the impact of rising sea levels, increasing intensity of storms, and changing rainfall patterns, among other impacts. The Pacific Islands Forum Leaders in 2018 adopted the Boe Declaration, which identified climate change as "the single greatest threat to the livelihoods, security and well-being of the people of the Pacific". Research and teaching into both the impacts and the potential adaptation strategies is therefore of critical importance. Given the scale and complexity of the challenge, this requires multinational cooperation in funding, research and implementation.

The impact of the stark economic inequalities between the South Pacific on the one hand and Australia, New Zealand and France on the other is moderated by the fact that a large proportion of the population of most pacific island states live abroad. There are more Tongans living abroad than in Tonga, for example (Lee, 2009). These diasporic networks already play a key role in higher education, in particular at the level of doctoral training and research and can be harnessed further in order to tackle the challenges of decolonisation, harmonisation of professional qualifications and climate change responses.

Conclusion

While the experiences of these two regions – Australasia and the South Pacific – are quite distinct, universities in both are being called upon to engage more strategically in a politically charged global environment. This shift has profound implications for university leadership, who are now called upon to justify their international activities more explicitly to a range of stakeholders. In Australia and New Zealand, the unquestioning embrace of the global education market is over; it is no longer enough to apply a decision-making rubric, which in effect resembles 'it is international and therefore good', and 'it generates a small surplus, so let's do it'. In the South Pacific, university leaders face competing pressures to serve local communities and value local knowledge while also increasing alignment with international standards, especially in relation to professional education, in the hope that greater integration into global knowledge systems will provide greater opportunities for skilled graduates. This is at once a re-politicisation of internationalisation, in some ways harking back to the Cold War concern with alliance-building, although globalisation has made international relations much more complex since that time. Now, as well as considering who we are partnering with, university leaders need to be able to explain what type of international benefits will accrue from this activity, how these will benefit local communities, and whether they will contribute to addressing the most important global challenges we face.

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3.4 Europe

A European Vision for 2030

Thomas Ekman Jørgensen

In the spring of 2021, the European University Association (EUA), representing more than 800 members across the continent, published its vision for 2030: "Universities without walls".[1] This document lays out the idea of universities that are deeply integrated with the rest of society at the local, national and international levels. **Universities are spaces where diverse learners with different goals are part of the university community - for longer or shorter periods, they will be places of encounters and cooperation with many different partners.**

Sustainable development is and will continue to be a fundamental guiding principle for this societal engagement, focusing on the interplay between the goals of protecting the environment and providing wellbeing across the planet. This work will require new levels of cooperation between disciplines within universities as well as with external partners.

While working with these partners, universities will also stand firm on their values. They will be places of academic freedom, with respect for evidence-based debates, and areas of respite to think about new ideas and new perspectives on society and the universe. Serendipity and the dedication to knowledge, research and education for their own sake are not in contradiction to providing solutions to societal challenges.

Looking more concretely at the future and the role that the larger context plays for realising the vision of a university without walls, EUA published a follow-up report on scenarios.[2] This report looked at possible developments in geopolitics, digitalisation and the role of democracy in Europe, and how these would affect the ambitions outlined in "Universities without walls". These showed that the main risks to realising this vision would be one-dimensional thinking and utilitarianism.

One-dimensional thinking supposes that universities have one function, being either ivory-tower institutions purely engaged with the production of knowledge for its own sake or cogs in the macro-economic machinery to increase competitiveness. Universities are not only producers of knowledge for its own sake and contributors to competitiveness; they are also vehicles for cultural and inter-cultural exchanges, critical debates, social inclusion and much more. Moreover, universities can combine all these functions in ways that create new questions and new knowledge. Likewise, with utilitarianism, universities are institutions with their own values and goals; they are not vehicles for policies developed elsewhere. Therefore, they should not, as is often the case in geopolitics, become instruments in a struggle between global powers. This is also true for learning and teaching, which are much more than tools for providing learners with labour market-relevant skills.

University values must be protected, for example, from democratic backsliding, but also from being controlled by commercial interests. The digital transformation is particularly relevant here, as the pandemic has boosted the digitalisation of universities, which comes with the risk of being dominated by the commercial interests of technology companies.

1. See "Universities without walls – A vision for 2030" EUA, 2021: https://www.eua.eu/resources/publications/957:universities-without-walls-%E2%80%93-eua%E2%80%99s-vision-for-europe%E2%80%99s-universities-in-2030.html
2. See Pathways to the future A follow-up to "Universities without walls – A vision for 2030", EUA 2021: https://eua.eu/downloads/publications/pathways%20to%20the%20future%20report.pdf

Interdisciplinary research, multidisciplinary teaching: How universities can contribute to handling the major challenges of the 21st century

Karl Tombre

Abstract

The broad transitions of the 21st century are the Environmental and Digital Transformations of our societies and our economy. The challenges raised by these transitions are complex, and the associated problems will not be solved by a purely technological approach. In this multifaceted world, comprehensive universities have the advantages of a long tradition in applying scientific methods to understand complex questions and gathering all the disciplines associated with human knowledge under the same roof. What they still lack to a certain extent is the habit of pushing for extensive interdisciplinary approaches. By developing interdisciplinary research programs, fostering cross-disciplinary profiles through an evolution of their curricula, and adding interdisciplinary work to their mobility programs, universities can evolve to be major players for the success of these broad transitions of our world.

Two simultaneous major transitions

The 21st century has brought major challenges to our attention, more than ever before. After two centuries of technology-driven progress, there is a desire to switch from climate-changing technologies and approaches to sustainable models. This **Environmental Revolution,** which includes the goal of reaching a carbon neutral society by 2050, is an urgent necessity – especially in view of the stern warnings about global warming, massive loss of biodiversity and an approaching major crisis in access to resources and energy. This is happening simultaneously with the world's massive entry into the **Digital Age,** with all the changes this entails, not only in terms of technical solutions or the processes driving the economy, but also in the very way our societies and human interactions are organised.

In an era with such overwhelming changes, we need more than ever to educate tomorrow's decision-makers to address all the complex issues raised by such major transformations of our societies, and to address these issues with rigorous, scientific methods. This is even more necessary at a time when scientific evidence tends to be seen as just another opinion, and where mere technical inventions will probably not be sufficient to bring about sustainable solutions. Universities have a major duty and responsibility here. They also have the assets, provided that they are able to question some of their old habits and the ways in which they conduct research and education.

The role of universities

Universities are among the oldest institutions in the world. Since their foundation in the Middle Ages, they have been based on the principle of educating students, not by merely teaching a predetermined curriculum, but by exposing them to critical thinking, debating issues and questioning established truths. This means that they have been and continue to be major players in the constant increase in humankind's global knowledge. Academic freedom has always been an important aspect of this university "DNA". Medieval disputations in theology and philosophy developed into what we now know as scientific research, in all knowledge areas. University teaching is based on research, and research is in turn strongly connected to education.

This is still the very essence of a university: learning to question existing knowledge and increase our global understanding of complex issues, using an approach referred to as the scientific method. As early as classical

antiquity, Aristotle explored how empirical observation could feed abstract thought. In the 11th century, asan Ibn al-Haytham (Alhazen), the father of modern optics, advocated scientific scepticism and extensive use of experimental evidence when he developed his theories of vision, light and colour. Many scientists helped to establish this rigorous approach to knowledge acquisition; one famous example is that of Isaac Newton's Rules for Science (Newton, 1713). The scientific method involves the observation and acquisition of experimental facts, followed by reasoning on these facts through rigorous scepticism, the induction of hypotheses and careful verification of such hypotheses.

However, the very breadth of scientific knowledge and the need for a deep understanding of a wide variety of topics has led science to become very disciplinary. There are very few scientists, if any, who can claim to have a comprehensive insight on a large range of scientific fields. Comprehensive universities offer a broad field of disciplines, both in their research and in their curricula, but faculty members' careers are mostly dependent on their disciplinary strength, which is primarily assessed through their publications in highly specialised journals. This also reflects the fact that studies are largely disciplinary: the degrees awarded by universities are usually associated with a specific scientific field – e.g. you have a Master's degree in sociology, or a PhD degree in physics.

This must of course remain a basis for good scientific work. Handling interdisciplinary problems will never mean that we need scientists or university alumni who have only a shallow understanding of all the aspects of these problems. We will always need strong, in-depth expertise in mathematics, biology, economics, psychology, etc. But we will also increasingly need good practices for associating these fields in order to address our century's challenges.

The case for an interdisciplinary approach

Although there has been controversy about the precise role of science in the Industrial Revolution, which many perceive to have been mainly driven by technological and entrepreneurial skills, the fact that British industrialists and engineers were educated in Newtonian mechanics is perceived as an important factor for this revolution having its origins in Britain (Bekar & Lipsey, 2004). In any case, this was the beginning of a nearly two-century long period where science and technology fed each other, and the world was profoundly transformed by technology. Alas, the burning of fossil fuels to meet the rapidly increasing energy needs of this new age probably marked the start of a global warming process which has led the world to the present situation, amplified by the threat of a shortage of critical resources.

The Digital Revolution was kicked off by another context; that of the second World War. There was a need for automated computation for intelligence and the development of new technologies such as mastering nuclear fission. Progress in both basic science and technology was ripe for the overwhelmingly fast development of a new era, over just a few decades. Those of us who studied computer science in the 1980s have certainly seen the astonishment in our students' or children's eyes when we explain that the smartphone that they all routinely use far exceeds, in terms of computing power and memory capacity, not to mention access to online services, anything we had access to or could even dream of in our first jobs. We have entered a Digital era, which deeply impacts not only the way we work, but also the way our human societies are organised, the way we interact with each other, and the way we think about our economic, political and social environments. And there are increasing concerns about the hidden costs of this Digital age in terms of energy consumption and access to critical materials, as well as the way it tends to redefine basic values of humankind, such as privacy.

The 21st century has seen these two major transformations of our society. We need a scientific understanding of all their facets. And we do not believe that merely pursuing the existing dogma of inventing new technological solutions will meet this need. Many of the challenges posed by a carbon neutral society, with sustainable resource management of the whole life cycle, circular economy approaches and energy transition models, are as deeply societal, political and economic as they are technological. This must be taken into consideration in our research, our innovation processes and the way we organise our political and social systems.

Interdisciplinary research

Universities must of course remain a place with great academic freedom; not a service centre to answer today's economic needs, but rather a laboratory for imagining solutions for tomorrow. This is fundamental and must absolutely be preserved. But universities can certainly take better advantage of having so many disciplines, so many specialties, to make it far easier to conduct interdisciplinary, challenge-driven research. This takes time, as various academic fields have grown their own language, their own definitions of concepts. We strongly believe that coming innovations will not consist solely of scaling up technology readiness levels. They will be as much about social, economic and human-centred questions.

As noted by Ann Dale (2005), disciplinary research often appears as vertical stovepipes, making cross-sectoral discourse problematic. To overcome this, a growing number of universities have set up interdisciplinary research institutes or programmes devoted to cross-disciplinary challenges. This is done orthogonally to their disciplinary departments. While this acknowledges the benefit of cross-disciplinary collaboration to fully understand complex questions, such constructions cannot avoid a number of obstacles (Pickett et al., 1999):

- the lack of existing conceptual frameworks to conduct research in emerging interdisciplinary areas;
- the time and hard work needed to develop a common language, but also a "common meaning";
- the temptation to return to one's disciplinary "comfort zone" when the inevitable critical impulse points out all the imperfections in the ongoing development.

But when enough time and strategic priorities are provided, such interdisciplinary research institutes can be powerhouses for emerging knowledge and good science in many fields.

Interdisciplinary education

Universities should also focus on developing diplomas that reflect the broad scope of the many new expertise profiles in a world of rapid digital and environmental transformation – not only diplomas in different disciplines, but also diplomas leading to T-shaped profiles. The T-shaped model (including generalisations such as the Pi-shaped model), has lately been promoted in higher education, as well as in professional training. The vertical leg of the T stands for disciplinary knowledge, sometimes called "deep knowledge", which remains the fundamental characteristic of higher education. The horizontal bar of the T stands for knowledge and competence outside one's own discipline (sometimes called "shallow" knowledge), and selected functional, personal and ethical competencies (often called "soft skills").

As noted by Saviano et al. (2016), **higher education programmes should evolve to encourage systems thinking, which allows learners to understand the whole by understanding the connection between the different parts**. The authors stress that "traditional hyper-specialised education programmes show all their uselessness as they pivot on the building of sectorial knowledge and languages" (Saviano et al., 2016). The challenge is to be able to go past these differences in order to cover all the dimensions of a specific problem as an interdisciplinary team. We do not dream of universal minds mastering all these dimensions alone. Nevertheless, we believe that by providing a certain level of "shallow" understanding of the dimensions which are not covered by one's few "deep" fields of knowledge, and by learning to share a common reference framework and a common language, such teams can be efficient in developing innovative solutions. As noted by Uhlenbrook and de Jong (2012) in a paper on the expected competency profiles for the water professionals of the future:

> "Regardless of the number of people in the team and the depth of their specialised knowledge, together they will not get anywhere if they do not effectively work together. Finding a common language, understanding the basics of other disciplines and being able to integrate outside specialist knowledge are essential skills for successful team work."

In an exploratory study aimed at evaluating the emergent attributes of T-shaped expertise in two educational programs, Conley et al. (2017) concluded that "current logical models assert that these individuals will be more 'responsible' innovators, as they possess both a deeper and broader understanding of the complex, interconnected 'wicked problems' facing our society." Many interesting connections are actually worth explo-

ring. The transition of energy production, distribution and consumption to completely new models calls for engineers in the energy sector to also have a good understanding of the new economic model governing the sector, as well as for financial executives or economists of the sector not to be ignorant of major technological innovations. In the rapid evolution of our digital world, we certainly need brilliant mathematicians and computer scientists for cybersecurity, but cybersecurity is only a subset of the broad question of citizens' and societies' trust in the digital world, and must be connected to legal and sociological questions. Numerous examples like these two could be given.

Interdisciplinary mobility

The major challenges posed by Environmental and Digital Transitions are of a much broader scope than those of individual countries. Especially in Europe, we need a Europe-wide approach, as no national model is strong enough to build global leadership and strong innovation for these challenges. The diversity of languages, cultures, managerial approaches, economic environments, and political and regulatory frameworks that we have in Europe is a major asset, rather than a hindrance, for training truly European engineers, managers and leaders who are able to deliver to society.

Inside Europe, what better place than its comprehensive universities, which are unique institutions with the necessary interdisciplinary approaches, in both research and education? As honest brokers in a world full of competition, they would clearly be valuable players in connecting disciplines, connecting people, and connecting economic, societal and political needs.

Europe has a strong history of student mobility through the Erasmus program. But it is still mainly used to move to another country to continue studying the same discipline. In the future, **European universities should foster mobility which is not limited to the same discipline, but open to moving to another country to add skills to the horizontal bar of the T, ultimately creating a student portfolio that can be filled with credits towards a diploma combining hard and soft skills, "deep" and "shallow" knowledge.**

Conclusion

While our universities certainly have many assets, they still need to work on their ability to foster interdisciplinary approaches. They need to be places widely open to dialogue between knowledge fields, where crossing disciplines, crossing curriculum tracks and crossing borders is easier than it is today. Curricula must be open to the great variety of profiles needed for the society and economy of tomorrow. It should be natural to think of universities as connecting civil society, political decision-makers, academia and economic interests.

Europe was the cradle of the Industrial Revolution. As we have seen, Europe's universities undoubtedly played a role in the success of that revolution. We firmly believe that Europe and its universities can again play a major role in developing the necessary interdisciplinary skills and approaches to innovation that are needed for the Environmental Revolution.

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Promises and risks of digital research and education

Stephane Berghmans, Jean-Claude Burgelman and Thomas Ekman Jørgensen

Abstract

This article explores the consequences of the digitalisation of higher education and research: as research data and data from digitally enhanced learning has grown, so have the possibilities for using this resource for the public good, as well as harvesting it for commercial purposes. In this situation, the academic research system must look to preserve its digital sovereignty through the possibility of making research results and data open through Open Science, but must also work to control the data generated by its various activities. Large technology companies can and are using this data for commercial services, at times competing with universities, and potentially undermining university values.

The article argues that we find ourselves at a crucial moment in this development, where universities must act in order to retain control of their activities and avoid dependence on large, commercial stakeholders, while recognising data as a 21st century common good.

Robert Maxwell is mostly remembered today for the massive and highly influential (for good and bad) publishing empire he created, which included newspapers like The Sun, The Mirror or the infamous The News of the World. He even owned the sticker firm Panini and TV channels such as MTV in Europe through Maxwell Cable TV. What he is less remembered for among the general public is the establishment of the modern scientific publishing industry. Academic publishing predates Maxwell of course but it was highly inefficient, slow and mostly financially unsustainable. He created Pergamon Press, which we would today describe as a disruptor in scientific publishing, the post-war equivalent of Uber in transport.

With its novel, entrepreneurial yet aggressive strategy, Maxwell and Pergamon transformed an artisanal trade into a highly profitable business. Even today the academic world struggles with who controls scientific publishing. It obviously let it go in the 1950s, allowing it to be managed by commercial interests, but never got it back. Despite decades of the Open Access movement, followed by the more recent emergence of the Open Science movement, as well as attempts to take scientific articles out of the black boxes in which they are locked, there has been limited success in regaining full control. The path to full ownership of research output by its creator, the academic community, is still a long way off.

Worryingly, the start of this century poses a new threat to universities. This one is very similar in its premise to the loss of scientific publishing, but with potentially far direr consequences. As the world undergoes full digitalisation of what we say, write, do and increasingly think (via AI), consciously or even unconsciously, these material and immaterial actions have become digital data points. **While digitalisation of the subject of science and science itself can hold the promise of better and more reflective research, digitalisation also opens the door to more marketisation.** Every day we read stories in the press about how, in a data driven economy, everything that is digital or moves in the digital sphere can be monetised. In such a world of large digital platforms and technology companies that are constantly looking for new avenues of profit, the academic world offers an attractive way of diversifying their business.

Just as in our daily life, the question the academic world therefore faces is who will be in control of all of the data it directly or indirectly creates? Just as for scientific articles, the question today is will this data be put in a black box and closed or will it be made openly available and hence traceable and reusable?

What data are we talking about? First, we should probably not be too worried about the data being generated by research itself. **Major battles are still to be won in order to regain control, but data from research output is on its way to being better managed as a resource for science, with Open Access for scientific publications slowly increasing and research data being made FAIR, as in Findable, Accessible, Interoperable and Re-usable.** Let us not forget though that this will not

happen without significant budgets being allocated to the required open infrastructure and, importantly, to training the next generation of data-savvy academics and data stewards. However, as digital makes analogue more efficient, finding this budget will mainly be a matter of choice.

More worryingly, big technology companies have already entered the education space with their own training programmes. These include Google and Amazon, partly working alone and partly providing training through universities, and Microsoft, which offers specific training for a fee via LinkedIn. Similarly, MOOC platforms are moving towards a model where most of the revenue comes from selling credentials directly to learners rather than hosting courses produced by universities. The move from non-profit to for-profit has already taken place for these types of online credentials, as non-profit MOOC platforms are being bought by commercial education companies. Here, all the data that can be gathered on learner behaviour is potentially valuable for selling education services. Nothing has yet been decided or even defined with regard to the usage data that is being generated through the use of digital platforms used for educational or research purposes. Who should own such data? Or should it even be owned, as it is after all being generated through public investments?

The times are as ripe as they were when Maxwell intervened and changed scientific publishing. While it cannot be argued that the situation around data in higher education is in as deplorable a state as publishing was then, there are other parallels. We have seen unprecedented growth in data around all university missions. The situation is so complex that it requires a dedicated level of professionalisation in academia, as a single university is no longer able to tackle these challenges on its own. That is also why we are once again seeing governments as the major providers of funding while sustainable models are sought. It remains to be seen whether even single (European) countries can tackle the issues on their own.

Public investments are a major element of data in academia and not just because they enable its complexity to be addressed. This is a key defining feature in itself, as stated in the 2017 UNESCO Recommendation on Science and Scientific Researchers, which urged us 'to treat public funding of research and development as a form of public investment, the returns on which are long term and serve public interest' (UNESCO, 2017). Building on this, UNESCO went further in its 2021 Recommendation on Open Science, recognising the significant value of science as a common good. The whole academic enterprise, including research data, could and should therefore be considered as a common good and access to it should be a universal right. The current global pandemic is probably the best example of such a need. Some even argue that it is a turning point which demonstrated that it was only through the swift global opening and sharing of data that researchers were able to rapidly develop vaccines and propose public health measures to be deployed and adapted. The ability to access and re-use data and protocols was vital.

Mutatis mutandis, what worked for meeting the scientific challenges of the pandemic also applies to most of the large-scale global challenges science faces this century. Indeed, most of the SDG's require the same kind of global, open, collaborative and scalable research efforts that were deployed to understand COVID and find vaccines. The work done on climate change is probably the best illustration of this.

So how does this reality of open science fit in with commercial players' move into the wider area of data in higher education? While the role of publishers is well known in scientific publishing, as mentioned earlier, their involvement in data has changed dramatically in the last decade. They increasingly trade knowledge and data, and its marketisation has been developed much further as they profit not only from publishing scientific results (using classical modes or by processing fees for open access) but also aggregate the data they collect on behaviour in publishing and the platforms of individual academics and higher education institutions. They then sell the analyses, for example, through Elsevier's Scopus database, Clarivate's Web of Science or Digital Science's Dimensions. Just as in publishing, universities are gradually becoming dependent on the commercial sector to provide analysis and strategic overviews of their own sector. And while this is not a problem as such, overreliance might become one if proper control is not retained.

These strategies shouldn't surprise us: all digital platforms do it as part of their business model – Amazon started by selling books and now sells the world - and what we are witnessing in science could therefore follow the same route.

For examples of the challenges academia faces with the intervention of publishers, we need only look at

two recent developments. First, looking at the current situation with metadata, there is the data that provides overarching information on data itself. One type of key metadata in science relates to publishing citations: the links that connect between and within scientific articles. Citation metadata is extremely useful and necessary for the development of knowledge. It allows academics to keep informed of advancements in any scientific field in order to help steer their own research or feed their research-based teaching. Importantly, it also establishes the origin of and therefore the credit given for scientific contributions. This credit in turn is used to evaluate science and its impact and can even support the allocation of funding. It is in this context that the Initiative for Open Citations (I4OC) was set up in 2017 'to promote the unrestricted availability of scholarly citation data'. Yet despite the importance of opening citations, key publishers' contributions were slow to be obtained, as was the case of Elsevier's recent decision to open its citations, or have yet to be achieved, as was the case of the Institute of Electrical and Electronics Engineers (IEEE), the American Chemical Society and the University of Chicago Press. This is due to commercial publishers trying to protect their newly developed and highly profitable business, in light of a more than likely decrease in their old business model (subscriptions). In essence it is nothing more than what digital platforms do: giving away part of their services for free and monetising new needs.

Another recent example of publishers' interference is their attempt to establish over-restrictive criteria in their guidance for researchers when they select a repository to manage, share and preserve their data. The Confederation of Open Access Repositories (COAR), supported by many other organisations, expressed its concerns over the nature of the proposed set of criteria and the lack of transparency in the process through which they were developed. While it might be in the best commercial interests of some players to impose guidelines that favour their own repositories, these should not substitute or conflict with guidance already available to researchers from their universities, disciplinary communities or funders. **It remains important to strengthen and expand the existing repository ecosystem and encourage the adoption of good practices. However, researchers must have a real choice, including the option to choose community-managed institutional, national, domain or generalist data repositories.**

In 2020, Elsevier offered universities in The Netherlands a contract that went well beyond reading and publishing scientific articles, and included research information, research assessment and Open Science. While the move was not surprising given the datafication of academia and its increasing marketisation, it did cause Dutch universities to stop and think. As a consequence, they developed a strategy aiming at safeguarding academic and digital sovereignty (Jansen, 2021). While sovereignty is most often linked to a territory or jurisdiction, they defined digital sovereignty as their ability to act and make decisions autonomously. They also defined **academic sovereignty as the protection of an independent academic community that can ensure transparent and reliable knowledge creation.** Both academic and digital sovereignties safeguard academic contributions for the long-term benefit of the economy, society and democracy.

Key to the Dutch universities' approach was the development of guiding principles to ensure open research (meta) data and data analytics, and to raise awareness in the research community. These principles are trusted and transparent provenance, openness of metadata, openness of algorithms, enduring access and availability, open standards and interoperability, open collaboration with third parties and academic sovereignty through governance. They are now being implemented and used in negotiations with publishers and other providers of services for universities. However, such an initiative cannot just be limited to the Netherlands, as it can help assess which data and services are critical for universities and must therefore be publicly controlled to safeguard academic sovereignty. New answers will need to be found to transform today's challenges into universities' future opportunities.

The issues concerning the digitalisation of teaching and learning are somewhat different from those of Open Science. As increasing digitalisation of universities leads to more data, through digitally enhanced learning or digitalisation of university management, there are increasing possibilities for private companies to offer data-based services to universities. **Education technology (EdTech) is a rapidly growing field of investment with billions of dollars' worth of investment being made globally every year. Such services not only aim to enhance learning and teaching, but also to offer holistic university management structures that will enable data-driven management of the institution as a whole.** These services will be plugged into wider

platforms, such as the Windows operating system of Google's Chrome browser, with the potential for more data to be harvested.

Attitudes to marketisation differ in Europe, as they do in the world. Some embrace the possibilities that data-driven services offer. **Universities across Europe generally want to begin using these new technologies, for example, for learning enhancement, while at the same time reporting the need for capacity building in terms of funding and improving the digital skills of staff. Aggregated data on student and researcher behaviour gives university leadership precise tools and evidence to improve student access and retention.** Data on international cooperation can target international relations with partners where researchers are already well connected – or develop new relations where they are not. In systems that are under pressure financially, EdTech can hold the promise to increase efficiency and deliver better experiences for students.

The political landscape and framework conditions around these areas are in flux. The European Union is launching new legislation to regulate the digital area, reigning in big technology companies in terms of how much they can use their dominant positions in the market and giving them new obligations to manage the content provided through their services. New regulation also concerns data and the use of artificial intelligence. For the latter, education is explicitly mentioned as an area of 'high risk' which requires high levels of transparency and human oversight.

However, it is clear that this type of legislation will only be partially able to establish a clear framework for the activities of universities. The framework conditions for universities and other types of knowledge institutions need to take into account the wish and duty to make their results open while avoiding being dominated by private, for-profit interests in the data economy. The Dutch discussion about digital academic sovereignty is an example of trying to come to terms with this balancing act. It would be an illusion to think that this autonomy can be retained through consensus within the academic community only: private providers and economic interests have long since made their entrance on the scene. The question is then how to protect universities and their values against dominance by these providers of everything from cloud storage to short courses.

One answer is legislation. At the time of writing, the European Union has plans to reconsider its legislation on data and copyright in light of the needs of the research community. Other, more ambitious proposals have been raised in the European debate. The Rector of the University of Amsterdam, Karen Maex, has notably called for a Digital Universities Act, which would give universities autonomy over the data they produce so that this data could not be used by technology companies to increase their power over what universities do.

Another idea is to balance the power of technology companies by providing open-source solutions created by the universities themselves. This would alleviate concerns among users about how their data is used and by whom, as the universities would design solutions that are fully transparent. However, it does require a certain critical mass of developers able to build and maintain software of a comparable quality to what is produced by large technology companies or other EdTech providers with large investor backing.

Infrastructure is also central. The pandemic demonstrated how private providers like Zoom or Microsoft Teams were able to meet the infrastructure requirements to move learning online. Voices have been raised claiming that public – or at least publicly controlled - infrastructure is needed in order to retain control of university data. This strategy would be similar to the initiatives that led to the European Open Data Cloud in the 2010s. However, it would be dependent on adequate and sustainable public investments, as well as the continued political will to coordinate such a structure at European level.

One possible outcome of these developments would be a highly uneven approach to digitalisation and universities' ability to retain control. Some countries will have the economic and political capacity to implement meaningful regulation and make investments in public infrastructure – as well as investment in professional staff at universities. In these countries, universities might be able to retain control. In other countries, resources might be so scarce that it would be difficult not to use the economically cheap and efficient solutions that large technology companies can offer, even if this means loss of control of the data that universities generate. Inequality absolutely must be part of this debate.

Finally, science is by default global and it will therefore be a delicate exercise to balance the need to regulate access and use of data across the globe with the de facto need to collaborate as academia already does.

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Conclusion and outlook: European universities, the green and the digital transition

Thomas Ekman Jørgensen

European universities are increasingly focused on contributing to sustainable development and, in particular, the green and the digital transition. There is a notable change from the earlier paradigm where universities pointed to their contribution to economic growth and competitiveness. Now, attention is being focused on the broad scope of their missions and how they provide solutions to the sustainability challenge.

The green and digital transition are especially pertinent for Europe's universities. These two topics form the red thread of European Union policies, and they are broadly perceived as the main challenges, as is clear from the European contributions to this report.

This focus is not only about universities as suppliers of societal demands: it also includes the dynamic between universities and their framework conditions. These conditions are shaped both by commercial and political stakeholders, and universities shape them in the continuous development of their missions: innovation in learning and teaching – including digitally enhanced learning – interdisciplinarity, international cooperation and Open Science are some examples that have been mentioned in the contributions.

European university policies have been extraordinarily dynamic in recent years. Transnational alliances between universities are deepening, and there is a renewed sense of purpose in the European Union as well as in the Bologna Process. The pandemic has also given many European countries an impetus to invest in developing their education and research systems. Political initiatives combined with the universities' awareness of their responsibility in the common challenges could be an accelerator of change for the years to come; this is definitely a space to watch.

3.5 Africa

Presentation of the Regional Chapter on African Higher Education

Ramon Torrent

HAQAA2[1] is an EU-funded project developed within the framework of the AU-EU partnership that was formally established in 2000 at the first Africa-EU Summit in Cairo, the sixth edition of which was held on 17-18 February 2022. The HAQAA2 implementing team includes the Association of African Universities (AAU), the German Academic Exchange Service (DAAD) and the European Network for Quality Assurance (ENQA), and is led by OBREAL Global.

OBREAL Global was honoured when, as leader of the HAQAA2 project, it was asked by GUNi to coordinate the Regional Chapter on Africa of the Special Issue of its World Report on "New Visions for Higher Education towards 2030". The content of the chapter largely coincided with the work already initiated within the framework of HAQAA2's policy component. Most contributions to it will therefore be developed and extended (and be given continuity, which is certainly an advantage) within this HAQAA framework.

The chapter begins with two introductory pieces offering an overview by two distinguished professors with a wealth of knowledge and experience: Wail Benjelloun (Morocco) and Juma Shabani (Burundi). This is followed by a presentation from a regional perspective, prepared by a leading regional institution, the Inter-University Council of East Africa (one of the eight official institutions of the East Africa Community), and co-authored by its Executive Secretary and Deputy Executive Secretary, Professors Gaspard Banyankimbona and Mike Kuria. It continues with four contributions on topics that are highly relevant in the African context and in terms of GUNi's Special Issue of its World Report, all written by leading and experienced specialists: Transforming Curricula by Charmaine B. Villet (Dean of the Faculty of Education at the University of Namibia), Research and Innovation: Learning and Innovation Strategies by Mafini Dosso (from the Ivory Coast, currently working at the Joint Research Centre of the European Commission), Internationalisation by James Jowi (founder of ANIE – African Network for the Internationalisation of Education - and principal education officer in the East African Community), and Quality and Quality Assurance by Jeffy Mukora (from Mozambique, with extensive experience in this area at national and regional/continental levels). The last contribution deals with an issue too often forgotten in academic literature: the need for data (and data collection) in order to engage in well-informed policy-making; it has been written by one of the members of the HAQAA2 Policy-and-Data Unit implementing team, Professor Kibrome M. Haile (a former Law School Dean at one of the leading universities in Ethiopia). Finally, the Secretary General of the Association of African Universities (AAU), Professor Olusola Oyewole, offers an overview from the AAU's perspective.

All these contributions are comprehensive, and demand and deserve careful reading and reflection. Without intending to summarise them, I will therefore attempt to draw from them some very general conclusions that could serve as a basis for further policy-oriented work. The conclusions will mainly be methodological, as I'm not African and history tells us that it is highly advisable for non-Africans to refrain from meddling with the substance of education systems in Africa.

The premise for the conclusions is as follows: higher education policy is defined and implemented at many levels. The two basic levels will always be (i) the "regulated", i.e. the universities (or, more generally, Higher Education Institutions, known as HEIs) themselves, endowed with autonomy to a greater or lesser degree, and (ii) the "regulators" at national level, i.e. governments and parliaments. At world level, the United Nations family of organisations, mainly UNESCO, offers a multilateral framework whose effective impact will however always be very limited as governments are extremely reluctant to relinquish their independence in an area as sensitive as education (including Higher Education). In the middle, between the national and multilateral levels, regional integration processes that can embrace higher education may appear. This is certainly the case in Africa, where two integration processes coexist and overlap: that of the Regional Communities and that of the Continent (the African Union, with an important continental player bringing together, at least potentially, all universities: the Association of African Universities).

1. See: https://haqaa2.obsglob.org/ and https://haqaa.aau.org/
2. See: https://obsglob.org/

The conclusions are as follows:

1) The different levels for HE policy definition and implementation in Africa must be adequately articulated. Not all HE aspects can or should be dealt with at all levels. This will only lead to a duplication of efforts and contradictions. Being overambitious at one level necessarily leads to a dispersion of efforts and ineffectiveness.

2) Most overriding challenges faced by African higher education seem to have been well identified in Professor Benjelloun's contribution: i) Massification, ii) Reform of Organisational Structures, iii) Quality, and iv) Employability.

3) The topics concerning the existing processes of African integration also seem to have been well set out by Professor Shabani: i) Recognition of Academic and Professional Qualifications, ii) Harmonisation and Convergence, including Quality Assurance, and iii) Integration and Networking of Institutions and Infrastructure.

4) Professor Shabani's and other contributions strongly emphasise the fact that African integration in higher education (as in many other areas) must combine and adequately articulate the regional and continental levels. The current, very important, role of regions is well explained and illustrated in the IUCEA's contribution, co-authored by Professors Banyankimbona and Kuria). And Professor Haile's contribution also explains very clearly how regions could and should be used as building blocks of continental integration.

5) On issues of substance:

- Professor Villet's contribution offers a very convincing argument on i) the need to accept that classrooms cannot remain anchored in the past, ii) teachers should no longer be seen as those who possess a disciplined body of knowledge and skills to pass onto the learner through deliberate instruction, and iii) curricula should no longer be conceived as an accumulation of separate courses and credits. It also offers an appealing guiding principle for the decades ahead: the task of an adequate higher education philosophy is not only to understand the university or even to defend it, but to help in changing the institution (in particular, by applying a transformative approach to curricula design and implementation).
- Professor Villet's arguments are backed up by Dr. Dosso's contribution. She argues very forcefully that i) universities, as one of the elements of the quadruple helix – academia, civil society, industry and government – should feel obliged to contribute to harnessing the emerging technological and innovation potential and opportunities to the benefit of local communities; and ii) this requires novel place-based and people-centred policymaking approaches. These place-based, 'no-one-size-fits-all', policies should help to create, capture and redistribute more value locally by upgrading the learning and innovation capabilities of local players. And it is pretty obvious that these objectives will not be achieved if curricula remains anchored in the past and at least some of Professor Villet's proposed transformations do not take place.
- Dr. Jowi's contribution showcases how African higher education systems have advanced in the field of internationalisation and singles out both the challenges and the opportunities that lie ahead. Among the former, i) the historical and growing knowledge divide between developed regions (the North) and Africa, ii) brain drain, and iii) curriculum reforms arising from internationalisation activities that lead to knowledge epistemologies and content from other world regions dominating the curricula of most African universities. Among the latter, i) improvement in capacity and management, ii) international research collaborations, and iii) the possibility of reversing African diaspora, turning it into a "brain-gain".
- Dr. Mukora's contribution explains a success story that proves that optimism about the future of African continental integration is not unfounded: i) the production, at continental level and within the framework of HAQAA1, of the African Standards and Guidelines for Quality Assurance (ASG-QA), and ii) the ongoing endeavour, within the framework of HAQAA2, to produce a User's Guide. It also points to the necessary interaction and complementarity between the continental and regional levels of African integration in Higher Education.

6) Underlying all this is an overarching issue: the need to gather adequate data to be used in well-informed policymaking, as explained in Professor Haile's contribution.

All in all, the chapter achieves the goals of any venture in the field of knowledge production: systematising existing knowledge, contributing new knowledge and laying the foundations for further future advances.

From a wider political perspective, I will end this presentation with the last sentence of Professor Oyewole's overview from the AAU's perspective:

> "Africa has a very young population. Education is the only viable way of equipping these youths for the future. Special attention should be given to youth development in Africa by ensuring that Africa builds up the youths that will drive its development. This effort must also embrace the higher education sector as the apex and the server of the entire education system".

It summarises why we and everyone else should care about African higher education.

Challenges and perspectives of North African universities: a window on african higher education

Wail Benjelloun

Abstract

North African (NA) Higher Education (HE) includes some of the oldest universities in the world and boasts a prestigious history in both sciences and humanities. The colonial interlude introduced new methods of education but left a barren tertiary landscape, and the newly independent countries quickly established national universities that successfully trained their administrative, scientific and technical cadres. Today, the NA university system faces other challenges linked to four major factors: massification and sustained educational demand, reform of organisational structure, quality and employability. From an employment perspective, NA countries are losing the contribution of more than a third of their human potential in spite of educational expansion, through inappropriate curricula and training and through an inability to incorporate youth into economies that are also growing. To remedy the situation, actions such as economic diversification and the introduction of quality labour-intensive value-added economic initiatives should be facilitated, as should the encouragement of entrepreneurship and access to financing for job-creating investments. Looking to HE in the African Continent from NA can be of interest because of common historical references, missions and objectives, as well as challenges.

Introduction

Looking at Higher Education (HE) in the African Continent from North Africa (NA) can be of interest because the similarities in terms of historical references, missions, objectives and challenges do not seem to be limited to the region but also embrace most nations of the continent.

All HE systems in North Africa stem from traditions that are deeply rooted in the region's history and reflect the high value placed on education and training in NA societies. In many cases they serve as social equity mechanisms, enabling transitions from relatively deprived to empowered status. They also frequently serve as national think-tanks and sources of social commentary. The future of NA universities will depend on their ability to successfully overcome the major challenges facing them as they seek to harness the potential of young people in the region in order to meet its development needs.

Historical perspective

The countries of North Africa share a deep-rooted educational tradition, having established some of the world's oldest schools, universities and HE institutes. Al Qarawiyine in Morocco (859), Ez Zaytouna in Tunisia (864) and Al Azhar in Egypt (972) are all renowned Universitates Magistrorum et Scholarium founded in the ninth and tenth centuries. Enrolled at these universities were students from a series of equally famous medersas (secondary) and msids or kuttab (primary) schools in all the major urban centres, which taught Arabic and Islamic theology. During the colonial period, the occupying powers established schools to serve their administrative needs, with classes taught principally in French or Spanish. In Morocco, under "the Berber Dahir" promulgated by the French in an attempt to separate the Arab and Amazigh populations, a series of "Berber schools" were launched, which instead later became hotbeds of nationalist sentiment. A limited number of "Schools for the Sons of the Elite" were also established, with French instruction. In Algeria, the Khaldunia and the Tachfiniya (Tlemcen) medersas were destroyed by the French colonial power in 1873 and replaced by three colonial medersas in Constantine, Médéa and Tlemcen. These were founded to train secondary-level students in religion, law and education (Janier, 2009), with the aim of facilitating the territory's administration. In Egypt, the Mansouryas (religious schools) coexisted side by side with the madrasas (modern schools). Napo-

leon I founded the Institut Français in Cairo in 1798. Early in the 19th century, Mohammed Al Pasha sent the Egyptian Missions to France to perfect mastery of the French language.

In the Maghreb, a series of higher education institutes were established which catered principally to French nationals and provided research on the natural and cultural wealth of the occupied countries. In the period leading up to Moroccan independence, nationalist figures and organisations started what was known as the free school movement, with modern curricula and teaching in both Arabic and French. In Egypt, Egyptology studies were founded. Overall, educational opportunities for the local populations remained extremely limited. For example, when Algeria gained independence in 1962, the adult illiteracy rate was 87% (Adam, 1964).

With independence, North African (and especially the Maghreb) countries quickly realised that the construction of viable sovereign administrations depended on the development and generalisation of education. In Morocco, Algeria and Tunisia, the main principles governing the national educational system were the nationalisation of teaching cadres, the unification of curricula, the Arabisation of all teaching programmes, and equitable access to education (from primary through to university). Given the limited budgetary and/or available human resources at the time, the costs of these commitments were to prove onerous. Educational institutions at all levels were placed under close government scrutiny to ensure adherence to these principles. The historical national universities of the region were led by Cairo University, founded in 1908. The University of Benghazi (Libya) followed in 1955, Mohammed V University was launched in Rabat in 1957, the Tunisian University was created by Law no. 60-2 of 31 March 1960 and the University of Algiers, which had been created by the French in 1910 and essentially catered to colonists' needs, was transformed in order to meet national requirements in 1962. The University of Nouakchott was established in 1981.

Generally speaking, **HE in Morocco, Algeria and Tunisia includes universities under Ministry of HE supervision, as well as a series of prestigious and highly selective Institutes of Higher Studies (IHS), access to which is generally far less open; they either report only to the Ministry of HE or are jointly supervised by another Ministry in their area of specialty. This has led to a two-speed system (Université de Rouen, 2019; Conseil Supérieur de l'Education, de la Formation et de la Recherche Scientifique, 2018; Dhaoui, 2016) with different levels of quality.** These figures should be considered in light of unemployment statistics (CREAD, 2011) showing that in the 15 to 24-year-old age group in all three Maghreb countries, nearly half of whom hold university degrees, unemployment was over 20%. This is perhaps an indication that in addition to the appropriate economic decisions that may need to be made, university programmes should also be re-evaluated in terms of their quality and appropriateness for the job market.

A quick look at the current situation in NA HE points to some significant challenges which fall into four intertwined categories: massification, reform of organisational structure, quality and employability.

Massification

University-age student numbers continue to increase significantly in Morocco, Algeria, Tunisia and Egypt, and to a lesser degree in Mauritania and Libya because of their demographics. Massification has required additional funding for the construction of new facilities and the acquisition of additional equipment. It has resulted in increased class sizes, decreasing faculty–to-student ratios, and generally challenged the quality of higher education. Massification has also been a contributing factor in the increasing numbers of university student drop-outs, given the difficulties in ensuring appropriate student support and guidance. All NA HE systems have had to develop new strategies to face these challenges. The following brief national summaries reflect the current demographic pressures in the region:

There are 17 public universities in Egypt, 16 private universities, 89 private higher education institutions and 51 public non-university facilities. In 2018-19 the Egyptian HE system included 3.1 million students, a 4% increase relative to the 2.99 million reported in 2017-18.

Libya has 14 (10 accredited) public and 19 private universities, of which 7 are accredited by the National Centre for Quality Assurance and Accreditation. In 2020-2021 there were 400,000 students in Libyan universities, in a system under reconstruction after being severely affected by the anti-Gadhafi uprising and the continuing political and financial turmoil.

Tunisia has 13 public universities with 203 schools and 24 Higher Institutes, a relatively stable situation since 2014-2015. These were complemented by 26 private institutions in 2018-2019. Total enrolment in 2018-2019 was 350,000 students, up from 339,619 in 2014-15. The private sector consisted of 63 institutions in 2016, serving some 30,000 students – roughly 8% of the student population.

There were 1.7 million students in Algerian HE in 2018, with over 2 million expected for 2021-2022. The Algerian university network is composed of 50 universities, plus 13 academic centres and 31 Higher Institutes, making a total of 107 HE faculties or institutes. An embryonic private sector with a dozen institutes now hosts 1% of the HE student population. The drop in oil revenues has impacted the budget of a system where students pay no tuition, room or board fees.

Morocco has 14 public universities, 73 public HE institutes not affiliated to universities, 5 PPP (public-private partnership) universities, 5 private universities and 150 private HE institutes not affiliated to universities. In 2021-2022, 1.2 million students are enrolled in the Moroccan HE system, a figure that stood at 100,000 at the end of the 1980's and 420,000 in 2011. Currently, public university programmes account for 95 percent of student enrolments, whereas private and PPP universities and institutions receive no more than 5% of the total HE student population.

Mauritania has a relatively small HE environment, largely based in Nouakchott. In recent years, five private universities have been established alongside branches of some international universities. There were 19,371 HE students in 2017, compared to 19,243 in 2013.

Reform of organisational structure

NA educational systems have undergone a series of reforms, resulting in not only pedagogical but also organisational changes as they moved to align with international standards. **While all North African countries mention university autonomy in the laws currently governing public higher education, such autonomy remains limited in view of public universities' nearly complete reliance on government funds for their annual budgets, which they can spend only under the stringent control of government financial authorities.** Their ability to spend, invest, generate funds or generally engage in economic activities remains under close supervision and their status is in fact closer to that of an administrative entity. Teaching staff are civil servant employees of the HE ministry, and hiring and firing are subject to civil service process. Finally, leadership positions are closely monitored and, no matter the procedure for nomination/election, are consecrated by a high-level executive decree. In spite of these obstacles, which seem to be linked to the historical development of higher education in the region, significant progress seems possible given the interest in HE shown by all university players and all segments of society and the pressure they are currently exercising to influence HE policy. Health and Education are considered by NA societies at large as the main factors influencing development at this stage and their management is being closely followed by a wide spectrum of stakeholders in all five countries, ranging from students to parents to regional councils.

Quality assurance

Another major challenge to NA HE is posed by quality and quality assurance (QA) mechanisms. The lack of quality and inappropriate design of curricula and programmes is frequently cited as a reason for inappropriate training and consequent graduate unemployment. NA countries established their quality assurance agencies rather late, starting in the second decade of the 21st century, no doubt influenced by European partners and their adoption of the LMD (Bachelor-Master-Doctorate) within the framework of the Bologna process. These agencies are not yet fully operational, even if some countries have made more progress than others.

The situation in Tunisia is particularly relevant. The Tunisian QA framework was established with the objectives of encouraging a culture of quality within higher education institutions, implementing a national quality enhancement programme and fostering the expertise necessary for higher education evaluation and quality (Décret no. 2012-1719, République Tunisienne, 2008). This decree constituted a legal framework providing for the establishment of an active National Authority

for Evaluation, QA and Accreditation by 2011. A complementary decree (Décret nº 2012-1719, République Tunisienne, 2012) appointed the agency as a contractual partner for universities with two functional roles: a quality enhancement responsibility and an evaluation, accreditation and standardisation function. It operates under the supervision of the ministry in charge of higher education. The Tunisian national strategy for HE additionally laid down a number of qualitative objectives aimed at reaching the standards of OECD countries. Quality in HE thus became a principal concern of national policy.

In confirmation of the anchoring of North African HE to international standards, the Tunisian QA programme sets its own quantitative references, and the Tunisian national strategy for HE has adopted qualitative objectives aimed at attaining the standards of OECD countries. Quality has thus become a primary focus in Tunisian higher education, scientific research and technology policy (Methani, 2009).

Tunisian universities were encouraged to establish committees to monitor the quality of academic programmes at Bachelor, Master and Doctoral levels and to improve teaching methodology, curricula, infrastructure and equipment, as well as making financial and administrative management more efficient. Competitive access to financial incentives was made available to support this initiative. The committees are in charge of producing internal evaluation reports, monitoring the established programmes, in particular those related to quality, and formulating proposals on quality enhancement. Up to September 2009, the national higher education system included 162 committees at institutions, with 1200 members, 300 of whom were representatives of socio-economic partners. QA activities were centralised in each university under the supervision of a QA committee. The participation of socio-economic partners was meant to facilitate university relevance and improve graduates' employment prospects through the setting up of business incubators and business hubs.

The financial sustainability of the Tunisian quality enhancement programme in higher education remains highly dependent on competitive funds managed by the Ministry of Higher Education, Scientific Research and Technology, which apportions funding to universities on the basis of a contractual process. This contract-based approach was meant to bolster decision-making autonomy and reinforce universities' capacity to negotiate objectives, as well as closely monitoring outcomes through the use of well-defined indicators.

The early years of the quality enhancement activities of the Tunisian agency focused on management capacity enhancement, institutional accountability, better use of public funds and reinforcing competitiveness for employability. Under its evaluation mandate, the agency has sponsored the training of 120 experts through its own programmes and cooperation with European partners.

The apparent contradiction between "decisional autonomy" and "financial dependence", which generally characterises the university function in NA countries, has thus now also been incorporated into the legal framework governing the Tunisian quality assurance agency. The 2008 decree in fact allowed universities to switch their legal status from general "public institutions" to specific "public institutions of a scientific and technological nature", if they met certain financial, budgetary and managerial requirements. This specific legal framework is similar to French legislation and allows universities more administrative and financial flexibility and autonomy. Thus far, only the Virtual University of Tunis has met the stringent criteria established to obtain this status.

The situation in Morocco is not very different. The Moroccan Agency was established by Royal Decree no. 1-14-130 (31-7-2014), based on Law 80-12, as applied through Decree no. 2.15.813 (Royaume du Maroc, 2015). The National Agency for Evaluation and QA (ANEAQ) has been placed under the authority of the government department in charge of HE and scientific research and is subject to the regulations and prerogatives of the Minister of Economy and Finance with regard to the running of public institutions.

The Agency is charged with evaluating the higher education and scientific research system, with the aim of guaranteeing quality. It thus evaluates both public and private universities and institutes, as well as research centres, with reference to their specific missions and scientific projects. It undertakes the assessment and accreditation of undergraduate and Master-level educational tracks, as well as the evaluation of Doctoral Schools to determine the quality of training programmes and the research work undertaken under their supervision. The Agency also evaluates work undertaken at national research centres and programmes conducted within the framework of national and international cooperation programmes. In addition to its

mission of quality enhancement in the higher education sphere, the Agency may also be asked to undertake specific missions for universities or other ministries that run educational or research facilities, or for departments such as the Higher Council for Education, Training and Scientific Research and the Hassan II Academy for Scientific and Technical Research. These prerogatives give the Agency potentially interesting territorial reach within the national regionalisation programme (Commission Consultative de la Régionalisation, 2010). The Agency may also be mandated to undertake quality enhancement evaluations for foreign organisations, within the framework of cooperation agreements with the government of Morocco.

ANEAQ is under the supervision of an Administrative Council presided by the Head of Government and composed of two representatives of the Ministry of Higher Education alongside 12 other members, including representatives of other government agencies, past presidents and presidents of public universities and an elected staff member of the Agency. The Administrative Council has wide powers in managing the Agency's affairs including budget allocation, services and internal regulations. The Agency went into full gear in the academic year 2017-2018, evaluating the curriculum accreditation and reaccreditation files of all public and private universities and institutes.

The sustainability of the Moroccan system has been assured through government salaries for ANEAQ employees and the payment of evaluation fees for each submitted track, with accreditation valid for 3 years for Bachelor-level tracks and 2 years in the case of Master-level tracks. A select number of faculty serve as experts in these operations. Until the creation of ANEAQ there was no reliable mechanism to compensate faculty who served as accreditation experts. The special status of ANEAQ has now facilitated this process.

Algeria has taken a more gradual approach to QA. The Ministry of Higher Education and Scientific Research established a National Commission for the Implementation of QA in HE (CIAQES) on 31 May 2010, the first phase approach of which seems more decentralised and oriented towards internal evaluation within each university. The Commission has also sponsored QA campaigns that involve several universities organised as consortia. In much of its work, the Commission relies on and builds upon the work of university quality committees (CIAQES, 2016; CREAD, 2011). During its first phase, the CIAQES thus oversaw the launch of quality assurance cells in each university institute, and the appointment and training of directors for these units (RAQ: responsable des cellules d'assurance qualité). These structures and associated experts are responsible for local internal evaluation processes, thereby implementing QA operations in universities. The establishment of standards was one of the main missions assigned to CIAQES and was carried out in cooperation with the local RAQs, for whom it represented the culminating project of the training given to them in 2012 and 2013.

The National Book of Standards includes all the usual norms and standards in the fields of training, research and governance, with attention also paid to three other fields of national importance: university life, university infrastructure, university-socioeconomic environment relations, and inter-university cooperation and mobility. The document outlines the objectives to be attained for a desired state of function through 123 objectives and the measurement of 219 criteria to determine their attainment. The Standards were first presented at an international seminar in 2014, and were published in 2016.

After having successfully established quality assurance cells in universities and higher education institutes, supervised the training of quality assurance managers, and defined a national quality standards document, the final mission of CIAQES remains the creation of a national QA agency. The process has been rather slow and progress uneven. Not all universities have managed to set up functional quality assurance cells and this may be due to the fact that not all have developed at the same pace. In 2017, the Ministry of HE and Scientific Research launched an operation to generalise internal evaluation in all Algerian universities in preparation for the launch of a fully-fledged quality assurance programme.

In terms of financial and administrative sustainability, CIAQES has the status of a scientific society attached to the Secretariat General of the Ministry of Higher Education and Scientific Research, and is thus under ministry supervision and dependent on its funding.

In Egypt, a National QA and Accreditation Committee (NQAAC) worked for five years to promote quality assurance plans among higher education institutions, prepared the national law for accreditation and sought its endorsement by the Egyptian parliament, and laid

the groundwork for the independent body that became the National Authority for QA and Accreditation in Education (NAQAAE). The need for a quality assessment agency was one of the main recommendations of the 2000 Educational Reform Conference, and it was established in 2007 by Presidential Decree. As the accrediting body for all Egyptian educational institutions, NAQAAE produced the accreditation manuals, national academic reference standards, benchmarks for postgraduate programmes and templates for evaluation and review processes, as well as reviewer kits. As stated in its objectives and core values, NAQAAE (n.d.) supports self-evaluation efforts and undertakes overall institutional evaluations. It granted its first institutional accreditation to the Faculty of Medicine at Suez Canal University.

Employability

The limited progress made in terms of QA and curriculum development, coupled with a high demographic growth rate and economies that are growing without creating sufficient jobs, has resulted in a difficult situation in terms of unemployment, especially among young people (15-24 years old) and women, in all five NA countries. In addition, a Gallup survey in 2011 showed that more than half of unemployed young people in Egypt and Tunisia were seeking government jobs.

In 2019, according to the International Labour Organization (ILO), NA countries reported an average youth unemployment rate of 30.2%, compared with a world average of 13.6% (Webmanagercenter, 2021). In 2020, the CIA World Factbook placed Algeria among the ten countries worldwide with the highest youth unemployment figures, over 39%. In NA, only Libya reports a higher rate (49.54% at the end of 2019) and in Africa, only South Africa stands higher at 53% (Haut-Commissariat au Plan, 2021). Such high rates of unemployment of course compromise the ability of the nation and the entrepreneurial sector to grow and innovate. In Morocco, the higher the diploma, the fewer the opportunities for work. In the last trimester of 2021, youth without qualifications had an unemployment rate of 4.4%, those with a medium-level diploma stood at 14.7%, while those with higher-level diplomas had a rate of 25.7%.

Mauritania today has a youth unemployment rate of 44%, of which 271,000 are diploma holders between 19 and 35 years of age. In spite of the country's natural resource opportunities, the economy cannot cope with the 50 to 60,000 new graduates each year. Efforts to remedy the situation involve professional training programmes, the private sector and university reform (Kassataya, 2021).

Tunisian unemployment was reported at 18.4% in 2021 for the general population (15.9% for men and 24.1% for women). For young people between 15 and 24 years of age, unemployment at the end of 2021 had reached 42.8% for men and 41.7% for women. As for HE diploma holders, at the end of 2020 unemployment was estimated at 30.1% (17.6% for men and 40.7% for women) (Statistiques de Tunisie, 2021). Public sector employment constitutes a large share of total formal employment. More than 70 percent of non-agricultural employment in Egypt and Libya is in the public sector (Mottaghi, 2014).

It is clear from the above figures that NA countries are losing more than a third of their human potential in spite of educational expansion, due to inappropriate curricula and training and an inability to incorporate youth into economies that are also growing. This seemingly paradoxical situation merits close analysis and the identification of solutions to avoid the resulting painful losses in terms of GDP and innovation, and the consequent potential social upheavals. In order to remedy the situation, actions along the lines of economic diversification and the introduction of quality labour-intensive value-added economic initiatives should be facilitated, as should the encouragement of entrepreneurship and access to financing for job-creating investments.

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Continental and regional integration of higher education in Africa: an overview

Juma Shabani

Abstract

The process of integrating a higher education system can be seen as a series of activities that contribute to the construction of a higher education area. The methodology used to develop the African higher education area is different from that used in Europe, which was supported first by the European Community and then by the Bologna Process. In Africa, it will build on the achievements of regional economic communities and will be sustained on three main pillars: (a) the legal framework for mutual recognition of qualifications; (b) the processes of harmonisation, homogenisation and convergence, including Quality Assurance; and (c) the integration and networking of academic and research institutions and infrastructure.

This contribution analyses the challenges and opportunities of higher education integration and suggests a methodology for building the African Higher Education Area. This methodology is based on harmonisation processes implemented in a coordinated way at regional and continental levels. These include harmonisation of curricula, quality assurance and accreditation mechanisms, credit transfer and accumulation systems, and qualifications frameworks. A major challenge remains to be addressed, namely mutual recognition of professional qualifications to enable nationals of one country to practice a profession in another country.

Introduction

The process of integration of a higher education (HE) system can be conceived as a series of activities that contribute to the construction of a higher education area. In Africa, this process started at least in 1903 with the creation of the "Ecole Normale William Ponty" in Saint Louis, Senegal, to train the human resources needed for French-speaking West Africa. This process continued and has led in the recent past to the creation of other joint regional institutions, including centres of excellence and the Pan-African University, and to the establishment of mechanisms for mutual recognition of qualifications at regional and continental levels.

The methodology used to develop the African higher education area is different from the one used in Europe, which was supported first by the European Community and later by the Bologna process. In Africa, it will build on the achievements of regional economic communities, and will be sustained on three main pillars: (a) the legal framework for mutual recognition of qualifications; (b) the processes of harmonisation, homogenisation and convergence, including quality assurance; and (c) the integration and networking of academic and research institutions and infrastructure. I will address each of them in turn in this contribution.

1. The legal framework for mutual recognition of qualifications

This framework includes the African Continental Qualifications Framework and the Regional Conventions on mutual recognition of qualifications and Mutual Recognition Agreements (MRAs).

1.1. Mutual recognition of academic qualifications

The African Convention, known as the Arusha Convention, was adopted in December 1981 in Arusha, Tanzania. The implementation of this Convention has faced several challenges, mainly caused by (a) the diversity of HE systems and languages of instruction inherited from colonisation, (b) the deterioration of HE quality since the 1980s and (c) the ineffectiveness of the regional committee in charge of implementation of the Convention. These challenges partly explain why, by 2001, only 21 countries and the Holy See had ratified the Arusha Convention (Shabani & Okebukola, 2017).

In 2001, the Regional Committee proposed revising the Convention in order to address the identified challenges and make the provisions necessary to enable the Convention to contribute to the construction of an African HE space and the development of a global convention on the recognition of qualifications (UNESCO, 2014).

The revision of the Arusha Convention spanned from 2002 to 2014, when a revised Convention, called the Addis Ababa Convention, was adopted and signed by 16 countries. The revision process mainly involved UNESCO, the Commonwealth of Learning and the African Union (Shabani & Okebukola, 2017). While the Convention is a major instrument for promoting the mobility of students, academic staff and researchers and for strengthening accreditation and quality assurance mechanisms, it is noted that academic staff and quality assurance agencies were not adequately involved in the process. This may partly explain why the revision took such a long time. The Convention entered into force in December 2019 after ratification by 13 State Parties.

The revised Convention contains new objectives related to the establishment of effective quality assurance and accreditation mechanisms at all levels; the development of joint training and research programmes; the harmonisation of higher education qualifications and the use of national and regional qualifications frameworks (UNESCO, 2014). It is assumed that the potential benefits that will be derived from these objectives should convince countries to ratify it. However, at present, the ratification process seems to have come to a halt.[1]

Conventions on the mutual recognition of qualifications are also implemented at regional level, particularly in the African and Malagasy Council for Higher Education (CAMES) member states. CAMES was established in 1968 in Niamey, Niger, to harmonise and coordinate higher education policies and programmes in its member states. Currently, CAMES is composed of 19 countries (CAMES, 2021). In 1972, in Lomé, Togo, CAMES member states adopted a regional convention on the mutual recognition of qualifications. The ratification of this convention led to the establishment of the Programme for Recognition and Equivalence of Degrees (PRED). This programme is implemented through regional colloquia that bring together experts from CAMES member states and partner organisations.

1.2.- Mutual recognition of professional qualifications

In Europe, the mutual recognition of professional qualifications is governed by Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005, as amended by other Directives.[2]

In Africa, each regional economic community and the African Union have adopted protocols containing commitments on the free movement of people and services. The idea would be to implement them through Mutual Recognition Agreements (MRAs). However, these agreements face several very important challenges, which are discussed in the section below.

1) The East African Community (EAC)

The EAC consists of Burundi, Kenya, Rwanda, Tanzania, Uganda and South Sudan. The EAC Common Market Protocol entered into force in 2010 following ratification by State Parties. It provides for five basic freedoms of movement, including the free movement of people and services, and rights of residence and establishment. In accordance with Article 11 of this Protocol, State Parties have committed to harmonising their curricula and accreditation procedures to promote the mutual recognition of qualifications and facilitate the free movement of people and services. To this end, four MRAs for accountants, architects, engineers and veterinarians had been signed by 2016 (EAC, 2017).

Kenya, Rwanda and Uganda have signed all four MRAs. Burundi has not yet signed the MRAs for engineers and veterinarians. Tanzania has not yet signed the MRAs for architects and veterinarians. Negotiations on the MRAs for surveyors and lawyers were concluded in 2016 but have not yet been signed. Negotiations on the MRA for pharmacists are under discussion. It should be noted that South Sudan has not yet been included in these MRAs.

Despite the signing of these agreements, the number of professionals who benefit from them is very limited. This is mainly due to the challenges faced in implementing these MRAs, including incompatibilities with national policies and a varying political will for integration.

A 2014 World Bank study of legislation in the EAC identified 63 measures that are incompatible with the liberalisation of trade in services within EAC State

1. See: https://unesdoc.unesco.org/ark:/48223/pf0000378425_eng/PDF/378425eng.pdf.multi.page=11

2. See the last consolidated version of December 2021: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02005L0036-20211210

Parties (World Bank, 2014). For example, In Kenya, (a) registration of foreign professionals is subject to proof that such specialised skills are not available in the country; (b) foreigners cannot practice law-related professions without the supervision of a local lawyer. In Uganda, (a) registration of foreign engineers is allowed for residents who have been in the country for 6 months of each year for the past 5 years; (b) an accountant must have several years of experience and be a member of one of the 15 international accountants' associations in order to obtain a work permit; (c) applicants to the legal profession must be resident in this country and have five years' experience in an approved country; (d) architects are required to practise on a temporary and supervised basis (World Bank, 2014).

The EAC has embarked on a process of removing the identified barriers to the implementation of MRAs. In November 2021, the EAC secured funding to facilitate the cross-border movement of professionals through the use of digital technologies (Jowi, 2021).

2) Other communities

The other economic communities and regional monetary unions have also adopted protocols on the free movement of people and services and made commitments on the mutual recognition of professional qualifications in a selected number of professions. However, available information shows that the results achieved in implementing these protocols are very limited.

3) The African Union (AU)

In 2018, the AU adopted a protocol to the Abuja Treaty establishing the African Economic Community on the free movement of people, the right of residence and right of establishment. In order to operationalise this protocol, in Article 18 African countries committed to mutually recognising qualifications obtained in a partner state. As of December 2021, this protocol had only been ratified by four countries - Mali, Niger, Rwanda, and Sao Tome & Principe - whereas 15 ratifications are required for its entry into force.

4) Conclusion

The conclusion to be drawn from the situation at continental and regional levels is that mutual recognition of professional qualifications to enable nationals of one country to practice a profession in another country remains one of the biggest challenges for integration.

2. The processes of harmonisation, homogenisation and convergence, including quality assurance

2.1. Scope and limits of the "Licence-Master-Doctorate" (LMD) reform.

1) The origins of the LMD reform.

The LMD reform, where the "L" refers to the old French 3-year licence degree, originated in the Bologna process to build a European higher education area.

The LMD system is characterised by the following elements:

- Three-level degree system: Bachelor, Master and Doctorate;
- Organisation of courses into semesters and teaching units;
- Implementation of the European Credit Transfer System (ECTS): Bachelor (180 ects), Master (120 ects) and Doctorate (180 ects);
- Automatic issue of a descriptive appendix to the degree

The main objective of the LMD reform is to harmonise higher education systems, curricula and quality assurance mechanisms in order to promote student mobility, the mutual recognition of qualifications and lifelong learning, and to improve graduate employability.

2) Implementation of the LMD reform in Africa

A number of African countries adopted the LMD reform from 2003 in order to maintain their historical university cooperation links with Europe, in particular France, and to enable graduates from their respective countries to fully benefit from the opportunities offered by this reform. Morocco, Tunisia and Algeria adopted this reform in 2003, 2004 and 2005, respectively.

In sub-Saharan Africa, the LMD reform was first adopted between 2005 and 2007 by the Economic and Monetary Community of Central Africa, the African and Malagasy Council for Higher Education and the West African Economic and Monetary Union. It was subsequently adopted by the member countries of these communities from 2010 (Shabani et al., 2014).

The implementation of the LMD reform has required the revision and harmonisation of existing programmes or the development of new programmes according to a competency-based approach, and the implementation of effective accreditation and quality assurance mechanisms for these programmes.

In view of this perspective, the Council of Ministers decided in 2006 to entrust CAMES (2006) with the mandate of accreditation of institutions and programmes in its member states.

The process of programme accreditation by CAMES takes an average of 17 months. It is open to public and private higher education institutions in member states and beyond that have been previously accredited at national level and have already graduated at least one class of students. This approach is different from the accreditation mechanisms used in other parts of Africa. In the EAC, the Inter University Council for East Africa (IUCEA), which has the mandate of promoting comparable higher education standards and systems, has defined accreditation guidelines and standards that are used by State Parties to develop their own benchmarks and accredit programmes at national level.

There is also a difference in the concept of credits used in countries implementing the LMD reform where the credit transfer and accumulation system is compatible with the European system and other countries. For example, while the LMD system requires 180 credits to obtain a PhD degree, 540 credits are required in the EAC and 360 in Southern African Development Communities (SADC) countries.

2.2. Quality assurance and accreditation pathways

Harmonisation of accreditation and quality assurance in Africa is promoted through two initiatives: the Harmonisation, Quality Assurance and Accreditation in African Higher Education (HAQAA) project and the Pan African Quality Assurance and Accreditation Framework (PAQAF)

1) The HAQAA 2 Project

HAQAA 2 is a joint initiative of the African Union and the European Union, funded by the latter, designed to consolidate the results of the first phase of the project (HAQAA 1) implemented between 2016 and 2018. HAQAA 1 contributed to the implementation of the PAQAF and the African Quality Rating Mechanism (AQRM), and developed the African Standards and Guidelines for Quality Assurance (ASG-QA) in Higher Education, which were finally endorsed at AU level.

HAQAA 2 has been implemented between 2019 and 2022. It will contribute to promoting a quality culture in higher education institutions; strengthening the capacity of quality assurance agencies to implement the ASG-QA; strengthening the capacity of the African Union to implement the PAQAF and the Continental Education Strategy for Africa (CESA); and coordinating the feasibility study for the establishment of the Pan-African Quality Assurance and Accreditation Agency.

2) The Pan African Quality Assurance and Accreditation Framework (PAQAF)

The PAQAF is a conceptual framework to promote the harmonisation of quality assurance and accreditation of higher education in Africa. It was adopted by the African Union in 2016. It comprises six tools and activities that are at different stages of design and implementation, namely (Okebukola & Fonteyne, 2014): (a) the ASG-QA, (b) the Continental Qualifications Framework, (c) the African Quality Rating Mechanism, (d) the Addis Ababa Regional Convention, (e) the African Credit Accumulation and Transfer System and (f) the Continental Register of Quality Assurance Agencies

The ASG-QA and the Addis Ababa Convention have been discussed in the sections above. And a specific section on the issue of the Qualifications Framework follows this one.

African Quality Rating Mechanism (AQRM)

The AQRM was adopted by the African Union in 2007 to establish a system for assessing the quality of higher education institutions and comparing their performance on the basis of a set of common pre-established criteria. The AQRM is not an instrument for ranking institutions. It is a tool for the self-evaluation of institutions and programmes. It allows for the grouping of institutions that have the same level of quality. The AQRM will therefore facilitate implementation of the ASG-QA through self-assessment and programme harmonisation.

African Credit Transfer and Accumulation System

It has already been mentioned that the concept of credit is not defined in the same way in different African regions. The EU-funded Tuning Africa project was intended to promote a common African definition but the process got interrupted when the third stage of the project failed to take off in 2019. HAQAA-2 has reoriented its work plan to relaunch the process.

The continental register of quality assurance agencies

The PAQAF should support the development of a register of credible quality assurance agencies and institutions and programmes accredited by these agencies.

2.3. Qualifications frameworks

According to Tuck (2007), a qualifications framework is an instrument for the development, classification and recognition of skills, knowledge and competences along a continuum of agreed levels. A qualifications framework is built on qualifications that are recognised in a country or region and are characterised in terms of levels of education, descriptors, knowledge and skills.

The main purpose of a qualifications framework is (Shabani & Okebukola 2017): (a) to ensure the comparability of qualifications and make different pathways through the education system more visible; and (b) to improve international comparisons with the aim of facilitating credit transfer, mobility and recognition of foreign qualifications. Qualifications frameworks may cover the whole education system or be limited to a sub-sector.

In the African context, the issue of qualifications frameworks was tackled first at regional and then at continental level.

The Southern African Development Community (SADC) Regional Qualifications Framework (RQF) was adopted in 2011 and implemented from 2017. It distinguishes ten levels and covers all levels and categories of education. The RQF has developed the guidelines and criteria necessary for the alignment of National Qualifications Framework (NQFs) with the RQF. These criteria are similar to those of the Association of Southeast Asian Nations (ASEAN) Qualifications Framework and the European Qualifications Framework. By December 2021 two countries, South Africa and the Seychelles, had completed the process of aligning their NQFs with the RQF.

For the East African Community (EAC), the East African Qualifications Framework for Higher Education (EAQFHE) was approved by the Council of Ministers in April 2015 (IUCEA, 2015) to contribute to the operationalisation of the Common Market Protocol as far as it entails the mutual recognition of qualifications. It covers the last four levels of qualifications, i.e. levels 5 to 8 of the EAC regional qualifications framework.

The African Continental Qualification Framework (ACQF) development process was launched in July 2019 by the African Union in collaboration with the European Union, the German agency GIZ and the European Training Foundation (ETF). It aims to improve the skills and qualifications of African people and contribute to the operationalisation of the African Continental Free Trade Area (ACFTA) and the development of the African Higher Education Area.

2.4. Scope and limits of curriculum convergence processes.

1) The continental approach

Concerning curricula, the African Union adopted a harmonisation strategy in 2007 (AU, 2007) which has mainly been implemented through the Tuning Africa Project. This was a joint project of the African Union and the European Union launched in 2011 to promote the comparability of programmes, the mobility of students and staff and to improve graduate employability.

The Tuning Africa Project was implemented through a consultative process with all higher education stakeholders. It focused on generic and specific skills requirements, credit transfer and accumulation systems, appropriate pedagogical methods, and quality assessment and improvement.

The first phase of the project, implemented between 2011 and 2013, involved 57 universities from 35 countries and several higher education stakeholders. The project focused on harmonisation and curriculum development in the following five areas: agriculture, civil engineering, mechanical engineering, medicine and teacher education.

The second phase, implemented between 2015 and 2018, increased the number of programmes from 5 to 8 and the number of universities participating in the project from 57 to 107 universities in 42 countries. The new programmes covered economics, applied geology and higher education management.

The first two phases of the project trained around 100 experts in the Tuning methodology, developed training programmes, created partnerships between universities and improved graduate employability.

A third phase was envisaged for the period 2019 and 2022 to strengthen the capacity of universities and their partners in the identification of generic and specific competences, establish a network of African experts in Tuning methodology and develop a harmonised African credit transfer and accumulation system (ACTS). However, the programme failed to take off and HAQAA-2 has reoriented its work plan in order to cover this last element: development of the ACTS.

2) The regional approach

The East African Community (EAC)

In the EAC, the harmonisation of programmes is provided for in Article 11 of the Common Market Protocol. It is based on two major pillars: a regional quality assurance system and the East African Qualifications Framework for Higher Education (EAQFHE).

By December 2021, IUCEA had already harmonised programmes in the following eight areas: Business Studies; Computer Science and Information Technology; Education; Medicine and Dentistry; Engineering; Mathematics; Sports Education Programmes; and Agriculture.

The harmonisation of higher education systems and curricula led to the adoption by heads of state in May 2016 in Dar es Salaam, Tanzania, of a Declaration on the transformation of the EAC into a common higher education area (IUCEA, 2016).

The Economic Community of West African States (ECOWAS)

ECOWAS countries have harmonised their health sciences and pharmacy programmes under the coordination of the West African Health Organisation (WAHO), a specialised ECOWAS institution in charge of health issues that was established in 1987 in Burkina Faso.

The WAHO has harmonised almost all health sciences and pharmacy curricula in ECOWAS countries. These programmes have been accredited by the Regional Council for Health Professional Education in partnership with the African and Malagasy Council for Higher Education (CAMES) and professional associations.

3. Integration and networking of institutions and infrastructure

3.1. Joint Institutions

In French-speaking countries, as mentioned, the process of integration of higher education dates back to at least 1903 with the creation of the "William Ponty" higher education School in Senegal. Several other joint institutions were established in West and East Africa, including Makerere University in Uganda.

3.2. The Pan-African University

The Pan-African University was established by the African Union to meet the African continent's needs for high-level human resources in priority areas of development and researchers capable of generating new knowledge for development.

The Pan-African University aims to (a) promote science and technology and strengthen the quality of higher education and research institutions, (b) strengthen partnerships between universities, African research centres and industry, and (c) increase and strengthen the intra-African mobility of researchers and students (Okebukola, 2016).

The Pan-African University comprises five regional institutes, each located in one of Africa's five geographical regions and covering the following knowledge areas: Space Science in South Africa; Water, Energy and Climate Change in Algeria; Basic Sciences, Technology and Innovation in Kenya; Life and Earth Sciences in Nigeria; and Governance, Humanities and Social Sciences in Cameroon. Each of the five regional institutes will be networked with other institutions in their respective fields of knowledge, creating a network of networks.

3.3. Centres of excellence

Centres of excellence have been used in Africa for several decades as a strategy for pooling the human, financial and infrastructural resources needed to implement training and research programmes in higher education institutions. Several centres of excellence are currently operational in Africa. They have been established with the support of various partners and cover several fields of knowledge.

The development of centres of excellence in Africa has made great strides since the implementation of the NEPAD Consolidated Plan of Action for Science and Technology in Africa (NEPAD, 2005). More recently, the development of centres of excellence in Africa has been supported by the African Centres of Excellence project launched by the World Bank, the EAC Biomedical Science Centres of Excellence, and the centres of excellence established by NEPAD since it became a development agency of the African Union (AUDA-NEPAD, 2020).

Conclusion

African countries are increasingly committed to implementing the integration strategies needed to contribute to the construction of an African higher education area in order to promote mutual recognition of qualifications and the mobility of students and staff.

This contribution intends to identify and very summarily describe all the strategies and initiatives currently being implemented for the integration of higher education in Africa. This analysis shows that African countries are making relatively good progress towards the construction of an African higher education space. **The methodology to build this African HE space will be different from the one used for the development of the European space. It will be based on three main pillars: (a) the legal framework for mutual recognition of qualifications; (b) the processes of harmonisation, homogenisation and convergence, including quality assurance; and (c) the integration and networking of academic and research institutions and infrastructure.** The second pillar is particularly important and should cover: (a) harmonisation of curricula using the Tuning Project methodology; (b) harmonisation of quality assurance and accreditation mechanisms by aligning them with ASG-QA; (c) harmonisation of credit transfer and accumulation systems by aligning them with the European Credit Transfer and Accumulation System; and d) alignment of national and regional qualifications frameworks with the African Continental Qualifications Framework.

Given the various initiatives undertaken at all levels to contribute to the construction of an African higher education area, it must be concluded that **the proposed harmonisation processes should be implemented at both regional and continental levels in a concerted and coordinated manner. Furthermore, African countries also need to make major and sustained efforts to implement the MRAs signed and to advance towards the effective implementation of the national treatment principle so as to avoid discrimination based simply on grounds of nationality.**

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A regional perspective: higher education in the East African Community

Mike Kuria and Gaspard Banyankimbona

Abstract

Higher Education (HE) in East Africa dates to 1949 when Makerere College was renamed Makerere College, University of East Africa. Since then, HE in the region has grown to more than 300 universities with over 2 million students today. This contribution argues that HE has always played a significant role in the integration of the East African Community (EAC). It demonstrates that education continued to unite East Africa even after the collapse of the East African Community in 1977, after only about 10 years of existence, before its revitalisation in 1999. The paper traces the evolution of the Inter-University Council for East Africa (IUCEA) from its formation as the Inter-University Committee in 1970 to its current status as EAC's organ responsible for HE. The paper postulates that in the context of the current 6 EAC Partner States, despite the establishment of a regional quality assurance system, there is still a lot of work to be done in terms of harmonisation of education and building a system that allows mutual recognition of qualifications, credit accumulation and transfer, mobility of staff and students, comparability of qualifications, and international recognition. It concludes that, nevertheless, the region is moving in the right direction.

Overview

An Introduction to the East African Community

The East African Community (EAC), initially formed in 1967 by Kenya, Uganda and the United Republic of Tanzania, currently consists of six countries. The republics of Burundi, Rwanda, and South Sudan joined after the community was revitalised in 1999, having collapsed in 1977. The community could continue growing as the Treaty establishing the Community provides that a country may be admitted into the EAC if it complies with the membership regulations set out in Article 3 of the EAC Treaty (The East African Community, 2002, pp. 11-12). **Growing membership comes with increased diversity.** Following the admission of French-speaking countries like Rwanda and Burundi, and with the Democratic Republic of Congo at an advanced stage, the Summit of the Community has, for example, approved the inclusion of French as an official language of the Community (The East African Community, 2021). This is an example of the growing need for deliberate efforts to integrate diverse stakeholders into the Community. **Higher education has great potential to play a key role in the EAC integration process and sustaining the unity of the community. The survival of the Inter-University Council for East Africa (IUCEA), which remained a uniting factor despite the collapse of the original EAC in 1977, is a testament to this potential.** Collaboration between higher education institutions in the region was maintained by IUCEA, then known as the Inter-University Committee until it was transformed into the Inter-University Council for East Africa (IUCEA) in 1980. Therefore, it was not surprising that the revitalised EAC recognised IUCEA as one of its surviving institutions. This recognition also underlines the Community's awareness of the importance of higher education for regional integration.

Higher Education in the EAC

The first university in East Africa was known as the University of East Africa. It started as a constituent college of the University of London, and in 1970 it gave birth to Makerere University in Uganda, the University of Dar-es-Salaam in the United Republic of Tanzania, and the University of Nairobi in Kenya. Since then, higher education in the EAC has grown in leaps and bounds. While the first three were public universities, there are now over 300 public and private universities, with a combined population of over 2 million students.

The role of higher education in the EAC's regional integration agenda

One of the four pillars of EAC regional integration is the Common Market. The other three are the Customs Union, the Monetary Union, and the Political Federation (The East African Community, 2022b). The EAC Common Market Protocol (CMP) came into force in 2010 (The East African Community, 2022a) after ratification by EAC Partner States. It provides for five basic freedoms of movement. These are the free movement of goods, persons, labour, services, and capital. It also provides for citizens' rights of residence and establishment in any Partner State.

Article 102(1) states that "in order to achieve the Community's objectives, as set out in Article 5 of the Treaty, the Partner States agree to undertake concerted measures to foster education and training cooperation within the Community" (The East African Community, 2002, p. 76). One of the key activities under this article is to "revive and enhance the actions of the Inter-University Council for East Africa". Article 5 of the Treaty is entitled, *Co-operation in the Development of Human Resources, Science and Technology*. Clearly and without going into details, education in general, and higher education (HE) in particular, has a significant role to play in implementing all four pillars. Coordinated HE governance in the region is imperative for the Community to reap the full benefits of regional integration. It is, however, not without some challenges. The role of HE in the development and implementation of the visions of the individual Partner States varies slightly from one to another. There is, however, a common thread uniting all of them. Despite the varying timelines of the different visions (Burundi National development plan 2018-2027; Kenya Vision 2030; Rwanda Vision 2050; South Sudan Vision 2040; Uganda Vision 2040; and United Republic of Tanzania Vision 2025), there is a common commitment to review the education systems to ensure that it provides quality education, enhances access and specifically address paucity of skills in Science, Technology, Engineering, and Mathematics (STEM) and Information and Communication Technology (ICT) subject areas. The Inter-University Council for East Africa's plays a role in coordinating harmonised development and implementation of the EAC's higher education system.

The Inter-University Council for East Africa

IUCEA is one of the 8 institutions of the EAC. It was institutionalised in the EAC through an act of the East African Legislative Assembly (EALA) known as the IUCEA ACT 2009. Article 4(1) of the Act states that the purpose of IUCEA is to "advise Partner States on all matters related to higher education" (The East African Community, 2009, p. 5). IUCEA's purpose and function are limited to advising Partner States and coordinating and networking with Higher Education Institutions (HEIs), but this has become a significant instrument to impact the governance of higher education in the Community. Major stakeholders such as the vice-chancellors of member universities, directors of the National Commissions or Councils for Higher Education, and Permanent Secretaries in ministries responsible for higher education form part of the governance structures of IUCEA and are represented in the governing board of IUCEA to ensure that decisions made at the regional level are implemented in the Partner States. In collaboration with these stakeholders, IUCEA developed policy documents, tools and instruments for harmonisation of higher education upon whose consideration, and after recommendation by IUCEA, the Heads of State of the EAC Partner States declared the EAC a Common Higher Education Area (EACHEA) in May 2017 (The East African Community, 2017).

The declaration of the EACHEA means that the Community is working towards a harmonised education system that will facilitate mutual recognition of qualifications, comparable and compatible study programs that enable credit accumulation and transfer and ultimately, the free movement of labour. But before the EACHEA can be operational and its benefits fully realised, there is a lot of ground to be covered because governance of higher education remains diverse in terms of administrative and legal structures in the Partner States. Indeed, in some Partner States, there are legal entities with conflicting mandates internal to the country even without reference to regional practice.

Higher education in the different partner states: institutional aspects

Burundi

In Burundi, the HE sector has been alternatively under the Ministry of Education or the Ministry of Higher Education and Scientific Research. Today, it is under the Ministry of National Education and Scientific Research.

Law No.1/07 of October 29th, 2020, stipulates that the organisation, promotion, regulation and guidance of the HE sector (both public and private) is a Government responsibility. This is done in partnership with the academic and scientific communities and other stakeholders.

At the technical level, the National Commission for Higher Education (CNES, in the French acronym), set up by presidential decree No.100/258 of November 14th, 2014, is the regulatory body charged with the elaboration, monitoring and evaluation of the higher education policy.

The functions of the Commission include, but are not limited to, accrediting universities and other Higher learning institutions, public and private, and their academic programmes at all levels of study, and monitoring of compliance of Universities to national, regional and international education standards.

To deliver on its mandate, the CNES has three sub-commissions:

1) Commission for equivalence of university degrees and diplomas tasked to equate qualifications earned at university level outside the country.
2) Commission of HE curriculum development charged with regularly monitoring the relevance of the curriculum developed by universities before approval, and benchmarking best practices at regional and global level.
3) Commission of validation ("entérinement", in French) of diplomas in charge of final approval of the degrees awarded by Universities.

The higher education regulations allow universities to exercise autonomy and self-governance through their own institutional governing boards, although private Universities are still under the tutorage of the Ministry in charge of higher education, to whom they report through the Directorate of National Education, and public Universities report directly to the Cabinet under the coordination of the Ministry of National Education and Scientific research.

Law No. 1/07 of October 29th, 2020, provides two very important directives to be emphasised here:

1) Access to university education in Burundi is open to East African citizens under the same conditions as Burundians.
2) Training in the workplace is a must for students. All formal workplaces are by law considered to be training spaces to ease access of students to internship opportunities.

Kenya

Higher Education in Kenya is under the Ministry of Education, responsible for education at basic, vocational, or tertiary levels. At a technical level, there are bodies tasked with regulating the different levels of education. The Commission for University Education (CUE) is responsible for university education. The Universities Act 2012 (the Republic of Kenya, 2012) assigns CUE the function of accrediting universities, both public and private, and their academic programmes at any level of study. There has been some conflict, sometimes ending in courts (Kenya Law, 2018), when professional bodies, such as the Engineering Registration Board of Kenya (ERB) and the Legal Council of Kenya, threatened not to recognise or register graduates from programmes they considered inadequate, even though duly accredited by CUE.

In addition, CUE is given the mandate to equate qualifications earned at the university level outside the country. However, the Kenya National Qualifications Agency (KNQA) establishes "standards for harmonisation and recognition of national and foreign qualifications" (Government of Kenya, 2014, p. 6). As much as this provides an opportunity to build synergy, it also creates room for conflict, however subtle, in the discharge of duties by the two agencies, and sometimes this has also ended up in court (Owino, 2022).

Universities are awarded charters that grant them autonomy and self-governance through their own institutions, such as Councils, Senates, Management Boards and other committees. A university in Kenya may be able to operate for up to 8 years with a letter of interim authority, meaning it can grant degrees before a charter is awarded. An interim authority is valid for four years with a possibility for renewal once. Not all EAC countries have that provision, as will become evident from the foregoing. There is no regional consensus on how universities with interim authorities, certificates of registration, or provisional licenses are treated in the region.

The Republic of Rwanda

As in Kenya, Higher Education is under the Ministry of Education in Rwanda. The Ministry is also responsible for basic, vocational and technical education. HE regulation is the mandate of the Higher Education Council (HEC), which, unlike its counterpart in Kenya, is only responsible for accrediting private higher learning institutions and their programmes. Only one public university in Rwanda has been established by an official gazette notice. However, HEC is responsible for developing standards and monitoring their adherence in all higher learning institutions. In a departure from Kenya's practice, the Republic of Rwanda does not permit universities with provisional licenses or letters of interim authority to award degrees. Instead, higher education institutions with provisional licenses must apply to be allowed to award degrees after their first cohort of graduates has finished (Higher Education Council, 2007).

The Republic of South Sudan

South Sudan is the newest member of the EAC, having acceded to the treaty in April 2016. When it declared independence from Sudan in 2011, it had 9 public universities and 34 private, largely unregulated universities (Akec, 2021). The Ministry responsible for higher education in South Sudan is the Ministry of Higher Education, Science and Technology (MoHEST). A National Council for Higher Education (NCHE) is tasked with "policy-making responsibility" (Akec, 2021, p. 16) including developing standards and accrediting programmes for universities. Unlike the rest of the EAC Partner States, where the sister organisations are semi-autonomous, as of November 2021, NCHE in South Sudan is chaired by the MoHEST minister, and membership of the Council includes the Vice-Chancellors of both public and private universities (Bruno Dada, email communication).

The Republic of Uganda

Uganda has a slightly different arrangement from the rest of the EAC Partner States. Education falls under the Ministry of Education and Sports, with separate State Ministers responsible for the various levels of education. There is, therefore, a State Minister for Higher Education. The agency responsible for regulating higher education is the National Council for Higher Education (NCHE), which, like its sister organisations in the other Partner States, is responsible for institutional and programme accreditation for both public and private higher education institutions (the Republic of Uganda, 2001). In Uganda, universities with letters of interim authority cannot admit students. Universities can be issued with a provisional license which allows them to admit and educate to graduation, but the provisional license is only valid for three years (National Council for Higher Education, 2005). As in other Partner States, the day to day running of the university is left to a hierarchy that involves university Councils, Management Boards, Senates, and other internal committees

The United Republic of Tanzania

The Ministry of Education, Science and Technology (MoEST) is responsible for higher education in the United Republic of Tanzania (URT). The Tanzania Commission for Universities (TCU) is the implementing agency for policies and regulations regarding higher education, in line with the Universities Act Cap. 346 of the Laws of Tanzania and its associated regulations and the Universities (General) Regulations, 2013 (The Tanzania Commission for Universities, 2019). While TCU is responsible for setting standards, registering, and accrediting all higher education institutions, public or private, and their programmes, there is also another agency known as the National Council for Technical Education (NACTE), which has its own standards by which it accredits degree-awarding institutions in the Technical and Vocational Education and Technology (TVET) sectors. There are degree awarding institutions that are not established as universities but which nevertheless offer degree programmes sometimes up to the doctoral level. This sometimes creates differences of opinion, especially when those graduating from technical and vocational education institutions want to pursue further studies in higher education institutions under the purview of TCU.

Universities in the United Republic of Tanzania are given powers to independently run their own academic and governance activities, as long as they comply with their respective charters, which are granted by the President of the Republic. The provisions in the university charters are aligned with those in the Universities Act Cap. 346 of the Laws of Tanzania. As is practised elsewhere in the EAC Partner States, the charters provide for the independence of the Senate for all academic matters, the university Management Boards for the day-to-day administration of the university and the University Councils for both academic and governance issues at a higher level (The Tanzania Commission for Universities, 2019).

Challenges

Reforms in higher education in the EAC are not regionally coordinated. The Republic of Kenya has, for example, shifted from its previous 8.4.4 system, meaning 8 years of primary education, 4 years of high

school and 4 four years of university, to what is now referred to as the Competence-Based Curriculum (CBC). In this system, learners will now have a 2.6.3.3 system of education. This means 2 years of pre-primary, 3 years of lower, 3 years of upper primary, 3 years of lower secondary school, and 3 years at tertiary level. No other EAC country has adopted this system yet.

The republic of Burundi is engaged a series of reforms in its education sector, shifting from its previous 6.7.4 system, meaning 6 years of primary education, 7 years of high school and 4 four years of university, into a 9.3.3 system. At the university level, the implementation of the BMD (Bachelor Masters Doctorate) system inspired by the Bologna process started with the Academic year 2011/2012.

Other Partner States are also reviewing their education system. An Education Policy Review Commission was, for example, constituted under legal notice number 5 of 2021 in Uganda and is currently soliciting views from stakeholders to review the entire education system in the country. In previous years, the diverse education systems have complicated the process of harmonisation given the different levels of education. While some countries such as URT and Uganda were using the A-Level system, Kenyan students could proceed to university without A-Level qualifications under the 8.4.4 system. Students in Kenya would have eight years of primary education and four years of secondary school before proceeding to the university for a further four years. The rest of the EAC Partner States were doing seven of primary education, four years of secondary education, and two years at A-Level, after which they would qualify to join university. This meant that in some cases, Kenyan students were deemed unprepared for university studies in some of the other Partner States, yet they were eligible for university admission in Kenya and elsewhere outside East Africa. **These conflicts have, at times, complicated the movement of students transiting from secondary school to university level from one Partner State to another. To resolve the complications, IUCEA developed the East African Qualifications Framework for Higher Education (EAQFHE) (The Inter-University Council for East Africa, 2015).** This framework with 11 level descriptors can assist interpretation of skills gained by students at any level, irrespective of the time taken. But, as with other tools and instruments developed under the regional framework, its implementation is challenged by the lack of harmonised regional policy and regulatory mechanisms to ensure their implementation.

Different regulations and accreditation practices also make it difficult for mutual recognition of qualifications.

The way forward

The East African Community has made substantive progress in regional governance and administration of higher education in its Partner States. IUCEA is the only institution in Africa, to our knowledge, that has an enabling multi-lateral legal framework to deal with higher education at a regional level. The Community's governance structure, with different ministerial Sectoral Councils, provides an opportunity to influence regional higher education policy decisions. **In this context, for example, a very important decision was adopted to the effect that students studying outside their home countries will be charged the same fees as the nationals of their host Partner State. This national treatment principle is now operational in the EAC Partner States despite a few teething problems.** IUCEA is, for example, facilitating the EAC Scholarship Programme funded by the German Development Bank (KFW), which requires students to study at a university in a Partner State outside their home countries. They are charged the same fees as the nationals of their host countries in compliance with this principle.

By involving permanent secretaries in the Ministries of Education and the directors of the National Councils and Commissions for Higher Education in the EAC Partner States, IUCEA's administrative structure ensures that regional standards and guidelines and/or policies can easily be domesticated and implemented at a national level. This arrangement has ensured that tools such as the Road Map to Quality: A Handbook for Quality Assurance in Higher Education, developed regionally, have been domesticated by the National Commissions and Councils and the standards and guidelines therein are used in the development and review of academic programmes, and the accreditation of higher education institutions.

Challenges remain in the governance of higher education at a regional level in the EAC that will be dealt with in the implementation framework of the EAC Common Higher Education Area. As the coordinating entity, the IUCEA will have to put in place a comprehensive implementation strategy and concrete plans, including the development of necessary policy, legal, and regulatory frameworks at a regional level to actualise the Common Higher Education Area.

One recent step taken recently in the right direction is an agreement to implement a voluntary regional quality-based programme accreditation. Universities participating in this exercise will become examples of good practice and will help pilot and eventually mainstream the regional quality assurance tools, standards and guidelines. This will ultimately enhance mutual trust between institutions and hence ease mutual recognition of qualifications, credit accumulation and transfer, mobility of students, and crucially, mobility of labour within the Community. This will be one of the key areas of focus for IUCEA in the coming years.

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Recent developments in Internationalisation in Africa

James Otieno Jowi

Abstract

Internationalisation is one of the main phenomena influencing HE transformations and developments globally. In recent years, it has grown in importance and has impacted Africa's HE in a complex way, incentivising change and the strengthening of African Higher Education Institutions (AHEIs) and systems while at the same time compounding some of the challenges they face. African universities have thus begun to take stock of what internationalisation portends to them. It must never be forgotten that AHEIs engage with internationalisation from a weaker position than their counterparts from the developed countries and thus need to develop new ways of responding to global dynamics. Therefore, Africa's HE must bring a new flavour to the global higher education community to propel stronger developments and engagements with Africa. The COVID 19 pandemic presents an important turning point in Africa's HE and must bring forth new dynamics, especially on the future of internationalisation of HE. This contribution presents the state of internationalisation in African HE and highlights some of the challenges, risks and opportunities it offers to AHEIs. It briefly explores some contemporary developments in internationalisation in Africa, including the implications of the COVID 19 pandemic.

Africa and internationalisation: introduction and context

Internationalisation has become one of the central issues in higher education in recent years and is a major driver of change in higher education globally (Knight, 2008; Zeleza, 2012), including in Africa where the higher education sector is comparatively recent and perhaps the most marginalised in the world (Jowi, 2012). While there have been various conceptualisations of internationalisation and even calls for a rethink of these conceptualisations (de Wit, 2013; Deardorff, 2012), what is not in doubt is the centrality and manifestation of internationalisation as a major agent of transformation in higher education globally (Maringe, 2010). This is also fuelled by the attendant forces of globalisation and interconnectedness, mainly driven by the Information, Communication and Technology (ICT) revolution.

While internationalisation is not a new phenomenon in Africa, there is credence that African universities face internationalisation from a weaker position than universities in other world regions (Teferra, 2008). As such, while universities in developed world regions view internationalisation positively and as a major opportunity, African universities tend to view internationalisation as bringing forth several risks and challenges (Jowi, 2009). The main rationale for African universities engaging in internationalisation has been to strengthen their institutional infrastructures and capacities for teaching and research. The negative experiences of African universities with regard to internationalisation have partly been due to the various challenges that have confronted the sector and the fact that higher education in Africa is comparatively recent compared to other world regions.

It has been claimed that internationalisation of Africa's higher education is not new, but as old as the history of higher education in Africa (Teferra, 2011; Jowi, 2009). Pioneering African universities were set up with links to parent universities mainly in Europe (Teferra, 2011) and offered the programmes and certification of those parent universities. **The foundations for the development of the higher education sector in Africa were thus adopted mainly from former colonisers and have to a certain extent remained in the system.** This resonates with the recent calls for decolonisation of African universities (Nyamnjoh, 2019). At the same time, a majority of pioneering African scholars were trained within these same frameworks (Oyewole, 2010).

Internationalisation has therefore been part of the development of Africa's higher education sector in major and varied ways, leading some scholars such as Teferra (2008) to consider Africa's higher education sector as the most internationalised globally. This is more discernible in the curricula and reading lists of most of the

courses offered in African universities, with almost entirely Western content and epistemologies.

The last two decades have been viewed as a period of revitalisation of Africa's higher education and have seen African universities grappling with the serious challenges that have bedevilled the sector since the 1990s. The key areas of transformation include the exponential growth in number of institutions and students, growth in private higher education in most African countries, diversification of academic programmes and some progress in governance and quality reforms. These transformations are a consequence of national, regional and international developments. The sector has continued to face perennial challenges including funding constraints, poor infrastructure, overcrowding, poor quality and governance challenges, among others. These developments have implications for the ability of African universities to engage with internationalisation and other global developments.

Before delving into the next sections, it is important to point out from the outset that Africa is a vast continent composed of 54 countries with several peculiarities, different regions and economic communities and a rich linguistic and cultural diversity. Generalisation is therefore very difficult and could be misleading. This paper takes this into consideration and will thus generally focus on some common aspects and present specific highlights from certain African countries and regions.

Recent developments in internationalisation in Africa

Over the last few years, a number of developments have taken place in Africa's higher education terrain, with significant implications for the future of internationalisation in Africa. Some are themselves outcomes of the growing impact of internationalisation. Over the same period, internationalisation has continued to gain more prominence in African higher education than ever before. The section below summarises some of the key developments in internationalisation in Africa.

Growth in intra-Africa collaborations

An important recent development is the growth in partnerships and collaborations between African universities themselves. This has in a way created a new trajectory away from the historical trend, which mainly focused on partnerships with universities in other world regions, especially Europe and North America. This development has opened up a new phenomenon with a new dimension for internationalisation in Africa (Jowi and Mbwette, 2017), which is now shaping and promoting academic exchanges and engagement between African universities in ways that have not been witnessed before. They demonstrate one of the potential areas of growth of internationalisation in Africa. Jowi and Mbwette (2017) further noted that intra-Africa collaborations have mainly followed a regional trend, possibly influenced by developments in regional economic communities and regional university associations. Intra-Africa collaborations could also be an outcome of the South-South higher education relations that are continuing to emerge. A number of thematically based university networks and consortia have created useful platforms for local engagement and stronger international partnerships. Some examples include the African Research Universities Alliance (ARUA) and the Regional Universities Forum for Capacity Building on Agriculture (RUFORUM), in addition to several other interesting initiatives.

Emergence of regional centres of excellence

The growing intra-Africa university collaborations have in recent years been further strengthened by the emergence of African Centres of Excellence located in some leading African universities. These centres have promoted a number of internationalisation activities, in particular student and staff exchanges and joint researcher postgraduate training, with a consequent improvement in the academic quality of the participating institutions or programmes. Most of these centres are supported by international development partners, with a positive effect on the development of the capacities of African universities and the strengthening of quality local training, but at risk of becoming a new way of stemming brain drain. Several such centres have been established in different African universities through initiatives such as the Pan African University, the African Higher Education Centres of Excellence (ACEs) supported by the World Bank, and other initiatives by the German Government, among others. In the East African region, under the auspices of the Inter-University Council for East Africa, several Centres of Excellence have been established, including those targeting skill development. They have provided impor-

tant opportunities for regional universities to develop consortia for more strategic collaborations with partners in the North.

Regional academic mobility

The last few years have also witnessed growth in the mobility of students and academics within African universities, largely through regional and continental policy instruments and frameworks. Under the provisions of the Southern African Development Community (SADC) protocol, the Southern African region has made significant steps to facilitate the mobility of students within the SADC region, with a majority of mobile students flowing into South Africa. The protocol allows students from universities in the SADC region to pay the same fees as home students when seeking studies in another SADC state.

This is also the case in the East African Community (EAC), where the East African Common Higher Education Area was established in 2016 by the heads of state of the regional economic community, providing more possibilities for higher education collaborations in the region. The EAC has a long history of regional cooperation in higher education that has in recent years been facilitated by the Inter-University Council for East Africa (IUCEA), an institution of the East African Community (EAC) that facilitates regional university cooperation through the development of regional policies and frameworks. These developments have been coupled with the commitment of the governments of African countries to supporting development of the higher education sector, including strengthening research and innovation collaborations.

Attempts at harmonisation

Regional and continental collaborations in higher education have led to attempts aimed at harmonisation of higher education systems and the development of frameworks for mutual recognition of academic and professional qualifications, thereby facilitating the mobility of both academics and professionals. The East African region has made significant steps towards harmonisation of the education systems of the six countries in the EAC region and has commenced development of the mutual recognition of academic and professional qualifications through initiatives including the development of regional qualifications frameworks. The implementation of the recently inaugurated African Continental Free Trade Area (AfCFTA) could play an important role in furthering harmonisation and mutual recognition of qualifications in Africa.

Mind-set change

Recent years have also witnessed some indications of a change in students' mind-set towards academic exchanges and even the pursuit of full degree training in other African universities. Previously, students have focused mostly on going to universities in the North and other developed regions. This is slowly changing, with increasing numbers of students opting to take their studies at some universities in the region. This can be seen in the numbers of applications for study opportunities in the regional centres of excellence and other mobility arrangements. A recent study by Sehoole, Olaide and Lee (2022) documented the growing trends in African students undertaking their training in other African countries.

Growth in ICTs and digitalisation

The phenomenal growth in ICTs and digitalisation, as will be discussed in the next section, presents Africa with several opportunities to foster internationalisation and strengthen its higher education sector. ICTs are beginning to enable African universities to break down some of the historical and systemic barriers, especially the digital divide which has excluded African scholars and universities from actively participating in the growing knowledge society. As is discussed later, the consequences of the COVID 19 pandemic have constituted an important step towards the deployment of ICTs and digitalisation for teaching, learning and research in African universities.

Africa's youth boom

It has been noted that enrolment in African universities is rising. However, this is only about 9% of the cohort that should be at university. Africa is the most youthful continent in the world today, with close to 60% of the population composed of young people. This is an important opportunity for Africa's higher education sector and internationalisation. Universities have to take advantage of Africa's youth boom to enhance access to and participation in higher education. This growth in participation could push Africa to become an important region and key frontier for student mobility.

Impacts of the COVID 19 pandemic

The COVID 19 pandemic is unprecedented and has led to equally unprecedented consequences for African higher education and internationalisation. African universities were caught flat-footed by the pandemic, with inadequate capacities to respond to its consequences. Universities in most African countries were thus closed for several months, leading to lasting consequences. The effect of the pandemic has led to a shift to online learning and digitalisation, with several implications for the future of African universities and internationalisation. If utilised strategically and effectively, this could enable African universities to respond to some of the challenges holding back progress of the higher education sector in Africa and its internationalisation.

Investment in, and utilisation of, ICTs and digital technologies is already beginning to enhance access, curriculum reforms, changes in teaching and learning methods, efficiency and cost-cutting in several areas, improvement in quality and even enhanced collaborations which are essential for internationalisation. Several universities in Africa have unprecedentedly held their graduation ceremonies online, offering courses and examining students online, without much complaint from key stakeholders. These developments could have a significant impact on the future of African student mobility. This could be even more the case at postgraduate level, since supervision can now be effectively undertaken on digital platforms. This shift could also reduce the cost of internationalisation activities, especially those associated with travel, as many activities can now be done online. It also has the potential to enable scholars to participate in various academic and research communities and thus strengthen the weak research capacities of African universities.

African scholars and researchers can now easily participate in international conferences and other forums which were hitherto cumbersome due to the associated costs of travel and visa issues. However, a lot still needs to be done for this to meaningfully benefit African universities, including the need for significant investment not only in ICT infrastructures, equipment and software but also in the required human resource capacities, for both students and staff.

Commitment by African governments and international partners

Another key development is the renewed commitment of African governments and international development partners to supporting African higher education. Several international development partners have increased their support for the strengthening and renewing of higher education and research in Africa. The recent European Union-African Union Summit held in February 2022 underscored the essence of scientific cooperation in research and innovation and identified universities in the two regions as key to carrying this out. The Forum on China-Africa Cooperation held in Dakar, Senegal in 2021 also committed to deepening China-Africa relations with a further commitment to supporting education, research and skills development. In the same vein, Africa-India collaborations have focused on higher education and skills development. The World Bank has in recent years spent more of its funding on higher education in Africa (Word Bank 2021) than in other regions. Other funders such as the German Academic Exchange Service (DAAD) have reformulated their scholarship funding to mainly support tenable training in African universities, especially in the centres of excellence. In general, higher education presently holds a much more central place in cooperation between Africa and other world regions.

At continental level, through the African Union Commission (AUC) and the Regional Economic Communities (RECs), there is also growing recognition of higher education collaborations as crucial to achieving the aspirations of the continent, including unlocking its potential. Part of this has been highlighted in the initial section of this paper.

Making internationalisation work for african universities: challenges and opportunities

The developments discussed above present African universities with a number of opportunities. Amid these opportunities, there are also challenges and, at times, risks. The next section summarises these opportunities and challenges.

Opportunities

Internationalisation presents several opportunities, some of which have not been fully utilised by African universities in order to respond to some of the persistent challenges they have been facing.

For instance, African universities have been deficient in research capacities compared to their counterparts in

other world regions. Despite calls to enhance funding for research, African governments only spend about 0.3% of their gross national product on research. This cannot turn around the weak research and innovation capacities of African universities. In this context, African institutions see internationalisation as one of the ways of enhancing research productivity in Africa Universities (Jowi, 2021). While it is debatable whether this has been a deliberate or strategic development, it is notable that there has been sustained and progressive growth in the international engagement of African universities in the area of research. **Through internationalisation, some universities have been able to develop high quality academics and researchers, improve their research infrastructures, develop viable research centres and are now able to participate and contribute in knowledge production.** It has been noted that the research output of African universities has increased tremendously in the last few years, partly due to these efforts.

Though brain drain has been viewed as one of the serious challenges posed by internationalisation, the African academic diaspora could be turned into a great 'brain gain' opportunity for Africa through various programmes such as the Carnegie Africa Diaspora Fellowship Programme (Zeleza, 2019), which brings top African academic diaspora back to African universities for a stay of a couple of months. These are just some examples of the opportunities that internationalisation offers African Universities. With responsive strategies and support mechanisms, African universities could enjoy many more benefits of internationalisation.

Challenges

There are several studies that have documented the challenges that internationalisation poses to African universities (Zeleza 2021, Mohamedbhai, 2016). Compared to other world regions, African universities face monumental challenges in their quest for internationalisation. This has led to claims that internationalisation has not worked well for African universities (Zeleza, 2021; Jowi and Sehoole, 2017) and may explain why it has not received the same level of priority and support in some African countries and institutions.

One of the challenges has been **the historical and growing knowledge divide between developed regions (the North) and Africa, which has been perpetuated by some of the developments in internationalisation.** This, in addition to the fact that Africa is largely viewed as an object of study, continues to cause discomfort amongst scholars and has impaired the development of an internationalised African knowledge project.

Brain drain is the other key challenge and risk that Africa associates with internationalisation, and has played a significant role in weakening the capacities of African universities. It is estimated that one third of the best African researchers and scientists have been kept on at universities in developed countries after high-level training that would have allowed them to make significant contributions to Africa (Tettey, 2009). In addition, despite some fragmented efforts, Africa has not been able to tap into its vast academic diaspora spread across different parts of the world. This further erodes the weak research capacities of African universities.

Another big challenge has been posed by the curriculum reforms resulting from internationalisation activities that have led to knowledge epistemologies and content from other world regions dominating the curricula of most African universities (Sall and Oanda, 2014; Zeleza, 2012). The reading lists of most programmes in African universities are also dominated by content produced by authors from other world regions without adequate or relevant content from Africa. This is one of the reasons for the call for decolonisation of the curriculum, which has been most widespread in South Africa. Even with the growth in internationalisation, knowledge and research produced and developed in and for Africa has not received the attention it deserves.

Leadership strengthening is also beginning to attract attention as an important aspect of institutional development and internationalisation. Leadership and commitment are crucial to taking advantage of internationalisation. **It has been argued in some quarters that internationalisation has not worked well for African universities, partly due to leadership challenges. It must be accepted that in addition to weak capacities for research, teaching, innovation, supervision, etc., African universities also have weak capacities for management of internationalisation.** Universities in most African countries do not have offices to coordinate internationalisation activities; neither do these offices - where they exist - have capacities to implement their mandates. Internationalisation opportunities - in particular access to international research funds or collaborative projects - seem to be concentrated in a few universities - the usual suspects. Therefore, **even if funds for research and academic partnerships to and with Africa might be increasing at world level, they seem to be concentrated in just a few countries and institutions, thus continuing to aggravate not only the extra-regional but also the intra-regional divide.**

Conclusion

Internationalisation is growing in importance in African higher education and will remain a major factor influencing the sector in the coming years. While it portends several challenges and risks to African universities, it at the same time presents several opportunities which, if adequately utilised, could strengthen African higher education and even minimise some of the challenges. The rapid developments in ICTs, digitalisation and online learning, especially as a result of the COVID 19 pandemic, present opportunities to strengthen African higher education and its participation in the global knowledge society. Several universities have embraced online learning and digitalisation, which could open up opportunities for enhancement of access, quality, research, postgraduate training and partnerships and collaborations between institutions, among other aspects.

Growing intra-Africa collaboration is another very important evolution, and is already fostering academic mobility, promoting research partnerships and contributing to the development of various consortia, as well as bringing a new and more meaningful flavour of interactions between African universities. If this evolution is adequately managed, and research and knowledge generation capacities are enhanced, internationalisation could make a decisive contribution to Africa's development. As Mohamedbhai (2017) noted, African universities need to focus on what works for them and not wholesomely respond to or ape developments that might be more relevant to other world regions, at least for the time being. Africa has to establish its role, agenda and contribution to internationalisation and develop supportive strategies and policies towards this, rather than take an ad hoc approach to these important issues.

However, in order to grasp the opportunities and minimise the risks, it is imperative for more effort to be put into continuous capacity building for African universities and development of systems for better management of internationalisation. Support for continuous research and training on internationalisation in Africa needs further emphasis. These are areas where African organisations such as the African Network for Internationalisation of Education (ANIE) could play a key role and thus need the support of other collaborative partners to further them in Africa.

Internationalisation also seems to be a necessary framework in order to manage, from an African perspective, a series of challenges that African higher education systems necessarily face: first, the impact of the COVID 19 pandemic and the emerging shift it has brought to African higher education; second, dealing with climate change and other emergent issues; third, benefitting from Africa's youth boom, promoting student mobility on that basis and using it to create an important reservoir for developing the much-needed cohort of young talent to turn around Africa's development; fourth, the harmonisation of education systems, the development of mutual recognition agreements and enhanced mobility and university cooperation, especially in the different regions of Africa; fifth, to create the basis for the proper implementation of the African Continental Free Trade Area (AfCFTA), if it is successfully consolidated.

Of course, the traditional collaborations with Europe and North America, which have contributed immensely to the growth and internationalisation of African higher education, still need further strengthening, in addition to the emerging role of initiatives from countries like China and India and all the South-South initiatives. But this strengthening would be optimal if it were matched by, and developed within, intra-African cooperation.

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Transforming Curricula in African Higher Education Institutions: An African necessity

Charmaine B. Villet

Abstract

The Higher Education sector on the African continent has seen exceptional growth over the last two decades, although enrolment rates continue to lag behind global figures. There are, however, deep concerns over the quality and relevance of the education students receive. This contribution defends an urgent focus on developing graduate competencies that will withstand the waves of change and the uncertainty of the global future. The curricula of most African universities continue to follow the traditional approach of accumulation of separate courses and credits. This approach is no longer able to meet the demands of the global society, which requires graduates to solve complex problems using creative, innovative and ethical thought and practices. African Higher Education Institutions should embrace a Transformation philosophy to curriculum thought and practice to attain the "Africa we want". The question "Who will lead Africa into a bright future?" Requires universities to reflect on the challenges facing the continent and define what kind of citizens will be able to handle the challenges most effectively. The task of an adequate philosophy of higher education is not only to understand the university or even to defend it but to help change the institution.

Introduction

Higher education (HE) is perceived to be crucial and strategic to the comprehensive development of nation-states globally. Including African countries, which want to respond to the global challenges of the 21st century. This is evidenced by the number of national councils for HE (NCHEs) created in many African countries in the last decade, as well as by the number of regional education bodies and protocols established to work on improving the quality and transferability of HE qualifications in African HE Institutions (AHEIs) and to leverage their ability to contribute to quality teaching, research and national development goals.

Over the last two decades, Africa has experienced unprecedented growth and development in its HE sector; many young Africans have become better educated as enrolment rates across AHEIs increased dramatically. And the African Union (AU)'s Continental Education Strategy for Africa (CESA), a part of Agenda 2063, places HE at the centre of its ambitious plan to see at least 70% of high school graduates on the continent moving on to tertiary education. According to QS, Rethinking Higher Education in Africa (March 31st, 2021), this is eight times the current Sub-Saharan average of 8%.

However, *"These developments … came with different concerns/challenges over issues of quality and relevance. (They) necessitated the emergence of regional higher education policies and … efforts to harmonise them partially"* (Woldegiorgis, 2018, p.46). Further, although the current enrolment rates lag far behind global rates, there is a huge concern about the ability of African economies to absorb such a large increase of tertiary-level graduates into their labour markets.

The COVID-19 pandemic has revitalised African interest in HE, opening huge opportunities for innovation and showcasing deepening existing inequalities in access to and quality of higher education. The Association of African Universities (AAU) has taken on an activist role in the revitalisation of HE in Africa and has designed a series of interventions to improve the difficult situation that HEIs in African countries are facing.

Other initiatives such as the Africa Centres of Excellence, Partnership for Skills in Applied Sciences, Engineering & Technology, the Pan African University, Harmonisation, Accreditation and Quality Assurance in African HE (HAQAA) are all part of various efforts by the AU and the AAU to improve African Higher Education.

However, few of these key interventions and initiatives are really focused on the strategic role that curriculum innovation and transformation play in HE.

How to approach curricula?

Since the dawn of the post-colonial era, African scholars have expressed that African universities should mirror their societies and cultures by Africanising the university and its curricula. However, the transformation of AHEIs to reflect African society and culture in curricula, teaching, and learning did not really materialise. Many reasons have been offered for this, beginning, of course, with the role of neo-colonialism and the strong desire of African nation-state universities to be acceptable in the eyes of former colonial rulers and the larger global HE community.

However, as scholars across the Continent continue to debate what the Africanisation of AHEIs will mean in practical terms, some critics are of the opinion that the Africanisation project is silent on the pertinent issue of transformation and transformative pedagogy that could effectively deliver courses that will develop the skills, knowledge and dispositions that African youth need to change the social and economic realities in their communities.

Furthermore, the debate usually takes place within economic agendas of strongly market-oriented nation-states that emphasise competition, economic efficiency and consumption. Many view this, again, as another neo-colonisation of the African higher education system, seeking to make HE a marketable product bought and sold by unit standards: *The system of business principles and statistical accountancy has resulted in an obsessive concern with the periodic and quantitative assessment of every facet of university functioning. ... excellence itself has been reduced to statistical accountancy... We have to change this if we want to break the cycle that tends to turn students into customers and consumers... the free pursuit of knowledge has become the free pursuit of credits* (Mbembe, A., 2015, p. 7).

Scholars like Mbembe are concerned that current quality assurance processes have taken on a life of their own at the expense of the University's mission to educate students to lead productive lives, conducting research and creating new knowledge, serving as engines of change and social mobility, protecting diverse viewpoints, and defending important shared values. And many would agree that there is a need for AHEIs to focus on the development of graduate competencies that will withstand the waves of change and the uncertainties of the global future. Such competencies are firmly embedded in graduates' ability to develop a critical and analytical mindset, ability to solve complex problems and continue learning (Life-long learning).

Transforming curricula in African heis

Conceiving curricula

The curriculum operationalises the academic plan for learning and teaching. Being at the centre of a university's educational efforts, it often becomes the locus of the sharpest controversies, dealing with questions such as: What knowledge is of the most worth? What knowledge should be introduced to the learner? What is valuable to the learner as a person and as a member of the community/society? Given our global interdependence on issues around climate change, environmental sustainability, global pandemics and growing social and economic inequalities and injustices, HE is now all the more confronted with how it is responding to these matters.

The term ***curriculum*** traditionally is broadly defined as the course of study that includes **goals** for student learning (skills, knowledge and attitudes); **content** (the subject matter in which learning experiences are embedded); **sequence** (the order in which concepts are presented; **instructional methods and activities; instructional resources** (materials and settings); evaluation (methods used to assess student learning as a result of these experiences); and **adjustments to teaching and learning** processes based on experience and assessment.

From a traditional perspective, curriculum design focuses on preserving subject disciplines that are transmitted as undisputed truth and value to the younger generations. The teacher is seen as possessing a disciplined body of knowledge and skills to impart to the learner through deliberate instruction. This still looks and sounds familiar, nearly axiomatic, to many current-day African university lecturers.

Critics of the traditional educational orientation argue that this way of educating younger generations leads to the upholding of the status quo/conforming to hegemony and leaves little room for the cultivation of innate ability, self-discovery and the ability to explore and grow (mentally, morally, spiritually) through active interaction with their natural and social environments. It often leads to an inability to reflect and self-correct, to apply education to solve human problems, and improve the quality of life for all humankind.

An alternative to the traditionalist approach comes from the proponents of the transformative approach to curriculum planning, development, implementation and evaluation, who posit that the most profound learning takes place when learners are actively involved in their own learning through experiential activities, projects and complex problem-solving. This way of learning encourages them to discover knowledge and co-create new knowledge rather than passively assimilating knowledge given to them by a teacher. It encourages exploration, self-discovery, learning by doing and leads to innovation that can bring about the social and economic betterment of society.

Curricula Reform: An African necessity

Since its earliest years, AHEIs have been struggling with ensuring the relevance, applicability and integrity of their academic programmes. Scholars since the 1950s and 60s have called for designing an education "of Africa for Africa" that should liberate Africans from the yoke of colonialism. However, the operationalisation of the concept of Africanisation of HE curriculum and study programmes has remained largely elusive. Even though African universities have become more Africanised over time because more African academics occupied management and teaching positions, the struggle to ensure that curricula in AHEIs reflect African values, beliefs, ways of knowing and knowledge construction, learning, teaching and research practices, remains vague and incoherent.

A look into the African Union Commission (AUC) documents on HE quality indicates what the Commission sees as the objective of HE in Africa in the 21st century: to increase access and ensure quality education provision, ensuring that higher education is responsive to Africa's priorities and relevant to the labour market. It sees HE as a progressive force that plays a crucial role in the transformation of African society and economies and calls on HEIs to adopt African approaches to the education development agendas of their institutes. It also calls for the promotion of student-centred learning and outcome-based study programmes aligned with the needs of stakeholders. It promotes Arts, Culture and Heritage and focuses on science and technology to accelerate the continent's transition to an innovation-led, knowledge-based economy. Combined with a focus on women and girls' education and empowerment, community programmes in Agriculture development and innovation, and the protection of rights to access information, among others, it appears that the Commission is making the right moves in the right direction. What is not so clear are the basic curricular principles and practices that should drive the transformation of the higher education curriculum that will deliver the "Africa we want" or the values, principles, beliefs and practices that need to underlie the transformation of teaching and learning in higher education.

The fact remains that many classrooms across many AHEIs, continue to resemble those of the 50s, 60s and 70s. Academics continue to lecture to students, who passively receive knowledge treated as absolute, eternal and unchanging, framed in a cumulative curriculum (subject content attained at one level is added to the next higher level) and compartmentalised in distinct and separate academic disciplines. Of course, there are exceptions; however, the pace at which African university curriculum and instruction are transforming is often left wanting. Community and industry leaders continue to decry the inadequate skills of graduates who are unable to problem-solve, communicate through writing and speaking, engage in ethical decision-making, work in teams, learn/re-learn and unlearn, and disengage from community and civic life. The mandate to implement transformation across most universities is clear, but what is not so clear is the curriculum transformation framework that could guide HE through the transformation process.

Transforming African HE curricula

At the theoretical level, the need for a shift of focus is globally acknowledged: from *subject/discipline knowledge* and what *teachers do,* to what *students are learning:*

1) **From learning goals focusing on mastery of content and content coverage to a demonstration of broad competencies and relevant learning outcomes.**
2) **From learning in distinct disciplines to integrative learning across the curriculum (wicked problem solving).**
3) **From changes in subject matter as the main means to improve learning, to innovations in instructional and assessment methods (integrating ICTs).**

Employers rate the attainment of these above-mentioned competencies/skills highly, and often consider them more important than the subject content areas from which students are graduating. However, they do not feel that graduates attain them, leaving a gap between the education received and the competencies and skills needed in the workplace.

In this context, an increasing number of African scholars argue that African HE needs a very deep and broad transformation project. A transformative philosophy and approach to curriculum planning, development and implementation in HE will encourage students to analyse African development challenges and needs, pushing them to develop action-oriented solutions to development issues through inquiry, case studies, peer collaboration, research and complex problem solving and problem learning. Students will establish deep connections and relationships with local communities and economies through this approach. This, they argue, if well implemented, could ensure a transformation in learning, teaching, and assessment approaches in HE, and ensure greater connectedness with local and regional communities and industries. It could also have a transformative impact on universities' 3rd mission (community engagement), bringing more clarity of purpose and definition in line with transformation goals.

A transformative approach to HE curriculum teaching and learning encourages students to view and interrogate issues and problems from several perspectives, including a deep consideration of diversity (of thought and practice) as a basic premise, and to integrate indigenous knowledge and alternative worldviews to complex problem-solving. It also encourages the acquisition of values of respect for all forms of life and human dignity as required for social harmony in a diverse world, as espoused by UNESCO.

Transforming university curricula to respond to local and global challenges also requires an intense look into the structural adjustments universities need to make to support processes for transforming HE. The key is to not only change the way things look but also focus extensively on the way things work. This is how the AU's calls for the harmonisation and strengthening of the quality of higher education should be applied. In order to truly practise transformation in the HE arena, a transformative learning mind-set is equally needed. The main premise of the transformative mindset is the idea that "learners" who are obtaining new knowledge/information evaluate their past ideas and understanding, and through critical reflection and discourse, shift their worldviews and perceptions to support their new learning and meaning-making.

A transformative approach to African HE can develop a consciousness of the social forces influencing the status quo and bring a more fundamental change to the HE system. This approach does not repudiate the basic tenets of the Africanisation of HE curricula but supports it and provides concrete guiding principles to operationalise HE transformation in teaching, learning, research and community engagement. Its main purpose is the empowerment of learners to see the world differently, so that they can challenge and change the status quo as leading agents of change. This is particularly pertinent to the current education, climate, health and economic challenges on the African continent. The transformation curriculum encourages collaborative complex problem-solving by using different forms of knowledge/s and practices, including indigenous knowledge/practices, and practically engaging students in action-oriented inquiry to find solutions to enduring problems. The curriculum is organised around significant local and global problems and issues that are collaboratively identified without regard for subject area boundaries, to encourage the cross-curricular application of subject discipline knowledge that comes to bear on the identified problem. It encourages lifelong learning and the building of learning communities. It integrates reflection, action, theory and practice as well as social and personal realities in its methodology. It ensures that African knowledge systems, cultural traditions and values and language systems are used together with scientific knowledge and practices for the improvement and development of individuals, communities and nation-states.

A transformation curriculum in HE recognises that the traditional curriculum focused on subject content, and organised in distinct disciplines, is no longer able to meet the demands of an emerging world society that requires graduates to solve complex problems using creative, innovative and ethical thought and practices. The curriculum has to answer questions such as what graduate competences and skills/outcomes are most valuable in modern-day local and global society, how universities can best facilitate the development of these competences/skills in their graduates, what knowledge/s, learning and assessment experiences are needed, what structural and procedural changes should universities make to achieve the goals, and what role should staff and the community play to ensure the goals are achieved.

There is limited research evidence of AHEIs accepting a transformative epistemology and methodology for their transformation processes. Reports suggest that many former advantaged universities stopped short of effecting a genuinely critical stance on their transformation process. **If HE is to transform from its traditional (some would say elitist) focus on the transmission and preservation of subject discipline knowledge, to a focus on the technical and economic roles of students in a rapidly changing social and technological world, it requires a university cultural revolution. After all, in the words of Barnett (2017), the task of an adequate philosophy of HE is not merely to understand the university or even to defend it but to change it.** As stakeholders engage in this process of change and deliberate with one another, the process itself also becomes a form of emancipation that serves both individual intellectual development as well as social progression.

Transformative Learning in AHEIs

Who will lead Africa into a bright future? This question requires the academe to deeply reflect on the challenges facing the continent and nation-states, and define what kind of citizens will be able to handle the challenges most effectively. How should we educate our students to live responsible, creative and productive lives? After all, students are the ultimate recipients of education.

The traditional model of university teaching excellence recognises universities for their comprehensive array of course disciplines, the research funding they obtain and the publications that arise from such sponsored work, their technology transfer and community engagement programmes supported by dedicated staff and infrastructure. In short, the institution's excellence is mainly based on the scholarly efforts of its academic staff combined with evidence of its community outreach.

Although this institutional achievement model will continue to be part of the academic culture, there is an increasing shift to a new pattern of achievement based on collaborative use and production of knowledge based on the characteristics of the communities and regions the university serves. In this scenario, students play a much more active role.

For African students to succeed in this new learning environment where key competencies replace the focus on subject content mastery and where inter-disciplinarity is seen as a more effective strategy for solving complex problems, the institutional mission, culture and capacity should reflect that. Each curriculum must be looked at as "one" coherent package, not as a "sum of isolated courses".

Coherence, interdisciplinarity, collaborative problem-solving, focus on the developmental learning needs of students must be master concepts that can improve retention rates and support students at risk of dropping out while facilitating their transition from university to the world of work by intentionally integrating what they are learning to other disciplinary perspectives, community challenges and the world of work.

To move in this direction, academic staff should be exposed to innovative instructional methods that are integral to the curriculum transformation efforts. Although lectures and small group discussions will continue to be present in the university classroom, active, collaborative and interdisciplinary learning should become more commonplace in university classrooms in AHEIs than what is currently the case.

Transformative teaching in AHEIs: In defence of important values

Transformation is unavoidable, especially to allow universities to continue nurturing multiple points of view and standing for timeless values such as the pursuit of learning free from special interests, freedom to research important questions of every kind, and the importance of enlightened reasoning. In the world of Big Data and giant transnational companies owning and managing them, the academy's ability to access raw data for creating new knowledge might become more challenging and protecting these values is becoming more and more imperilled.

The local and global changes surrounding the university landscape have placed an incredible amount of pressure on academics who are affected by limited resources for teaching and learning, requirements for income generation, improving flexible modes of delivery and study, transforming the curriculum, and continuing scrutiny in relation to quality and standards. A further challenge brought on by the pandemic is that academics have to work with students remotely while at the same time preparing them more carefully for a

local and global world dominated by forces out of their control. The fact that a teacher's physical presence in the classroom is no longer a requirement for teaching may be a welcome reprieve from the ever-escalating cost of traditional instructional methods, but the cost of investment in computerised teaching systems and online learning courseware may be hard to come by in most AHEIs. This situation could perpetuate the many inequalities witnessed across the higher education landscape on the continent, leading to an ever-widening social, political, cultural and economic gap.

It is clear that higher education is operating in a very fluid and unpredictable environment. A transformative approach informed by adaptability and flexibility is becoming a condition for the survival of these institutions. As AHEIs will have to increasingly compete with industry to recruit and retain top research talent, collaboration with other universities is essential. And as our intellectual work is increasingly being replaced by machines, the ethical and philosophical issues that will be raised can only be addressed by understanding the Humanities and our African human conditionalities. Therefore, universities should guard to exclusively respond to market needs but to also be motivated by their values and missions at a time when a deep understanding of the Humanities is more important than ever. In the words of Paolo Freire, what is needed is a pedagogical approach that "demythologises" and unveils reality by promoting dialogue between teachers and learners to create critical thinkers engaged in inquiry in order to create a new constantly changing social reality (Freire 1970, 2009). This is the process of problem-posing education, aligning its meaning with the intrinsic view that education is ultimately aimed at human development.

The market value of education should not be neglected, especially in the African context, as it can help people escape the vicious cycle of poverty and provide the children of low-income families the opportunity to increase their social and economic upward mobility. However, we cannot forget that one of the main functions of HE is to serve the general community/society, including the improvement of health levels and decreasing fertility and mortality rates, which in turn can create more responsible and participative citizens, boosting democracy and social justice. These obvious ideas are too often absent from discussions on HE.

A transformative learning and teaching approach to HE creates the framework to address all these challenges. It will not be easy to implement, as it requires a deepened understanding of the forces that aid the social and economic injustices seen across the African landscape. As HE involves different stakeholders with different social roles, it stands to reason that their interests can be conflicting, and that they will view HE from different perspectives. Therefore, legitimate policy options are on the table. Harmonisation and quality assurance processes and practices must respect this and not be used to homogenise what is to be taught, how it will be taught and how it will be assessed. This could make teaching and learning less responsive to local contexts and move AHEIs away from their unique social and economic development agendas.

Conclusions

The Africa HE sector has seen unprecedented growth over the last two decades. However, this progress in the dimension of access has taken place on a very traditional canvas. The challenges of employability, and contribution to the overall African development and to the reduction of inequalities, and the solutions to global problems, will not be adequately faced without adopting a transformative approach to curriculum design and implementation.

AHEIs must be encouraged to adopt a transformation approach to curriculum thinking and decision-making to ensure the development of graduates who have the skills and attributes to make meaningful impacts on their countries' social and economic struggles, and who are able to face an uncertain job market with the enduring competencies needed.

Answers to the questions of *What knowledge is of the most worth? What knowledge should be introduced to the learner? What is valuable to the learner as a person and as a member of the community/society?* should guide the vision and mission of the university and should broadly define its course of study.

There is, of course, nothing wrong with including the perceptions and views of the marketplace in curriculum conceptualisation. However, the widening social and economic inequalities across the continent (and globally) raise ethical and philosophical questions that require a full understanding of the Humanities for a university education to address them. Even the prolific expansion of information through the use of ICTs requires students and teachers who are critical thinkers able to discern the nature of knowledge, its origins, how it is created, by who, and to which purpose.

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Research and innovation: Learning and Innovation strategies for sub-Saharan Africa

Mafini Dosso

Abstract

Emerging dynamics and novel actors are shaping the transformations of sub-Saharan Africa's research and innovation systems. In the last decade, new strategies, instruments, alliances and networks have flourished in the region, shining a light on innovative local solutions and tremendous technological potential. Long-term policy commitment is critical but not sufficient for their sustainability and for research and innovation to deliver benefits for society. Indeed, local actors are confronted with shared regional and global challenges and ecosystem-specific barriers hindering learning, creativity, and innovation processes.

This contribution addresses the major evolutions in regional learning and innovation strategies and the challenges of their sustainability. It calls attention to the new 'rules of the game', fast-evolving youth-led digital ecosystems, rising science integration, and best practices cases in science excellence and research and innovation networking. Sub-Saharan Africa's researchers and innovators are thus undoubtedly on the rise. However, more inclusive stakeholders' coalitions, challenges-oriented and place-based strategies would be key for achieving transformations through research and innovation, leaving no one and no place behind. Furthermore, monitoring these rapid changes becomes even more pressing in order to ensure that their impacts do not remain uneven and unevenly distributed for the times to come.

Introduction

Research and Innovation (R&I) are already transforming sub-Saharan African economies and communities, albeit at a very unequal pace across places. In the last two decades, novel players, narratives and resources have contributed to reshaping regional and local research and innovation systems. Yet R&I's transformational potential remains largely unexploited owing to a narrowly diffused innovation culture, and a lack of appropriate resources and effective policy instruments and capabilities to scale up R&I activities for transformative change.

The high-level policy commitment to R&I is clearly visible in the development agendas at global, continental, Regional Economic Communities (RECs) and national level (UN, 2015; AUC, 2014; AU 2019; and countries' national development plans). **However, for prosperity to occur through innovation, policy commitment is not enough. The uptake of transformative R&I activities in sub-Saharan Africa faces many ecosystem-specific barriers and shared regional challenges that have prevented innovation from flourishing in all its forms.** In addition to common global challenges such as climate change and the ongoing pandemic, sub-Saharan African countries are still struggling on several fronts: to cite only a few, the implementation of the AfCFTA (UA, 2018; CNUCED, 2019), the consequences of the regional 'spaghetti bowl' of agreements (Byiers et al., 2019) and the multi-faceted capability gaps and rising multiform inequalities, as well as the existence of acute policy implementation bottlenecks at all levels.

Harnessing the emerging technological and innovation potential and opportunities to the benefit of local communities thus requires novel place-based and people-centred policymaking approaches. These place-based, 'no-one-size-fits-all' policies should help to create, capture and redistribute more value locally by upgrading the learning and innovation capabilities of local players. From the perspective of fostering local innovation ecosystems, each stakeholder in the quadruple helix – academia, civil society, industry and government – has a role that, in most countries, would require place-based capabilities to be enhanced or constructed in order to achieve prosperity for everyone and everywhere.

Research and innovation: a decade of progress and the challenges of sustainability

Research and innovation institutions are gradually being constructed to address sustainability challenges

Recognition of the role of research and innovation in solving developmental challenges has prompted the elaboration of related strategies or instruments in many countries of the sub-Saharan African region. In addition to the publication of the African Union (AU)'s science, technology and innovation (STI) and education strategies (STISA 2024 and CESA 16-25), the decade has been marked by the increased commitment of some RECs in STI strategy-making and integration. In the last decade, the Southern African Development Community (SADC) has further strengthened its STI policy cooperation, building upon the protocol signed in 2008. The Western African Community (ECOWAS) adopted a dedicated STI protocol in 2012, while the East African Community (EAC) has recently operationalised the East African Science and Technology (S&T) Commission. Nevertheless, advances at policy elaboration and operationalisation level remain very heterogeneous across RECs, which are also expected to fulfil multiple thematic institutional roles beyond the R&I domain. In the regional communities where some common R&I frameworks exist, tracking progress is another challenging task for both them and the Member States.

Besides the ongoing adoption of thematic or sectoral agendas and conventions, the construction of African R&I systems relies on the creation of continental institutions and organisations, some of which are directly or indirectly related to the Science, Technology and Innovation Strategy for Africa (STISA). Those directly related to STISA include the African Scientific, Research and Innovation Council (ASRIC), a technical advisory body, the African Observatory for Science, Technology and Innovation (AOSTI) and the Pan-African Intellectual Property Organisation (PAIPO) established by African Union statute in 2016. The same year marked the adoption of the revised statute of the Pan-African University (PAU), which is a network of five thematic institutes covering Earth and Life Sciences in Nigeria, Water and Energy in Algeria, Governance, Humanities and Social Sciences in Cameroon, basic STI in Kenya and Space Sciences in South Africa. In 2019, the Pan-African Virtual and E-University was officially launched. While these initiatives might be acclaimed, their sustainability is still very much in the balance owing to the lack of funding, managerial and academic staff, and complete institutional and operational processes. Recent reviews suggest that **many pieces are missing from the regional STI policy puzzle, including understanding, capabilities and instruments, action plans, monitoring and evaluation practices, as well as traceable financial support** (See AUC, 2014; progress report AU 2019a; AU 2019b).

At national level, favourable policy responses have also been diversely implemented and some remain at the announcement stage. Several countries in the region have now adopted STI policies (UNESCO, 2021). The picture varies depending on the geographical sub-regions. In West Africa, countries such as Cape Verde, Ivory Coast, Togo, Liberia and Sierra Leone do not yet have an explicit STI policy. Nevertheless, like other countries, they have reinforced their STI institutions through different instruments (thematic ministries, directorates, commissions, sectorial policies, etc.).

In Central and Eastern Africa, some countries such as Burundi, Ethiopia, Kenya, Uganda and Rwanda have elaborated explicit STI policies; Kenya and Rwanda have already engaged in revision phases. These improvements suggest that **R&I policy learning is taking place in sub-Saharan African economies, but may be too slow amid global socio-economic and technological trends and African trade integration.**

Combined efforts of the public and private for-profit and not-for-profit sectors could help to make faster joint progress towards the 1% target of GDP invested in R&D

Slight increases in research and development (R&D) funding, human capital and outcomes have been observed over the last decade. This trend has also been marked by the important participation (and orientation) of international donors and partners. In sub-Saharan Africa, the highest ratio is 0.83% of GDP invested in R&D in South Africa (2018 UNESCO data), while most countries are not even half-way, except for countries such as Senegal and Rwanda. **More collective efforts from both the public and the private – for-profit and not-for-profit – sectors would help to make faster and smarter joint progress towards the 1% target of GDP invested in R&D.** While funding remains a major issue at stake,

the collection of R&D and innovation data is still not anchored into the habits of national statistical institutes, research centres and universities. To address these issues, the African Observatory of Science, Technology and Innovation (AOSTI) and UNU-MERIT have organised throughout the decade a series of capacity-building programmes as part of the Design and Evaluation of Innovation Policy in Africa. The regional training series targeted African policymakers, government officials and other stakeholders involved in STI activities. The series covered countries from Eastern and Southern Africa and two Regional Economic Communities (SADC and COMESA), as well as Western African countries and ECOWAS (Iizuka et al 2018; 2015).

Table I. Sub-Saharan African Countries participating in African Innovation Outlooks

AIO 2010	AIO 2014	AIO 2019
Burkina Faso	Angola	Angola
Cameroon	Burkina Faso	Botswana
Ethiopia	Cape Verde	Burkina Faso
Gabon	Ethiopia	Burundi
Ghana	Gabon	Cape Verde
Kenya	Ghana	D.R. Congo
Lesotho	Kenya	Eswatini
Malawi	Lesotho	Ethiopia
Mali	Malawi	Gabon
Mozambique	Mali	Ghana
Nigeria	Mozambique	Lesotho
Senegal	Namibia	Mali
South Africa	Nigeria	Mozambique
Tanzania	Senegal	Namibia
Uganda	South Africa	Niger
Zambia	Tanzania	Rwanda
	Togo	Senegal
	Uganda	Seychelles
	Zambia	South Africa
	Zimbabwe	Tanzania
		Togo
		Uganda

Source: African Innovation Outlook 2019 (AUDA-NEPAD, 2019)

Notes: The survey covers research and experimental development (R&D) or innovation in products, processes and organisational and marketing methods. Some countries only provided one category of data.

A key issue is illustrated by the African Innovation Outlook 2019, where only 23 African countries provided **R&D survey data (see Table I), the figures being even less accessible with regard to innovation data, despite the pro-innovation policy discourse. In addition to the absence of more than half of the countries, R&D expenditure data by institutional sector are incomplete and in general only refer to spending by governments and higher education sectors.** Another challenge for the countries covered relates to overestimations due to the inclusion of support staff as R&D professionals, thus limiting the reliability of comparative analyses. In the field of data collection and interpretation, the support of the African Observatory for STI and RECs could play a key role. Relevant experiences are for instance the African STI Indicators initiative (ASTII) and the capability-building initiatives led by the AOSTI. They enable practice-sharing and learning-by-interacting, which are key to improving the measurement and monitoring of R&D&I activities on the continent (AUDA-NEPAD, 2019).

Local initiatives for science excellence and integration are taking off (too slowly) in sub-Saharan Africa

In the area of scientific excellence and integration, sub-Saharan Africa has become a flourishing ground for international initiatives through the establishment of regional Centres of Excellence, network building and thematic capacity-building programmes for HEIs and research organisations. Launched by the World Bank and participating governments, the Africa Higher Education Centres of Excellence (ACE) programme has provided support to more than 40 thematic centres in West and Central Africa (phase 1) - Benin, Burkina Faso, Cameroon, Ivory Coast, Gambia, Ghana, Nigeria, Senegal and Togo – and East and Southern Africa - Ethiopia, Kenya, Malawi, Mozambique, Rwanda, Tanzania, Uganda and Zambia – (phase 2). Target fields include science, technology, engineering and mathematics (STEM), the environment, agriculture, applied social sciences, education and health. The programme provides financial and technical support to HEIs and research centres to enhance higher education quality and the market and industry relevance of postgraduate students.

The success of the project has led to further extensions towards other international development partners and within African networks. For instance, a memorandum of understanding has been signed between the Inter-University Council for East Africa (IUCEA) and the Regional Universities Forum for Capacity-Building in Agriculture (RUFORUM). The Memorandum of Understanding (MoU) will be the framework for the Eastern and Southern Africa Higher Education Centres of Excellence Additional Financing (ACEII-AF) project for the period 2021-2026. The new ACEs focus on novel (sub-)thematic areas such as sustainable cities; sustainable power and energy; social sciences and education; transport; population health and policy; herbal medicine development and regulatory sciences; public health; applied informatics and communication; and pastoral production.[1]

In 2019, with the operational leadership of the African Union Development Agency (AUDA-NEPAD), five continental Centres of Excellence (CoEs) were endorsed by the African Heads of State and Government. The CoEs, one for each geographical region of Africa – Central, East, North, South and West –, should support the implementation of the National Development Plans of Member States, REC strategies and other continental thematic programmes and frameworks: Rural Resources and Food Systems (Senegal, West Africa), Climate Resilience (Egypt, Northern Africa), Human Capital and Institutions Development (Kenya, East Africa), Science, Technology and Innovation – STI - (South Africa, Southern Africa), Supply Chain and Logistics (Central Africa, Country TBC).[2]

Regional and international collaboration enable improvements in local absorptive and learning capabilities. R&I collaboration is instrumental in sharing best practices, physical and faculty resources and creating synergies on common developmental priorities. Thematic scientific networks and alliances have also been reinforced or created, such as the Alliance for Accelerating Excellence in Science in Africa (AESA) in 2015.

The Institut Pasteur de Côte d'Ivoire (IPCI): a long-standing commitment to excellence in health science in West Africa

The IPCI is a state-owned industrial and commercial establishment (EPIC) under Ivory Coast's Ministry of Higher Education and Scientific Research. Its missions include research, training, diagnostics and epidemiological surveillance. The **Institut Pasteur de Côte d'Ivoire hosts the CeReB, the first regional biobank conforming to international standards in French-speaking sub-Saharan Africa (inaugurated in 2019), and since 2021, a high-throughput genome sequencing laboratory, a key part of the infrastructure for Western Africa's fight against the pandemic.** www.pasteur.ci

Source: IPCI (provided in January 2022)

1. See: https://ace.aau.org/about-ace-impact/
2. Details on the CoE's STI launch can be found at: https://www.nepad.org/news/launch-of-auda-nepad-centre-of-excellence-science-technology-and-innovation
3. See an updated list at https://africanscientists.africa/academies-of-science/
4. See the impacts at https://www.africalics.org/impacts/

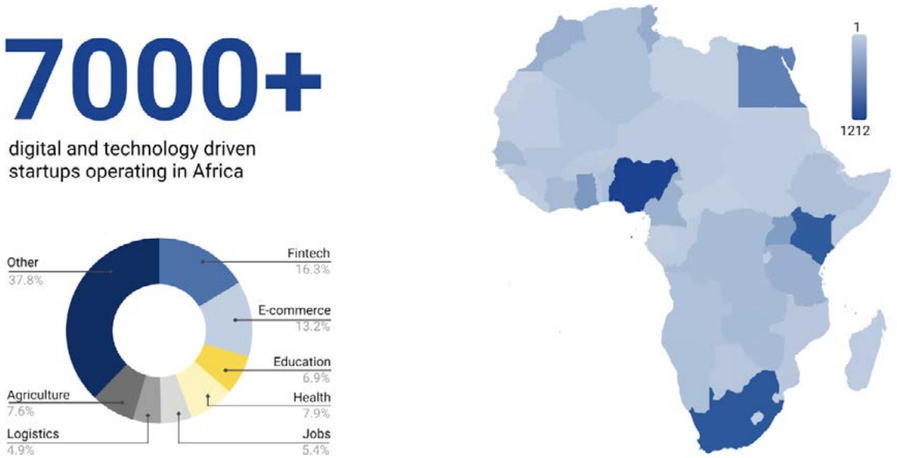
Endorsed by a summit resolution of the AU Heads of Government, AESA was set up through a partnership of the African Academy of Sciences (AAS), the AUDA-NEPAD and founding and funding global partners. In parallel, several national science academies have been revived or established in countries such as Botswana and Rwanda, with the most recent one being in Malawi.[3] In the field of STI studies, the African Network for Economics of Learning, Innovation and Competence Building Systems, or Africalics, was founded in 2012 in Tanzania. It is a regional chapter of the Globelics network that brings together thousands of scholars, researchers, practitioners and policy analysts worldwide.[4]

The trends have coincided with an unprecedented surge in the digital presence of traditional African universities and the development or creation of national virtual universities. Unlike in English-speaking countries, which have been pioneers in online education and learning, the phenomenon is relatively more recent in many French-speaking countries, for instance in Burkina Faso (UV-BF was established in 2018), Ivory Coast (UVCI in 2015) or Senegal (UVS in 2013). These new higher education modes are helping to combat the saturation of physical higher education systems in sub-Saharan Africa. Their sustainability largely depends on how well countries can alleviate the related technological, socio-economic, digital literacy and political constraints.

The emerging youth-led technological boom brings more "games" to African towns and innovation ecosystems

The African technology revolution is on its way, as suggested by the exceptional growth of urban technology ecosystems, digital start-ups and start-up networks in the last decade. Several factors are at play, such as globalisation, the rapid diffusion of ICTs, the rise in venture, corporate and development funds and the spread of collective innovation and learning spaces and technology hubs. At the end of the year 2021, Briter Bridges recorded at least 1031 innovation hubs, usually concentrated in capital or main cities, spanning 53 African countries and more than 7000 start-ups. 53% of these innovation hubs are co-working spaces and communities, while more than 45% run support programmes. These hubs provide services such as capacity-building, incubation and acceleration programmes, co-working spaces and support structures for African entrepreneurs at different stages of the innovation value chain, from ideation to the market (Briter Bridges and Afrilabs 2021; Dosso, et al., 2021).

Figure I. More than 7000 digital and tech start-ups in Africa



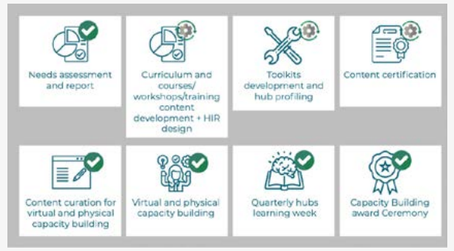
Source: Briter Bridges https://briterbridges.com; Graphs provided in Jan. 2022.

3. See an updated list at https://africanscientists.africa/academies-of-science/
4. See the impacts at https://www.africalics.org/impacts/

AfriLabs, the Pan-African voice of hundreds of innovation hubs and communities

Created in 2011, AfriLabs is the largest innovation hubs network. As of January 2022, it connected 320 innovation hubs across more than 50 African countries and the diaspora. AfriLabs offers financial mentorship, networking opportunities and capacity-building resources.
https://afrilabs.com

AfriLabs' Capacity-Building Programme for Enterprise Support Organisations



Source: A Resilient Africa 2020 – An annual report on AfriLabs' impact. See more at https://www.afrilabs.com/wp-content/uploads/2020/04/2020_-A-Resilient-Africa.pdf

New hubs involve a growing variety of corporate, not-for-profit, university and development players and target very diverse sectors, for instance creative industries (art, fashion and entertainment) such as the 360 Creative Innovation Hub in Lagos (Nigeria) or women-focused tech-entrepreneurship such as the Ghana-based Woman's Haven Hub or Femmes360 in Lubumbashi (Democratic Republic of Congo). Overall, fintech companies from the traditional quadrangle – Nigeria, South Africa, Egypt and Kenya – attract the biggest share of African start-up funding. Nevertheless, more countries, tech sectors (for instance, agriculture and agri-tech, ed-tech, clean-tech, gov-tech, legal-tech, logistics, health-tech or space technologies, among others) and companies are coming in, and French-speaking Africa is recording increasing numbers of hubs, start-ups, deals and financing inflows. These changes have undoubtedly been accelerated by the social distancing and lockdown restrictions amid the pandemic (Briter Bridges, 2021; UNDP, 2020).

Start-up networks and organisations and networks of innovation hubs are making an important contribution to the interconnection of start-ups, hubs and local innovation systems. They also showcase local innovative solutions, challenges and ecosystems' needs. Nigeria-headquartered AfriLabs is such a network, spanning the whole continent. In addition to the capacity-building, certification and networking programmes, **African innovation networks have amplified the voices of young digital entrepreneurs, particularly with regard to the international and African private sector and policymaking circles.**

A number of foundations, forums and prizes have been established on the continent to encourage and support young innovators, scientists, digital entrepreneurs and start-ups. The Next Einstein Forum (NEF) is a platform launched in 2016 with the aim of connecting science, society and policy.[5] The NEF has four major programmes including the global gathering, the policy institute, a public engagement online platform and a community of scientists including the best young African S&T champions. The annual TREMPLIN START-UP UEMOA awards promote digital start-ups' solutions in agriculture and the agro-industry and their Enterprise Support Organisations (ESOs). Participating countries belong to the West African Economic and Monetary Union (WAEMU; UEMOA in French): Benin, Burkina Faso, Ivory Coast, Guinea-Bissau, Mali, Niger, Senegal and Togo. The rise of African prizes and forums and the faster adoption of national digital plans signal a broader policy commitment to ICT-enabled innovative solutions and local tech-entrepreneurial ecosystems. However, some critical gaps persist, for instance in terms of sustainable funding, basic and advanced infrastructure, technology literacy and legal instruments and frameworks. Indeed, very few states have national cybersecurity and data protection laws, and most countries have not ratified the 2014 Malabo Convention on cybersecurity and personal data protection. In terms of start-ups' legal frameworks, Senegal has already passed a Start-Up Act, while other countries such as Ivory Coast, the Democratic Republic of Congo, Ghana, Kenya and Rwanda have launched draft legislation or related consultations.[6]

5. See: https://nef.org
6. See at https://i4policy.org and Dosso et al. (2021).

Some directions for the future of research and innovation (r&i) in relation to sustainable transformations in sub-saharan Africa

Diffusing the innovation culture beyond the core of R&I systems

Recent evidence, media premieres and success stories have put the spotlight on the potential and challenges of Sub-Saharan Africa's researchers and innovators. The last decade has witnessed the gradual construction and strengthening of R&I institutions and the rise of innovation hubs, R&I networks, communities, alliances and scientific centres of excellence. Some impacts of these changes are already visible, even if they may take time to be captured by the commonly used R&D&I measures. Meanwhile, their sustainability largely depends on how well we can keep them alive, bring them together and scale them up to address the challenges of local communities and economies. From the perspective of achieving sustainable transformations, our collective efforts should thus go towards improving the diffusion of innovation, entrepreneurial and learning cultures, well beyond our science and nascent urban technology ecosystems. In other words, it is also about nurturing an innovation culture – creativity, innovative thinking and a mind-set for change, learning from successes and failures, etc. – across schools, colleges, craft federations, traditional, emerging and creative industries, chambers of commerce and industry, SME federations and civil society organisations, as well as within local and central administrations, among other stakeholders.

The ongoing EU-funded ACP project for the Promotion of Research, Innovation and Digital Culture in Central Africa (PRICNAC), for instance, supports innovative projects proposed by multi-stakeholders and multi-country consortia involving high schools and HEIs. Inspired by the smart specialisation initiative, PRICNAC has been implemented in 8 countries – Cameroon, Congo, Gabon, Equatorial Guinea, the Central African Republic, the Democratic Republic of Congo, Sao Tome-and-Principe and Chad – for the period 2021-2024. PRICNAC aims to foster a digital culture, the market relevance of R&I capabilities and synergies in the R&I system, as well as the promotion of local expertise and knowledge.[7]

The experience of successful interregional collaboration under the EU's Technical Assistance Facility for Industrial Modernisation and Investment (TAF) could also be noted as worth extending to Africa. The TAF has supported 19 projects emerging from 14 partnerships under the EU Smart Specialisation Platform for Industrial Modernisation. The TAF has brought together more than 50 European regions, providing support such as market validation, investment plan review, business model definition, costs and revenues definition or revision, and marketing and sales channels definition or validation[8] Importantly, and even in different contexts, such projects underline the relevance of embracing a broader innovation culture across our economies, industries and communities with a view to identifying (and "market testing") sustainable options and pathways to address our specific local challenges and common developmental goals.[9]

Novel sources and updated instruments for challenge-oriented R&I funding

The unprecedented funding inflows for technology start-ups and R&I-oriented development projects have greatly supported the emergence of local R&I dynamics in sub-Saharan Africa. Although some improvements can be observed in the funding of African research capabilities and science institutions, they mostly still rely on international donors and government-related sources. While the interconnection with the global innovation system might be much praised, the sustainability of local research and innovation systems may be at stake owing to potential misalignments with local players' priorities and long-term development plans. In addition to the setting up or strengthening of national funding sources, novel instruments and models should also be identified to support challenge-oriented R&I projects. Additional efforts should therefore be made to involve the private sector, thereby enabling innovative funding instruments, and to better leverage emerging innovation networks, successful start-up founders or private philanthropic funding.

Improving the funding for R&I is not enough. The directionality and prioritisation of R&I is even more important

7. See: https://pricnac.org
8. See: https://s3platform.jrc.ec.europa.eu/taf
9. See Dosso et al., 2020, for a reflection on smart specialisation in sub-Saharan Africa.

for impactful investment. This means that shared visions for transformations through R&I should be constructed and that R&I projects should be jointly matched to the vision, the underlying objectives, and the available and accessible resources. Revisions of priorities are of course possible, even encouraged, but will often require monitoring and evaluation capabilities and routine-like practices. From a dual evidence-informed and place-based perspective, dedicated mappings of R&I stakeholders, the scientific, economic and entrepreneurial potential, and the innovation challenges in the formal and informal sectors are essential for the elaboration of sound R&I roadmaps and action plans. (UN IATT & European Commission, 2021; Foray, et al., 2021; Dosso, 2019).

Strengthen the capability of stakeholders to make R&I participatory approaches a reality

Broadening and spreading innovation and learning cultures is a long-term and collective undertaking. **The dynamics observed in the sub-Saharan Africa economic, R&I and technology landscapes are still a cause for optimism and hope, which some have hailed as part of the "Africa Rising" narrative. However, the impacts of these changes risk remaining too uneven and unevenly distributed for the times to come.**

In the region, several initiatives have been deployed to foster participatory R&I dialogues, for instance targeting HEI-industry links. However, they are often under-financed, under-staffed and discontinued. Besides these resource gaps and the absence of long-term commitment, awareness and adequate capabilities are also missing across the quadruple helix players for the establishment of sustainable participatory R&I dialogues and decision-making models. Inspirational cases of collective discovery processes and multi-stakeholder dialogues exist in sub-Saharan Africa and elsewhere, within and outside the R&I domain. Although they can hardly be copied, the learnings and experiences could relevantly inform place-based strategies with a view to achieving sustainable transformations through research and innovation in sub-Saharan Africa.

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Development and Implementation of the ASG-QA in African Higher Education Space: What are the challenges?

Jeffy Mukora

Abstract

Quality assurance of African higher education is at the top of the continent's development agenda. Prompted by the imperative to enhance the quality of higher education, the African Union (AU) and the European Union came together to support the Harmonisation of African Higher Education Quality Assurance and Accreditation Initiative (HAQAA) sine 2015. One of the achievements of the HAQAA Initiative in its first phase is the development of the African Standards and Guidelines for Quality Assurance (ASG-QA) in higher education institutions and quality assurance agencies. The ASG-QA is a continental tool that addresses all levels of quality assurance (institutions and regulatory) and their important links. The tool is envisaged to engender institutional cultures of quality and enhance the quality of higher education in Africa. This contribution reviews the progress made to identify recent developments, challenges still to be faced, and actions required to implement the ASG-QA fully.

The concepts of quality and quality assurance in higher education

The origin and definitions of the two concepts

Quality is a much-debated concept in higher education due to the significant number of players in the field (Mishra, 2007). Quality in higher education means different things to different stakeholders.

Ball (1985) defined quality as "fitness for purpose"; from this perspective, quality is achieved if the product or service fits its predetermined purpose (Harvey & Green, 1993). In the 1990s, five interrelated conceptualisations of quality were given by Harvey and Green (1993), namely: quality as exceptional, as transformative, as perfection, as fitness for purpose and as value for money.

Quality as exceptional: this refers to the achievement of high academic standards which are (still) something distinctive, elite and exclusive for most higher education institutions. This definition is frequently used synonymously with the concept of excellence, which applies to "an outstanding high level of quality that distinguishes the best universities from the rest" (Bleiklie, 2011, p. 21).

Quality as transformative: this symbolises the unique process that leads to changes through the enhancement and empowerment of students, who "are not products, customers, consumers, service users or clients – they are participants. Education is [thus] not a service for a consumer [...] but an ongoing process of transformation of the participant" (Harvey & Knight, 1996, p. 7).

Quality as perfection: this refers to consistent and flawless results. However, the definition has a rather limited value in the context of (higher) education, where flawless results are quite difficult to reach (Harvey & Green, 1993; Harvey, 2004-2019).

Quality as fitness for purpose: this is one of the most widely accepted definitions of quality (Ball, 1985; Harvey & Green, 1993), but at the same time, it puts an emphasis on the achievement of minimum standards and the use of numerical indicators which are often determined by external stakeholders (Westerheijden, 1999).

Quality as value for money: this refers to the return on investment through the achievement of the same (or better) results with lower (or equal) costs and, as such, concentrates on the relationship between the quality of output (product and services) and the financial costs incurred.

Quality Assurance

In the context of quality assurance in higher education, it is argued that during the 1980s, the notion of "quality" was transformed into "quality assurance" because of the growing importance attached to the "fitness for purpose" definition of quality (Westerheijden, 1999; Harvey, 2004-2019).

Quality assurance in higher education in Africa does not have a single purpose, a single method or a single operational definition. It can, and does, mean many different things in different contexts.

For Vroeijenstijn (1995), quality assurance is a "systematic, structured and continuous attention to quality in terms of quality maintenance and quality improvement" (p. 18), while for Woodhouse (1999), it refers to the "policies, attitudes, actions and procedures necessary to ensure that quality is being maintained and enhanced" (p. 30). This definition allows a distinction to be made between internal quality assurance (IQA) and external quality assurance (EQA). IQA refers to the policies, attitudes, actions and mechanisms implemented within an institution or programme to ensure that quality standards are met. EQA, on the other hand, refers to the policies, attitudes, actions and mechanisms of an external body which assess the operations of an institution or programme in order to determine whether it is meeting the agreed standards.

The term 'quality assurance' also signals a diversity of purposes, such as accountability, control, improvement/enhancement, public information, public reassurance/confidence and resource allocation. It also has different scopes, such as programme evaluation, programme accreditation, programme review, institutional evaluation, institutional audit, institutional review and institutional accreditation. Finally, it also applies to a diversity of methods such as peer reviews, inspection, compliance models and excellence models, as well as a diversity of outcomes: public and private information reports, recommendations, approvals and accreditation decisions.

Quality vs. Quality Assurance

Torrent (2016, 2022) introduced a distinction between Quality as one of the dimensions of HE policy and Quality Assurance as one of the instruments of this policy (only one of the instruments, but not the only or the most important one), which is used to make progress in the Quality dimension. This distinction is not considered in this contribution but should be applied in further work on the topic.

Harmonisation of higher education in africa

Harmonisation and revitalisation of higher education have become 'buzzwords' in the strategic educational frameworks of the African Union. The most documented effort in continental higher education harmonisation is the adoption of the Second Decade of the Education Africa Action Plan (2006-2015) by AU member states. Principles and goals that recognise the need for and importance of harmonisation are clearly outlined in this document.

At the end of the decade, a landmark strategic document entitled "Harmonisation of Higher Education Programmes in Africa: A Strategy for the African Union" (CESA 2016-2025) was issued, providing general direction for improving capacity and quality in higher education at continental level. As stated in one of its guiding principles, "harmonised education and training systems are essential for the realisation of intra-African mobility and academic integration through regional cooperation" (African Union Commission [AUC], 2016, p.11)

As a means of pursuing its continental objectives for higher education, the AU has set up the Pan-African Quality Assurance and Accreditation Framework (PAQAF) as an overriding framework for quality assurance and harmonisation of higher education at continental level. It consists of the following instruments, some of which are already being implemented, while others still need to be developed:

- African Standards and Guidelines for Quality Assurance (ASG-QA) (AUC, 2018)
- African Continental Qualifications Framework (ACQF)
- African Quality Rating Mechanisms (AQRM) - developed by the Association of African Universities (AAU).
- Addis Convention for Recognition - developed under UNESCO
- African Credit Accumulation and Transfer System - partially developed through the EU-funded TUNING Africa project.
- Continental Register for QA agencies and quality assured higher education institutions - to be developed.

And in the framework of the Africa–EU Strategic Partnership, the EU has funded two ambitious projects: ACQF (concerning the second of these instruments) and Harmonisations, Quality Assurance and Accreditation in African Higher Education (HAQAA-1, 2016 -2018; and HAQAA-2, 2020-2022), which covers the first ASG-QA. The ASG-QA delineate the minimum standards for higher education institutions and quality assurance agencies with regard to how they evaluate and ensure quality - an instrument which provides a common language for quality standards.

In this contribution, we document and analyse the development and implementation of the ASG-QA, which have gone through the drafting process (2016-2017), the pilot phase (2019) and the ongoing development of the User's Guide (2021-2022).

ASG-QA: one of the tools for the PAQAF

The African Standards and Guidelines for Quality Assurance (ASG-QA), developed in the context of the Africa-EU Partnership, were published at the end of 2018 (AUC, 2018). They are part of a larger process in Africa that aims to ensure the implementation of the Pan-African Quality Assurance Framework (PAQAF) and, as just mentioned, were developed under the Harmonisation of African Higher Education Quality Assurance and Accreditation Initiative (HAQAA Initiative), funded by the European Commission.

The HAQAA Initiative was meant to:

- Simultaneously reinforce national quality assurance agencies/bodies and higher education institutional quality culture
- Plant the seeds for aligning different existing regional quality assurance initiatives with the PAQAF, and help to prop up new regional initiatives and quality assurance networks; and
- Give all regions (Northern, Western, Central, Eastern and Southern Africa) and countries common tools with which to both relate and build their quality assurance systems, while respecting diverse needs and contexts.

The drafting of the ASG-QA started with the establishment of a Technical Working Group, the members of which represented the five regions of the Continent and had skills in the four AU languages - English, French, Arabic and Portuguese. This was followed by a mapping study of the standards and guidelines for higher education already in use in African countries. Email questionnaires to national QAAs and desk research were employed.

The ASG-QA were developed taking into account the diversity of purposes, models, methods and outcomes of quality assurance in Africa. A lot of consultation with regional quality assurance networks, the HAQAA Advisory Board and the African Union Commission (AUC), Vice/Chancellors of HEIs, student organisations, ministries and governing bodies of higher education was carried out. The online consultation received about 310 respondents from 40 countries. The ASG-QA were also benchmarked against the European Standards and Guidelines (ESG) and other international standards and guidelines.

The ASG-QA are based on the principles of autonomy, identity and integrity of higher education institutions.

Objectives of the ASG-QA

The broad objectives of the ASG-QA are to support higher education institutions and quality assurance agencies in Africa in implementing good practices for quality assurance; developing adequate IQA mechanisms; and assisting higher education institutions in assessing their own quality through self-assessment.

Specifically, they are intended to:

1) Provide a common framework and understanding of quality assurance among stakeholders;
2) Develop mutual trust and hence facilitate recognition and mobility of students and human resources across borders;
3) Ensure quality improvement/enhancement through self-assessment, external review and continuous monitoring and evaluation;
4) Promote transparency and accountability by providing appropriate information to the public;
5) Promote a sustainable quality culture in HEIs, alongside the AQRM

6) Support the production of relevant teaching and learning resources, as well as student assessment instruments;

7) Promote the international competitiveness of Africa's higher education system.

The intention is for the ASG-QA to advance quality improvement and assurance in higher education in Africa, support mutual trust in order to facilitate mobility and recognition across borders, and offer information on quality assurance in African higher education.

Content

The ASG-QA are presented in 3 parts:

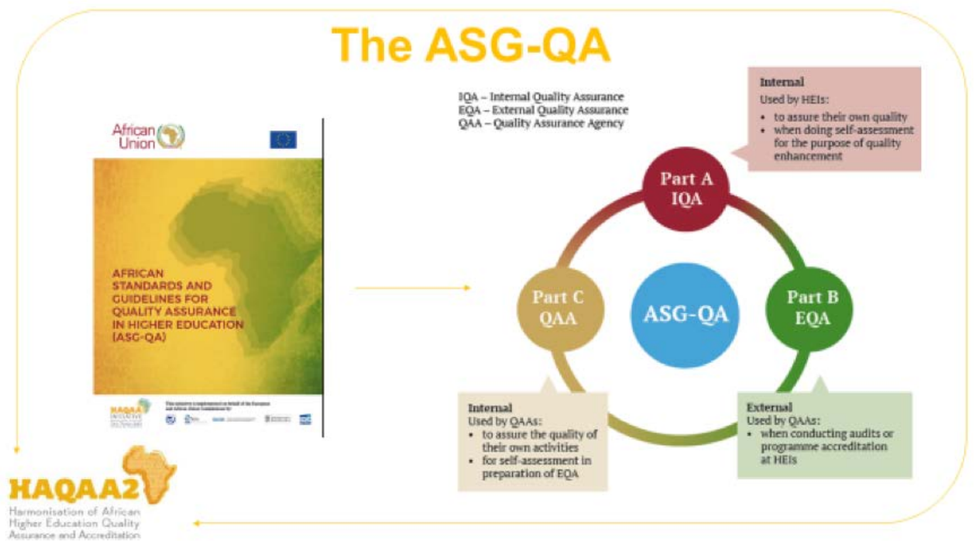
Part A: Internal Quality Assurance (IQA) of higher education institutions, including standards and guidelines for open and distance learning (ODL).

Part B: External Quality Assurance (EQA)

Part C: Internal Quality Assurance for Quality Assurance Agencies (QAA)

The 3 parts are interconnected and together form the basis of the quality assurance framework for higher education in Africa. The 3 parts should not be seen as separate entities but read as a whole, as illustrated in Figure 1.

Figure 1: Structure of the African Standards and Guidelines for Quality Assurance in Higher Education (ASG-QA).



Part A: Internal Quality Assurance (IQA)

Part A has clusters of 13 standards and 97 guidelines. These are shown in table 1

Table 1: Part A Standards

Standars	Nº of guidelines
Vision, Mission and Strategic Objective	4
Governance and Administration	12
Human Recouces	10
Design, Approval and Monitoring of Programmes	14
Teaching, Active Learning and Assessment	14
Infraestructure and facilities	3
Studenr Recruitmenr, Admission, Certification and Support Services	10
Research and innovation	6
Community Engagement	6
Information management	6
Public Communication	2
Cooperation, Staff and Student Mobility	5
Financial Recource Management	5

Part B: External Quality Assurance (EQA)

Part B describes the methodologies (or standards) used by QAAs for external quality assurance in higher education programmes and institutions. Part B is meant to ensure that the internal work undertaken by institutions is directly relevant to any external quality assurance that they undergo. Part B has a cluster of 7 standards and 32 guidelines as shown in table 2.

Table 2: Part B Standards

Standars	Nº of guidelines
Objectives of EQA and Consideration for IQA	8
Designing External Quality Assurance Mechanism Fit-for Purpose	2
Implementation Processes of EQA	5
independence of Evaluation	4
Decision and Reporting of WQA Outcomes	6
Periodic Review of institutions and Programmes	3
Complaints and Appeals	4

Part C: Internal Quality Assurance for Quality Assurance Agencies.

Internal Quality Assurance for Quality Assurance Agencies is done through self-assessment of their respective policies, practices, procedures and activities, and through an external review by another relevant body or peer organisation. This part addresses the question, 'who guards the guard'?

Part C has a cluster of 8 standards and 34 guidelines as shown in table 3.

Table 3: IQA for Quality Assurance Agencies

Standars	Nº of guidelines
Policies, Processes and Activities	10
Legal Status	1
Vision and Mission Statement	4
Financial and Human Recources	4
Independence od QAA	3
Internal Quality Assurance Criteria and Processes	4
Benchmarking, Networking and Collaboration	5
Periodic Review od QAAs	3

The ASG-QA are now available in four AU languages: English, French, Arabic and Portuguese.

The 2018 Pilot Exercise

A pilot exercise was run in 2018 in order to test the soundness or fitness-for-purpose of the methodology for the external review of quality assurance agencies in Africa, using the standards in parts B and C of the ASG-QA.

The methodology consisted of a self-assessment report by the agency, a site visit by a panel of three experts who interviewed key internal and external stakeholders, and a review report written by the expert panel. The methodology was tested through four pilot reviews of established agencies (ANAQ-Sup in Senegal, CNAQ in Mozambique, NAQAAE in Egypt and ZIMCHE in Zimbabwe). In addition, the methodology was partly used for four consultancy visits to newly established agencies or ministries preparing to establish an agency (AMAQ-Sup in Mali, Togo, Cameroon and Morocco).

For the consultancy visits, ministries were requested to select certain standards to focus on, rather than being evaluated against all the standards in parts B and C of the ASG-QA.

Taking the asg-qa forward under haqaa 2: the user guide

The HAQAA Initiative was established to support the development of a harmonised quality assurance and accreditation system at institutional, national, regional and Pan-African Continental level. HAQAA2 (2020-2022) is financed under the EU's Pan-African Programme and builds upon, upscales and promotes the results of HAQAA1.

The general objective of HAQAA2 is to improve the quality and harmonisation of African higher education and support students' employability and mobility across the continent. Concerning QA, its specific objectives are to:

- Further enhance the quality assurance culture in higher education institutions;
- Strengthen the capacities of quality assurance agencies to implement African Standards and Guidelines for quality assurance and enhance cross-regional coordination.
- Strengthen the capacities of the AU in implementing the Pan-African Quality Assurance and Accreditation Framework (PAQAF).

In order to achieve these objectives, HAQAA2's work plan includes training and capacity building for IQA and EQA, and the promotion of the ASG-QA as a tool for building internal and external QA systems.

In this context, a Task Force has been established to take the ASG-QA forward under HAQAA2. Its main functions are to:

- Assess the review methodology and its impact on the 8 countries that applied it/tested it in 2018 (Mar – July 2020).
- Interview the agencies and experts that participated and come up with recommendations for improvements and adjustments in the next round of agency reviews that will take place under HAQAA2.
- Debate the pending questions relevant to the agency reviews.
- Develop the User's Guide and Tool Kit for the implementation of the ASG QA in QA agencies and in universities, upon debating the appropriate for such a tool, which would respect the diversity of ways in which the ASG QA can be applied.

The Task Force members represent key organisations, have hands-on experience in applying regional QA-related principles and guidelines and agency reviews, have knowledge of continental harmonisation processes in Africa, and possess technical knowledge of both IQA and EQA. Many of the members were involved in the drafting of the ASG-QA or the implementation of other activities of HAQAA1 in 2015-18.

In September 2020, the Task Force held three online focus groups to explore the experiences of the external reviews of quality assurance agencies and the consultancy visits to ministries of higher education, which took place in 2018 under HAQAA1. The reviews and consultancy visits served to support the implementation of the African Standards and Guidelines for Quality Assurance (ASG-QA) in African external quality assurance frameworks.

Two of the focus groups (one in English and one in French) were aimed at representatives of the participating agencies and ministries (14 participants from 7 different countries) and one was aimed at the experts

who conducted the reviews (8 participants from 8 different African and European countries).

The participants discussed how the methodology of the agency reviews could be improved, the challenges in using the ASG-QA, and the outcomes of the reviews. All participating agencies and ministries commented that the review process had been useful to validate existing arrangements and provide external advice and recommendations for further development. Several participants provided examples of concrete changes that had come about as a result of the exercise.

In terms of possible improvements to the methodology, the main topics discussed included the need for additional training for agencies and experts, clarification of some aspects of the ASG-QA, better support for the experts to understand the local context, and support for agencies and ministries to follow up on the outcomes of the reviews and consultancy visits.

The outcomes of the focus groups are being combined with the results of surveys conducted with the agencies, ministries and experts, and an analysis of the review reports, which were also conducted by the Task Force in summer 2020. This information is being used to refine the methodology for the next round of agency reviews taking place in 2022 and to develop training for agencies, ministries and experts. So far, eight agencies and ministries from across Africa have registered for a review or consultancy visit. Applications are still being accepted.

The focus groups also served as an opportunity for African agencies and ministries to exchange information and experiences on recent developments and current challenges in external quality assurance in their respective countries, including financial sustainability and dealing with the consequences of the Covid-19 pandemic.

The same Task Force is also preparing a Users' Guide for the ASG-QA. The publication will include additional guidance on each of the standards of the ASG-QA, including case examples of how the standards can be implemented in various national and educational contexts. Furthermore, the Users' Guide will clarify how the ASG-QA relate to existing national and regional standards that are already established across Africa. It is hoped that the Guide will provide practical support to higher education institutions, quality assurance agencies and national authorities in developing their quality assurance frameworks in line with the continental standards.

The major challenges

The implementation of the ASG-QA faces a number of challenges at both institutional (HEI) and Quality Assurance Agency (QAA) level. At Institutional level, there are at least three challenges: (a) a lack of public awareness of the ASG-QA, their process and the benefits to higher education institutions in improving/enhancing quality, (b) inadequate human capacity, and (c) underdeveloped quality cultures within higher education institutions. At QAA level, three major challenges can be identified: (a) the internationalisation and professionalisation of expert panels, (b) the use of students on review panels, and (c) the independence of QAAs. These challenges are briefly analysed in what follows.

A lack of public awareness of the ASG-QA, their process and the benefits to higher education institutions in improving/enhancing quality.

Even though the ASG-QA have been translated into the 4 AU languages, published on the Internet and recommended for implementation, and their main ideas disseminated at conferences, seminars and workshops, most higher education internal stakeholders (teachers, students and technical and administrative staff) are not fully aware of their existence. This is worsened by the shortage of studies specifically aimed at examining how HEIs are implementing Part A of the ASG-QA. The few representatives of higher education institutions that do attend conferences, seminars and workshops have not taken on the task of disseminating the knowledge within their institutions.

Inadequate human and financial capacity

The quality assurance systems of higher education institutions and quality assurance agencies in Africa are still at an early stage of development and thus confronted by the challenges of costs and human capacity development. Operating a quality assurance framework at an HEI or QAA requires a substantial budget and well–trained, experienced staff. As noted by Shabani (2013), at least 60% of quality assurance agencies lack the human and institutional capacity to implement

their mandates effectively. A major concerted effort is needed to build capacity in HEIs and QAAs.

Underdeveloped quality cultures within higher education institutions.

Most higher education institutions in the continent do not have well developed internal quality assurance frameworks. Quality assurance is taken seriously (on paper) when preparing for accreditation, but once this has been achieved, it risks being shelved, when what matters is it becoming a continuous process. Developing and promoting a sustainable quality culture is important to ensure that: a) everyone in the institution has a collective and individual responsibility for maintaining and enhancing quality; and b) everyone understands the structural elements in place, and this is supported by committed leadership through trust, a good communication strategy and the involvement of all stakeholders. To achieve a successful implementation, quality assurance practices and processes should be embedded within the strategic plan of a higher education institution, but most higher education institutions in remote areas do not even have strategic plans.

The internationalisation and professionalisation of expert panels

The involvement of international experts is considered good practice in EQA, but many quality assurance agencies in Africa lack the financial capacity to hire international experts to form part of review panels because of the relatively high costs of travel, accommodation and daily allowances.

The other challenge has to do with the professionalisation of experts. Most of the panel members are academic staff with their own teaching load and are not trained experts in quality assurance, even though they participate in capacity development programmes to prepare them for evaluations.

The involvement of students on panels of external experts/peer reviewers

The concept of student involvement in external quality assurance is clearly stated in Part B, standard 4 of the ASG-QA, where it is expected that peer reviewers will be drawn from different stakeholders, including students. Whilst students' contribution to teaching and learning is unquestionable, their involvement as members of external experts in external quality assurance processes in the African Higher Education Space has not been fully researched and tested.

The independence of QAAs

Most quality assurance agencies in Africa fully depend on government funding to function effectively. However, standard 5 in Part C of the ASG-QA states that 'the QAA shall be independent and autonomous in its operations, outcomes, judgements and decisions'. In some cases, organisational independence is compromised by the fact that the nomination of CEO/ Chairperson/ President of the QAA is done by the government and at times it is difficult not to take orders from the appointing officer. In other cases, the appointment of divisional directors is done by the Minister responsible for higher education and not by the Council Board.

Concluding remarks and the way forward

This contribution has reviewed how the ASG-QA were developed under HAQAA1 and how they are being taken forward under HAQAA2. As no discussion of policy or practice concerning quality assurance can take place without an explicit and clear contextual definition of the use of the word 'quality', the contribution started by defining what quality and quality assurance are and then gave a context in which the ASG-QA were developed, including what the ASG-QA offer and what they do not.

In light of the challenges highlighted in this contribution, some steps can be recommended in order to facilitate the implementation of the ASG-QA in both higher education institutions and quality assurance agencies in Africa:

Higher education reform initiatives are complex, and require time, adequate resources, strong political will and academic cooperation and perseverance to work successfully. It seems impossible to carry them out by decree. **Stakeholders' involvement is an absolute necessity. For the ASG-QA to succeed, both external and internal stakeholders should therefore be involved and form part of the process, and their capacity in the area of quality assurance, both in higher education institutions and QAA, needs to be strengthened.** The efforts being made by the HAQAA2 Initiative in building capacity for both IQA and EQA should be multiplied in terms of numbers in order for the implementation of the ASG-QA to be successful.

In parallel, HEIs should be challenged to come up with learning programmes that deal with quality assurance in order to improve institutional capacity in developing quality assurance units and running quality assurance agencies.

Dissemination projects should be accelerated and implemented so that the ASG-QA reach every corner where teaching and learning takes place. Quality can only be assured by those responsible for providing higher education.

I strongly believe that these steps will facilitate the implantation of the ASG-QA within the African higher education space and establish a strong foundation for future development.

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New ways to solve the data collection problem in African Higher Education

Kibrome M. Haile

Abstract

CESA (Continental Education Strategy for Africa) 2016-25 represents the commitment of African countries, under the framework of the AU, to transform education and training systems in Africa, considered critical for national development and international outreach. For this to be effective, it requires informed data-based policymaking at the various levels of decision-making. However, despite efforts at continental and regional levels, collection and accessibility of timely, relevant and comparable HE data remains a serious problem in Africa. It is necessary now to build upon previous often unsuccessful experiences and look for new ways of addressing the issue. This contribution introduces developments towards such an approach, born out of the work of HAQAA 2's PDU Development Team. The approach focuses on data collection in the regions and uses the regions as building blocks for a continental solution. It follows consultations with relevant stakeholders in the continent; considers the relatively meaningful progress being made towards HE Integration and data collection in the regions and the need to complement these developments and avoid redundancy; is cognizant of the differences in the level of preparedness and practical necessities of the various regions and is informed by the overall trend of the RI process in Africa.

Introduction

African Countries, not unlike other nations all over the world, have placed the revitalisation of Higher Education (HE) at the centre of continental development. In an interconnected and dynamic regional and global economic environment, where knowledge is a key competitive advantage, it is impossible to overstate the aptness of such a decision. Especially because, notwithstanding the challenges persisting in African HE (AHE) systems, research has shown that HE has "a relatively large and statistically significant effect on the growth rate of per capita income" in the continent (Gyimah-Brempong et al., 2006). Any hope of sustaining and enhancing this contribution largely depends on the availability of accurate and relevant policy data and informed policy decisions by policymakers at all levels.

The AHE sector is increasingly expanding in terms of enrolment as well as the number of Higher Education Institutions (HEI) and fields of studies being offered in such institutions. Notwithstanding the positive aspects of such expansion, there are important dimensions of the HE sector that require our immediate attention. Developments from within and outside Africa have presented a continuously changing HE environment necessitating the concerted and informed efforts of all relevant HE stakeholders. **In today's global knowledge-based economy, it is imperative, more than ever before, for AHE decision-makers to develop policies and strategies responsive to local needs and global challenges to ensure HE in the continent becomes more relevant, inclusive, sustainable, innovative and socially responsible. This requires informed and data-based policymaking at all levels of the decision-making process.**

HE data is important for various actors in the sector. Students making decisions about which institution and field of study to enrol into; governments, international organisations and development partners allocating finance and funding, as well as every other stakeholder in the sector would greatly benefit from the availability of accurate and relevant data for analysis. Aside from being a crucial input for policymaking, monitoring and evaluation, widely accessible data will also facilitate the harmonisation of education policies. Especially in a regional context, where mobility of students and labour is bound to be higher, data accessibility plays a crucial role in facilitating credential recognition and compatibility of qualifications. Publicly available and accessible data is also an essential ingredient in ensuring accountability in the HE sector.

One higher common denominator persistent in all the efforts done so far by stakeholders in the AHE landscape and researchers alike is the lack or absence of relevant, accessible and timely policy data. The HE data problem in Africa has serious implications for timely and relevant policy making; effective coordination and cooperation between stakeholders; monitoring and evaluation of regional and continental strategies and policies; the successful implementation and follow up of global agendas like those of the Sustainable Development Goals (SDGs), as well as other broader economic and political goals set at the regional and continental levels.

The HAQAA2 Initiative (Harmonisation, Quality Assurance and Accreditation in African Higher Education) has supported a series of online policy dialogue events entitled 'CESA Higher Education (HE) in Focus' between May and June 2021 with a common thread linked to data collection for policymaking. HAQAA2 (2019-2022) is a Service Contract financed by the European Commission in support of the Africa-EU Strategic Partnership. It is implemented by a consortium consisting of OBREAL Global (lead), Association of African Universities (AAU), European Association for Quality Assurance in Higher Education (ENQA) and DAAD (German Academic Exchange Service).[1]

The events were proposed as part of the Policy Component of HAQAA2, which supports the implementation of the Continental Education Strategy for Africa (CESA), of the African Union (AU) and specifically for the CESA 'Cluster' of stakeholders responsible for HE. The events were organised in close collaboration with the respective CESA Higher Education 'Sub-Cluster' coordinators, who oversee a range of topics, from curricula reform to quality assurance and leadership in HE. Six online events were held as round table discussions, webinars and debates, open to all relevant higher education stakeholders in Africa, with the participation of different linguistic groups across the continent. [2]

More precisely, this online event series was part of the groundwork for the development of a "Policy Data Unit (PDU)" in Africa, which will drive a new approach and process for generating comparable higher education data across the continent, rooted closely in CESA and the different African Union structures which support it.

1. See: https://haqaa2.obsglob.org/
2. The event agendas, bios of speakers and recordings can be found at https://haqaa2.obsglob.org/cesa-in-focus

'CESA HE in Focus' examined different priority topics of the CESA Higher Education Cluster and generated recommendations for data and capacity building needs around these areas at the regional and continental levels. The conclusions and recommendations resulting from these events served as an important source of inspiration for the PDU Development Team set up by HAQAA2. Recommendations were made at various levels, including the institutional, national, regional and continental/Pan-African, and how they interconnect.

On the backdrop of this, the PDU Development Team is conducting a Mapping of Existing African HE data sources focusing on current HE data collection efforts, opportunities, caveats and data needs of the various regions of the continent. The team is also organising regional focus groups in which experts and representatives of the relevant stakeholders from each region participate. Informed by this process, this contribution outlines the necessary process and potential architecture for more coherent and comparable data collection in Africa.

The current move towards continental integration in Africa, in which the regional economic communities serve as important pillars, makes HE harmonisation one of its focus areas. This presents a unique opportunity to devise a new approach to solving the HE data problem in Africa. The suitable and preferable approach is based on the regions, building upon their own regional political structures, processes and plans. Practically, this means the establishment of regional data collection mechanisms through the active involvement of the relevant stakeholders at national, regional and continental levels. This can be achieved by establishing Regional PDUs. Regional PDUs will be designed in a manner responsive to the data and capacity building needs of the particular regions while at the same time having the required commonality to serve as the building blocks for a continental database as envisaged under CESA.

1. A brief look at attempts to solve the problem of he data in Africa

Most data collection conducted in Africa is done through ad hoc projects of a limited geographical scope and/or a limited period of time. Furthermore, most ad hoc data collections focus on a specific dimension of higher education, such as institutional mechanisms for quality assurance, qualification frameworks, acade-

mic demography, enrolment, gender parity, research output or accredited programs and disciplines. This information can easily become outdated because the data collection exercises are ad hoc and have no built-in mechanism to update changes that take place on the ground. Though not yet off the ground and fully operational, the most promising data collection efforts are found in the Regional Economic Communities (RECs) and REC affiliated University Associations.

a) Major efforts at the Continental Level

Various attempts at solving the problem have been made at the continental level, ever since the AU identified HE as an area of focus in its Plan of Action for the Second Decade of Education for Africa (2006-2015). The adoption of the Plan of Action signalled a clear political will and intent toward integrating HE in Africa. The AU established a 'complete revitalisation of higher education in Africa' as one of their goals and called for a 'systems approach' to be developed for this purpose (AU, 2006). This was followed by endorsement by the third Conference of Ministers of Education of the AU, a 'Strategy for Harmonisation of HE Programmes in Africa' in 2007. One key result of the strategy was 'cooperation in information exchange'. Information exchange was believed to be an 'essential and initial' building block for an effective harmonisation strategy. Hence, **it was stated that participating countries will make their information on HE programmes available to a central database accessible to all. This result area remains unattained even after more than 15 years of its proposal.**

As a continuation of the Second Decade of Education for Africa, which came to an end in 2015, the Continental Education Strategy for Africa (CESA 16-25) was adopted by AU Heads of States and Governments at their Twenty-Sixth Ordinary Session on 31st January 2016 in Addis Ababa (AU, 2016). CESA is meant to serve as the framework for transforming education and training systems in Africa.

CESA recognises that harmonised education and training systems are essential for realising intra-Africa mobility and academic integration through regional cooperation. This, among other things, presupposes and requires the collection, management and use of comparable HE data. Furthermore, CESA acknowledges the paramountcy of good governance, leadership and accountability in education management. It needs no mention that relevant, accessible and timely data is crucial to ensure accountability in education management by enabling regulatory bodies and the wider populace to monitor the performance of HEIs and the sector as a whole. It will also contribute improving good governance and leadership through evidence-based policy analysis and decision making. In recognition of this, CESA aims, as one of its strategic objectives, to 'improve management of education systems as well as build and enhance capacity for data collection, management, analysis, communication, and use' in the continent (AU, 2016, Strategic Objective 11). Even though CESA has four more years to go, concrete steps toward realising this strategic objective need to be taken right now to ensure its achievement at the end of CESA's implementation.

b) The experience from the regions

Along with the efforts being made at the continental level, the regions have undertaken several steps towards the integration of HE. In terms of taking concrete steps toward HE harmonisation, the regions seem to be in a more advanced state of integration, albeit each at a different pace. Perhaps, this is not unexpected considering that the overall regional integration at the RECs level is making much more progress than at the continental level (Oloruntoba, 2016).

In the Southern African Development Community (SADC), the Protocol on Education and Training, signed in 1997, provides the main framework for cooperation in education and training in the region. Articles 7 and 8 of this Protocol explicitly refer to the sector of HE and training, as well as research and development. In particular, article 7 (D) (h) identifies the establishment of a regional database as one of the spheres of cooperation in HE in the region. SADC Ministers of Education have also adopted in 2010 SADC Education Management Information System (EMIS) Norms and Standards. The norms and standards were intended to serve two broad purposes: to guide countries in developing or improving and maintaining national appropriate, comprehensive and sustainable EMISs; and to facilitate the harmonisation of EMISs to contribute toward the development of regional and continental EMIS networks.

West Africa is home to one of the most organised and considerably functional RECs in Africa – the Economic Community of Western African States (ECOWAS), established in 1975. Under the Revised Treaty of ECOWAS, member states agreed to cooperate in the full development and use of their human resources.

In particular, they decided to strengthen cooperation among themselves in the fields of education, training and employment; and harmonise and coordinate their policies and programmes in these areas. Additionally, ECOWAS has adopted a Protocol on Education and Training and a Convention on the recognition and equivalence of degrees, diplomas and certificates and other qualifications.

In Eastern Africa, the Treaty for the Establishment of the East African Community (EAC) envisions the harmonisation of HE and training systems in member countries to enhance the development of human resources and mobility of people, labour, and services. Furthermore, the Inter-University Council of East Africa (IUCEA) also plays a critical role in developing and harmonising HE in the region. Its mandates are clearly stipulated under the IUCEA Protocol of 2002 and the IUCEA Act of 2009, which also mainstreamed the IUCEA into the EAC Framework. It currently has member universities from the six EAC countries and various areas of cooperation among these universities. The EAC was declared by the Summit of Heads of State a Common HE Area in 2017, further deepening the integration in the region.

Northern and Central African regions have shown relatively slower institutional level regional integration in the area of HE. However, regional associations still have significant initiatives like the African and Malagasy Council for Higher Education (CAMES) and the Association of Arab Universities (AArU), focusing on aspects of HE relevant in the regionalisation process.

In addition to taking concrete policy and legislative steps toward HE integration in the regions, the RECs and University Associations affiliated with them are already taking steps toward addressing HE data collection and management in their respective regions. Under the auspices of SADC, the Southern Africa Regional Universities Association (SARUA) is building a regional education data collection mechanism. The IUCEA in EAC has also adopted an action plan to build a regional database to collect education data from member institutions (IUCEA, 2016). In the meantime, it is currently working on a data collection initiative focusied on staff demography, among other things. In Western Africa, the regional block has developed and adopted EMIS standards and guidelines to guide the regional education data management process.

Overall, even though the AU has a prominent role in setting the HE regionalisation agenda in Africa, the regions are further ahead in turning those agendas into policies and legislations that translate that agenda into domestic policies of member states.

2. forging a new way forward: regional PDUs

In the 'CESA HE in focus' events, the following were put forward as the key reasons behind the inadequacy of data for policy formulation in Africa: inadequate funding for research and data collection; inadequate well-trained personnel for data collection and analysis; a weak political will to make data available, and inadequate technology and facilities for data storage and retrieval. Therefore, solving the data problem in Africa needs to address these key factors.

However, it needs to be pointed out that the extent and nature of these factors vary greatly from one region to another and the approach to solving the problem needs to take into account this difference. **This requires, first of all, establishing data collection mechanisms – PDUs - in the regions. This "regional approach" is not new as it has already been utilised in areas like quality assurance, accreditation, qualification and recognition of studies and awards. The work in these areas can significantly inform the proposed approach.**

Once PDUs are set up at the regional level, under the auspices of the RECs, interventions to address the key challenges identified above can be tailored specifically to the needs of the particular region. The already advanced state of HE regionalisation in the regions will help address the lack of political will of member states or, at least, make securing political buy-in less restrictive. However, it should be noted that this too will require careful sensitisation, consultation, and negotiation. And setting up PDUs at the REC level can be presented as a building block toward setting up a continental data collection mechanism, fitting perfectly well with the overall approach being followed for integration in Africa.

Regional PDUs should be linked to national HE data collection mechanisms to facilitate timely data transfer. This will require setting up such mechanisms in countries where one does not exist or enhancing the capacity of existing systems. Since it will be targeted at a relatively small number of states in a particular region, building facilities and infrastructure as well as data collection, management and maintenance will be somewhat easier to undertake. Furthermore, putting to work adequate and skilled human resources, fami-

liar with the education systems of the regions, and with the needed specific knowledge of languages would be helped by setting up regional data units. It will also help provide comparable and disaggregated data accurately representing the reality of each region and countries in the region.

Given the different levels of readiness of the regions, the regional approach will also help identify the specific capacity needs of the regions and guide where exactly capacity development will have to be directed. Particularly, the regional data units will be designed to take the state of data collection in each region into account and, hence, help avoid a one-size-fits-all approach. This consideration is not limited to the technical level only. Rather, the overall level of HE harmonisation and integration in the regions will be taken into account. Among other things, factors like the existence of capable agencies at the national level to ensure the quality of data; the existence of regional standards and guidelines for data collection to ensure comparability of data; level of harmonisation of HE systems and qualifications; regional and national policies and laws on HE will be taken in to account.

Irrespective of the level of harmonisation, HE policy priorities and objectives at the national, regional and continental levels will differ in various aspects. As such, the data needs at these different levels of HE policymaking too will differ. The data collection approach needs to reflect these differences and can be designed in a manner that complements the data collections at institutional and national levels while at the same time filling the gap in HE data that is most relevant for goals set at the regional and continental levels.

Additionally, the PDUs will also undertake policy analysis based on the data collected and provide input for policymakers in their respective regions. This will complement the assessment of the performance of HEIs in the regions, which will have already been enabled by the availability and accessibility of HE data, while at the same time contributing towards mitigating the dearth in HE policy analysis relevant to the African regions.

Conclusion

The centrality of education in solving Africa's various challenges and ascertaining her competitiveness in a fast-changing global economic system has now been acknowledged by all stakeholders. With this conviction, the AU, its member states and the RECs have taken different measures to ensure the sector contributes to the sustainable development and overall betterment of the continent and its people. However, the African education sector in general, and HE in particular, face a multitude of challenges significantly hindering it from playing its central role.

One such major challenge in the HE sector is the availability of relevant, timely and accessible data. So far, African HE data collection is largely disintegrated, done in an ad hoc manner, and only covering a particular geographic area, a specific HE issue or done a limited period. **Generally, the inadequacy of funding for research and data collection, inadequate skilled human resources, weak political commitment, and inadequate infrastructure and facilities are blamed for the inadequacy of data for policy formulation in Africa. Since adopting the Action Plan for the Second Decade of Education in Africa,** the AU and its member states have adopted different strategies for solving the data problem in Africa. However, **the efforts made at the continental level have shown no meaningful progress so far. In the context of their regional integration, the RECs have taken significant concrete steps to harmonise the HE system in their respective regions.** As part of this integration and harmonisation, many of the RECs have adopted legislative and policy measures creating a suitable environment for cooperation and coordination between their member states on various issues, including education and training.

This enabling environment makes a regional approach to solving the HE problem more suitable and preferable. First and foremost, the existence of a legislative and policy framework for cooperation and coordination on HE in SADC, EAC and ECOWAS will help address the challenge emanating from a lack of political will. The experiences in these regions can be built upon to expand the same experience into the other regions. Secondly, there are already several initiatives at the institutional, national, regional and continental levels pertaining to HE data collection. Building upon and supporting these initiatives, as well as introducing a carefully designed

division of labour in data collection based on the data needed at each level will help avoid redundancy and duplication of efforts. Thirdly, the extent and nature of the key reasons behind the inadequacy of policy data in each region vary. Hence, solutions to the challenges faced in the regions need to take into account the particular characteristics of each one of them. Furthermore, data collection designed for each region needs to be curated to the identified data needs of the regions. Fourth, creating region-specific data units helps identify capacity needs in each region and tailor assistance accordingly. Fifth, by presenting current and relevant information and comparable data on HE in the respective regions, the regional approach will facilitate the assessment of HE performance and harmonisation in the regions. Sixth, due to the small number of countries in each region, fulfilling the necessary infrastructure and facility for data collection, effectively coordinating with national systems and managing and maintaining data will be relatively easy. Seventh, the regional data units will greatly contribute to regional policy-making by providing policy analysis specific to the regions. Finally, **once set up and functional, these regional data units will eventually serve as the building blocks for a continental level data unit.**

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Conclusion. The Future of Higher Education in Africa. The Association of African Universities (AAU) perspective: a Summary

Olusola Oyewole

Introduction

While Africa has been identified with higher education for many centuries, modern higher education, and indeed, modern Universities, have their origin in the colonial histories of many African countries. The history of modern higher education in Africa cannot be discountenanced from its colonial legacies. Hence most institutions in Africa have been patterned after their colonial pasts.

The early objectives of higher education in Africa were to provide workforce to serve the civil service of colonial governments. This trend continued following the early periods of independent nations in Africa. Over the years, the countries became independent, but many are still using the colonial curricula to provide their graduates.

Today, African higher education has to change; it must respond to evolving trends and face many challenges.

Challenges confronting higher education in Africa

The major challenges confronting higher education in Africa include:

1) Irrelevances of curricula
2) Weak quality assurance mechanisms
3) Poor funding
4) Deteriorating infrastructures
5) Inadequate access despite evident massification in classes
6) Poor teaching methods, which are still teacher-centred
7) Scarce research and weak innovation.

Moving into the future

As we move into the future, African higher education will need to take appropriate actions to confront current challenges. The strategies to be adopted must be multifaceted at the political and technical levels. The following actions need to be worked upon:

1) At the political level, strategies will need to be executed through national governments, regional collaborations, and the continental African Union Commission, creating synergies and avoiding contradictions. Efforts should be made to implement the vision and activities of the African Union Agenda 2015 to 2023. Governments of African nations should understand, ratify and apply the 2014 Addis-Ababa Convention on comparability and transferability of degrees, diplomas, and certificates.
2) Intra and Inter-African collaboration. Africa and African countries need to collaborate with other regions of the world to develop higher education. Such collaborations will enhance mutual learning, joint–agenda advancement, synergy and visibility, and promote mobility of staff and students involved in higher education in Africa.
3) Enhancement of Quality Assurance in Africa. This will involve the appropriate development of national, regional, and continental qualification frameworks in Africa.
4) Improve funding for higher education in Africa. Funding is required to meet some emerging needs, including infrastructural development and creating improved access to higher education in the continent.
5) Curricula reforms. Without curricula reforms, African institutions cannot provide the graduates Africa needs to drive its development. The focus should be to bring forth graduates with the appropriate skills and competencies for their workplace expectations. Africa needs to provide graduates that will create new jobs and have an entrepreneurial spirit for creativity and innovations.

6) Research should be given a special place in Africa. One of the lessons of COVID-19 in Africa is that the continent needs to develop its own knowledge base. It is not beneficial to fully depend on the innovations and research results of others in the face of a worldwide pandemic. African researchers should be encouraged to embark on research to solve African challenges and create African solutions.
7) Digitalization, Technical, and Vocational Education needs to be given a special place in the African higher education systems. Universities in Africa will need to reinvent themselves to creatively evolve Technical and Vocational Education and Training (TVET) into their programmes to be relevant to the needs of the time.
8) Capacity Building. One of the missions of higher education is capacity building. As we move into the future, strategic capacity building needs to be embarked upon. African higher education system needs to reinvent itself to build the future researchers and the future academics for the continent.

The role of the association of African Universities

The Association of African Universities (AAU) was established on 12 November 1967 in Rabat, Morocco. With over 400 member universities across all the regions and nations of Africa, AAU is the continental higher education body that serves as the lead agency to the African Union on higher education issues.

The vision of AAU (2021) is *"to be the leading advocate for higher education in Africa, with the capacity to support its member institutions in meeting national, continental and global needs"*. The mission of AAU (2021) is *"to enhance the quality and relevance of higher education in Africa and strengthen its contribution to Africa's development"*.

The AAU was set up with the following objectives:

1) To promote interchange, contact and cooperation among university institutions in Africa.
2) To collect, classify and disseminate information on Higher Education and Research, particularly in Africa.
3) To promote cooperation among African institutions in curriculum development and determining equivalence of degrees.
4) To encourage increased contact between its members and the international academic world
5) To study and make known the educational and related needs of African University institutions and, as far as practicable, to coordinate the means whereby those needs may be met.
6) To encourage the development and broader use of African languages.
7) To organize, encourage and support Seminars and Conferences between African university teachers, administrators, and others dealing with higher education problems in Africa.

Being a champion for higher education in the African continent, the AAU is the African Union's implementation Agency on higher education and coordinates the African Union Continental Education Strategy (CESA) cluster on higher education. It advocates for African higher education and maintains close relationships with regional bodies and international organizations such as ECOWAS, IUCEA, CAMES, SARUA, RUFORUM.

The AAU is also a collaboration platform. At AAU, we believe that regional and international collaboration is central to Africa's development and aspirations. Through its biennial and other high-level conferences and events, the Association brings university leaders and other higher education stakeholders together from around the world, thereby helping to promote collaborations and advance knowledge.

AAU is also committed to setting an intellectual agenda on the African higher education landscape that interrogates issues underpinning the continent's socio-economic development. The Association engages its higher education audience via various activities.

Final considerations on higher education, education, youth and development

Africa has a very young population. Education is the only viable option to equip these youths for the future. Special attention should be given to youth development in Africa by ensuring that Africans educate the young in such a manner that they will drive the development of Africa. This effort must also embrace the higher education sector as the apex and the server of the entire education system.

3.6 Latin America and The Caribbean

No region left behind: global responsibility in the face of inequalities. The future of universities in Latin America

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Abstract

The universities of Latin America face a host of pressures, but also a number of new developments. The aim of this work is to present the perspective of a group of men and women who make up the core team of the GUNi presidency in Latin America. Together, they address current trends both before and during the Covid-19 pandemic across an array of countries. Above all, they reflect on a renewed, equitable future of public goods and social justice, laying out strategies and goals to bring about such a future, both at the regional level and in each of the selected countries. In this vein, they analyse change processes, look at new institutional components, and examine trends and comparisons. As a point of reference, they draw on the Regional Conference on Higher Education (CRES-UNESCO, in its Spanish initials), which was held at the National University of Córdoba in Argentina in 2018. The event, which served as a key gathering place for associations, networks, universities, rectors, ministries and governments, now stands as a renewed point of departure for one of the most solid and consolidated intellectual and academic currents in Latin America and the Caribbean.

Introduction

Universities in Latin America are under question. First, they are institutions under dispute as commercial or business visions are set against others in which the state and the various options imposed as public policy predominate. Second, their relevance as the institution that used to be at the heart of knowledge production and scientific and technological innovation is questioned in light of the power of high-tech, global or transnational companies.

Universities have been in a period of long transition. From the 1990s to the current time, they have been changing substantially. New functions have been added such as innovation (their fourth mission). Their governance and the power of their administrations have been redefined, and they have resorted to resource diversification. Standards for the organisation and assessment of their academic bodies have been modified and they focus on society from a perspective of interculturality and social responsibility. The management of knowledge production and transfer has changed and curricula have been adapted to cross-disciplinary and interdisciplinary approaches, with the generation of initiatives to strengthen ties with the community. Centralised structures have been replaced by multicampus structures and local sites. Face-to-face locations have been combined with online or distance platforms. Consequently, universities are increasingly unrecognisable institutions if we compare then with the old days of cloisters and classrooms; closed or semi-isolated cubicles and laboratories; independent, unmovable campuses within a quasi-state; or teaching institutions focused on professionalisation.

In the midst of all these processes of change, structural alterations, new components, trends and contrasts, this article presents what is happening in a specific region, that of Latin America. It is based on a joint analysis by the GUNi regional working group and draws on the experience gained through the organisation of a major regional meeting (the only one at world level), in preparation for the World Conference. This was the Regional Conference on Higher Education (CRES-UNESCO), which was held at the National University of Córdoba, Argentina, in 2018. CRES convened and constructed a space of reference for associations, networks, universities, rectors, ministers and governments. It has become the benchmark for coordinating the expression of a very solid, consolidated current of thought in Latin America and the Caribbean on the diversity and integration of universities. This article reports on the advances, setbacks and current perspectives of universities. It also proposes a set of future initiatives to advance in the

discussion of a new situation of equity, inclusion and sustainability, so that no region is left behind. It considers the conceptual approach that at international level is contained in Concept Note of the GUNi World Report of 2022.[1]

1. General context of higher education in Latin America

We are facing a **trend** situation that must be addressed in a critical way. The aim is to promote changes that should be maintained and supported at public policy level by states and universities – particularly public universities.

Our regional situation is one in which there is a severe cyclical crisis and systematic processes of intervention to establish new mechanisms of control by the government and other prominent actors, as described in this article. These mechanisms have threatened university life, university autonomy and the right to academic freedom. In other nations, this is not occurring in such a systematic, aggressive way but enormous difficulties are still faced.

The most serious, critical trend in the region is the extreme commercialisation of the education service that constrains, hierarchises and segments the formal structures of higher education for the public and social good. For-profit, low-quality education options are promoted, with an instrumentalist view focused on earnings and shaped by the demands of a mercantilist, individualistic economy and the alleged advancement of global cyberculture. In response to these positions, political-educational and strategic reflection is required to challenge the predominant technocentrism and the instrumental and economicist rationality and make way for critical and creative thinking, supported by the autonomy of universities and their projection as institutions of public good and guarantors of a universal human right.

At the start of the twenty-first century, out of the total number of higher education institutions in Latin America and the Caribbean (8,756), there were 1,917 private universities, 1,023 public universities, and just over 5,800 higher education institutes of all types and levels. In the entire region, around 14 million students were enrolled in further education. In total, this represented 259 higher education students for every 10,000 inhabitants, with a gross enrolment ratio of 28.5%. In most countries, women's participation already exceeded 50% of enrolled students. In some countries of the Caribbean and the Southern Cone, it represented over 60% of total enrolments. In comparison, the gross enrolment ratio in countries of North America and western Europe reached 57%, with 51.7% of women's participation.

Sixty per cent of enrolment in postgraduate higher education is concentrated in three countries: Brazil (28%), Mexico (17%) and Argentina (14%). These countries are followed in order of importance by: Peru (6%), Central America (6%), Chile (4%), Bolivia (2%) and the Caribbean (1%).

Countries that have between 75% and 100% of higher education students in public institutions are Cuba, Uruguay, Bolivia, Panama, Honduras and Argentina. Countries that have a greater percentage (between 50 and 75%) of students in private institutions are Brazil, Chile, El Salvador, Colombia, Costa Rica, Nicaragua and the Dominican Republic. In an intermediate position, that is, countries with high percentages of students in both the public and private sectors, are Ecuador, Mexico, Venezuela, Paraguay, Peru and Guatemala. However, **the trend of increasing participation of private higher education institutions has been rising constantly in the region.**

In terms of the distribution of students by knowledge area and degree, the strong trend of concentration in social, business and legal sciences has been maintained. The number of students in these fields was 35% of the total in some countries (such as Argentina, Chile or Surinam), 40% in others (for example, Brazil, Colombia, Guatemala, Mexico and Panama), and up to 50% in others (El Salvador). In sciences, the regional average was around 10% and in some cases it was slightly higher. The percentage of students in engineering subjects fluctuated between 7% (Argentina) and 29% (Colombia). If the percentages of students enrolled for Social Sciences, Administration and Law is added to the percentages of students in Humanities, Arts and Education, the figure reaches over 60% of the total.

Researchers mainly work at higher education institutions, particularly in public universities, where there are 65% of the total. This represents 0.87% of researchers in every 10,000 members of the economically active population (EAP). In terms of scientific publications, Latin America and the Caribbean produce only 2.6% of the total number of publications worldwide.

T**he general situation of the advance of knowledge is very uneven, from a comparative perspective. Knowledge generation is highly concentrated in a few countries and not very dynamic.** This is due to factors such as brain drain (there are more Latin American postgraduate students in universities of the United States or Europe [122,806] than in the region [33,546]), low investment in higher education (between 0.5% and 1%) and the fact that postgraduate studies are mainly concentrated in three countries: Brazil, Argentina and Mexico. Most of the investment in research and development comes from the state (60.8%) and is received by a handful of universities and researchers, most of which are also in the three countries mentioned above (138,653 researchers in Brazil; 51,685 in Argentina and 43,592 in Mexico).

This has a negative impact on opportunities for social advancement, job mobility and entry into formal, stable jobs for graduates of secondary, upper secondary and higher education, due to the segmented structure of the education system that can be equated with the socioeconomic disparities found at national and regional level.

However, the reduction in public resources and the privatisation of education services (that cover a limited population because of payment capabilities) has decreased many countries' opportunities to carry out waves of expansion that could adapt to the rise in educational demand, particularly in public education, even in the majority of the largest, most developed countries in the region. To this are added the conditions of inequality that affect continuous, successful educational pathways. These pathways are hampered by considerable differences in income and salary levels, belonging to an indigenous group, first language, gender, physical disabilities and other obstacles of a geographic and sub-urban nature.

Even so and considering the increase in number of institutions and other groupings, **in the last ten years public, national, independent universities** (those defined as "macrouniversities" (Didriksson, 2022) **were the institutions that grew most in size. They were the institutions that recreated a privileged place in the spectrum of diversification and managed to express themselves, sometimes exclusively, as the only complex institutions, above all due to their growth in research and postgraduate studies.**

These universities had found the next step to take in the dynamic of changes that began to emerge swiftly at the start of this century. Changes occurred in the context of a new debate on the concepts of quality, transparency in funding, rendering of accounts, flexibility of the curriculum, equity and relevance, use and handling of new information and communication technologies, knowledge production and knowledge transfer, all within new legal, legislative, political and organisational systems.

2. The debate on the change in higher education

In this context, **from the start of the new century, some countries started a process of redefining their legislative and normative guidelines and promoting systemic changes in universities.** These included far-reaching reforms supported by the vision of progressive governments that faced and regulated the extreme privatisation, and introduced policies and programmes for inclusion and the re-evaluation of academic life. Above all, these countries promoted institutional initiatives of the state as the promoter and guarantor of higher education as a public good, and of the commitment to population segments that had been permanently excluded from this level of studies. This opened up a regional debate on the alternatives for the future, with to-ing and fro-ing, advances and setbacks that were closely related to the changes that took place in various Latin American governments.

2.1 Two phases in the processes of change

The processes indicated above should be compared with what happened in two contrasting phases in public policy on higher education in the region. **First, in around 2010,** which is the cut-off year for this cycle, **some countries presented legislative initiatives on public policy and on assertive, inclusive programmes that substantially improved access, retention and the organisation of higher education institutions,** and encouraged the creation of new universities. From 2018 (also a cut-off date for the cycle) t**o the current time, governmental changes occurred in many of these countries that totally overturned** the progressive policies and democratisation that was being constructed, **and shifted to the opposite site, that is, towards**

1. See https://www.guninetwork.org/files/concept_note_guni_2021_new_visions_for_he_2030_def.pdf

repressive, far-right regimes that have led to an extremely worrying climate of persecution of universities and a reduction in their resources, affecting public universities above all.

Between 2018 and 2020, movements that had an impact on elections or coups of a "new type" (unlike those during the 1960s and 1970s with direct military and police intervention) took place under the pretext of electoral movements or the outbreak of mass student and civil society protests. This situation affected efforts to expand enrolment, create universities and promote projects to include groups and sectors that have been excluded from this educational level (as in Brazil, Ecuador, Bolivia, Uruguay and Argentina). It altered constitutional projects, proposals of broad, inclusive development and far-reaching academic reforms.

2.1.1 First phase

Around the first decade of this century, various governments, notably in Argentina, Brazil, Ecuador, Bolivia and Uruguay, accepted social demands to expand the capacity of higher education systems, based on an emerging reorganisation of public policy and various actors who demonstrated in favour of a ***great transformation*** in universities. This was seen on a mass scale in the demands of the Chilean student movement (2011–2014), that of Puerta Rica (2011–2012), Colombia (2011/2020) and Mexico (2011–2012), to mention just a few cases. These movements represent a qualitative shift in the way the sector presents its demands on regulations and policies, and in the main trend in the academic world of a traditional agenda to debate the public and private issue. Demonstrations have gone beyond the institutional level to reach the political arena nationally or sub-regionally.

From other perspectives, in the cases of Argentina, Ecuador, Bolivia, Brazil, Venezuela or Uruguay, and even in the Central America and Caribbean countries, the discussion of a new agenda for all of higher education was received with great interest in the university communities and even beyond them in other sectors of society and in national political life.

This was the case in Ecuador, for example, where the Organic Law on Higher Education (LOES, 2010) was approved after strong university student action. This made it possible to redefine public policy on higher education in the country. In Brazil, significant affirmative programmes were introduced for minorities and sectors that are traditional excluded. This led to a considerable increase in post-graduation rates (particularly at doctoral degree level) and in scientific research.

Among these experiences and reforms, some academic innovation schemes, concepts, policies and programmes have been organised and promoted that confirm a kind of new wave of changes in higher education in the region. They are based on the debate at the Regional Conference on Higher Education 2008, held in the city of Cartagena de Indias, Colombia.

There are many examples of institutional advances and innovations that are emblematic in many cases, as they represent efforts to go beyond traditional models of universities from a range of alternatives. Given the space available in this article, some of the best known are described below (Didriksson and Moreno, 2016) (in alphabetic order):

- **Argentina:** this is the country (along with Brazil) that, during the governments of Néstor Kirchner and Cristina Fernández de Kirchner, took the initiative to create new state-subsidised public universities. It is perhaps the country that has most strongly defended and legislated on the concept of public good. This is evidenced by the fact that, in just a few years, important national universities were created within and outside the perimeter of Greater Buenos Aires. These include the expansion of subsites of the emblematic University of Buenos Aires (UBA), with 12 regional centres (in areas of high deprivation) and the others in the interior of the country. They are the forerunners of a new decentralisation system, particularly in the provinces of Córdoba, San Luis and Entre Ríos, among others.
- **Brazil:** public higher education institutions were also created, with the establishment of a federal network of 38 education, science and technology institutes and 18 new universities, under academic innovation schemes. Examples are the Federal University for Latin American Integration (UNILA), the University for International Integration of the Afro-Brazilian Lusophony (UNILAB) and the Federal University of ABC. These institutions have structures, academic offerings and a direction that is strategic for Brazil. They are fundamental to disrupt the vision of the traditional university that transcends its own references. Furthermore, since 2004, the government has offered full and partial grants for low-income students in private institutions. Since 2012, 50% of places in federal higher education institutions have been reserved for students from public schools. These places are free and racial quotas are applied.
- **Colombia:** Also with the aim of increasing coverage levels in a country with a high concentration of private universities, Regional Higher Education Centres (CERES) have been promoted. These have a public-private form of organisation and financing and are run under blended systems that combine face-to-face and online education. They are located in places where there is low coverage of traditional higher education institutions or of large private universities. By 2012, there were 176 of these centres with over 30,000 students. Since 2014, Colombia has moved away from a predominantly private higher education system. Now the public sector accounts for just over 50% of total enrolment.
- **Ecuador:** As a result of the enactment of the Organic Law of Higher Education (LOES), considerable changes in the higher education system were promoted during the government of Rafael Correa. Notably, four new universities were created that are considered emblematic. These are the National University of Education (UNAE), the Amazon Regional University (IKIAM), the University of the Arts (UNIARTES) and the University of Experimental Technology and Research (YACHAY). All of these are public universities, designed to foster a transformation model, as stated by their lead minister: "Since 2008, the government in Ecuador has publicly started to address Ecuadorian universities with criticism and proposals. With this action, the government has initiated a process of transformation in the higher education sector that has not been seen since the return to democracy in 1979" (Ramírez, 2010).
- **Mexico:** For decades, the Mexican state has not contributed to the creation of new federal universities. However, it has established a number of institutions with dual federal-state funding. These include the Autonomous University of Mexico City (UACM) and the University of the Wetland of the State of Michoacan (UCEMICH), which have alternative models fostered and sponsored by their own local governments. In addition, the main federal and autonomous universities have promoted the creation of alternative sites, such as sub-campuses or campus extensions. In 2018, the proposal was to create 69 intermediate universities (technical), 30 new campuses as extensions of consolidated universities and 4 federal universities (goals that have not yet been met).
- **Paraguay:** This country only had one university in the past. However, by the beginning of the century, seven further universities had been established in the country, in response to the growing demand for higher education. This led to a notable increase in the private sector above the trend in rate of growth, as has occurred in other countries in the region.
- **Peru:** Since the start of this century, 21 public universities have been created in this country. However, the growth of the private sector has also been constant. In 2012, a moratorium was declared to suspend the growth of public institutions, in order to reconsider policies in the sector and redefine the regulatory framework for a new period, with a focus on models of "research universities".
- **Uruguay:** As in Paraguay, the Dominican Republic and other Caribbean and Central American countries, for decades just one university existed in this country. It was considered the bastion of higher education and the creator of sector policies: the emblematic University of the Republic. With the new century, a new institution has been created, the Technological University of Uruguay (2013). Furthermore, the establishment of a new public university (specialised in teacher training) is under discussion in a country where, like Argentina and Cuba, public institutions are much more predominant than private institutions.
- **Venezuela:** In the midst of considerable controversy at university level regarding the relationship between quality and quantity, the Bolivarian Government of Venezuela proposed extensive regionalisation and creation of university and non-university sites. As a result, at the beginning of the century, 232 sites and extensions of higher education institutions existed, of which 59 were situated in the urban area of Caracas. Nevertheless, enrolment at private higher education institutions stood at 77% of the total. To increase coverage levels, university villages, territorial polytechnic universities and twenty new universities of a public nature were created throughout the country, as part of a strategy that focused on the "universalisation" of the gross enrolment ratio. The new universities include the Bolivarian University of Venezuela, the Film and the University of the Armed Forces. In 2010, half a million students had enrolled in these institutions. Between 2012 and 2013, five further state universities were created, and in 2014 the creation of four new territorial universities was planned in other states.

This general overview of change is clearly incomplete because it should include the three universities that are being developed in Bolivia (UNIBOL), the many new sites of national universities, or joint integration projects that are shaping a new scenario. Examples are the projects promoted by the Association of Universities of the Montevideo Group (AUGM) and MERCOSUR or those planned by the Union of South American Nations (UNASUR), to mention just some of the impressive multinational efforts being made in higher education, science and technology. However, **the region is entering a new period of institutional expansion and academic and social innovation, in which the establishment of knowledge and learning platforms, the extensive use and handling of new technologies and the management of innovation processes is beginning to become apparent and ties in with the idea of a "Latin American knowledge society" or a "common space of knowledge"**, from the perspective of emphasising the social good of studies and university research.

2.1.2 Second phase: the transition

This period ended between 2017 and 2020, with regime change in several countries. As a result, the environment of creation and innovation in new and traditional universities began to change significantly.

At the start of 2019, the first civil disturbances of the period were triggered in Haiti when various corrupt actions associated with the PetroCaribe case and Jovenel Moise's government were made public. This was added to the worsening economic crisis in the country, which is perhaps the poorest in the region. The disturbances led to over 40 deaths but their impact was unsubstantial: they only brought about the dismissal of the prime minister and subsequently the assassination of the president. In Nicaragua, student and civil protests were sparked by the proposal of a social security plan promoted by Daniel Ortega's government, and other measures that were considered detrimental to university autonomy. The number of deaths during April was estimated at around 325. In Puerto Rico, during July, the general public became aware of many instances of corruption associated with appalling government management and reprisals against the University of Puerto Rico, the most important university in the country. This was added to the economic and infrastructure crisis experienced during the natural disasters suffered by the population. The result was mass protests of citizens and students, which brought about the dismissal of the highest level of government that had been dependent on the United States and led by Ricardo Roselló. The unstable conditions continued during an electoral period that was subject to the interests of Donald Trump's government.

In the continental part of Latin America, civil and university protests proliferated in 2018 and above all in 2019. They occurred in response to a constitutional reform proposal in Panama. In Ecuador, they were sparked by cuts in subsidies and the polarisation of the government led by former president Lenin Moreno and then the current government of banker Guillermo Lasso. In Colombia, a national strike was held against the government of Iván Duque. Like his predecessor, Duque had adopted measures that set back what had been achieved in previous governments, particularly in the area of higher education. In Bolivia, a coup was staged against the presidency of Evo Morales with clear overtones of racism, religion and political reprisals by the population's middle and upper classes. In Chile, during Piñera's government, in a context of polarisation and debate on university reforms, the government decided to increase the price of public transport. Mass protests broke out that converged on the demand for a new political constitution in which the topic of university educational reform was a crucial factor (Rodríguez, 2020).

In Argentina, electoral change occurred in a positive way in favour of president Fernández, with a new discourse promoting higher education. It remains to be seen what happens in Uruguay, where the validity of the university had been guaranteed based on the approaches of extensive coverage, development of inclusion programmes, and creation of subregional alternatives such as those established by the Association of Universities of the Montevideo Group (AUGM). In Mexico, with López Obrador's government, the regime change has been very positive like the new government of Argentina. This is because it is driving legislative and social changes with substantial reforms and programmes designed to achieve broad inclusion and social equity in the education and university sector.

In Brazil, with the arrival of far-right president Jair Bolsonaro, the environment is one of real tension and persecution of public universities and their elected authorities. Fear has spread among teachers in an inconceivable way.

What had been achieved in these countries is vanishing fast.

This brief review of some of the **events experienced during the last decade in the region shows that what has been achieved in some countries to bring about substantial changes in the university system can collapse from one year to the next. This is causing conflicts of great educational and social reach. The outlook for the region continues to be extremely unsettled.**

In a few more years, we will see the results of the events and changes that are underway in Chile, Uruguay, Mexico, Argentina, Bolivia and Colombia, among other countries. This will enable a different situation to be revealed that could increase the certainty of the agreements that have been signed and adopted by a considerable number of universities, as in Córdoba, Argentina, during the UNESCO Regional Conference on Higher Education (CRES-2018), and those signed at government level to achieve the 17 Sustainable Development Goals (SDGs) promoted by the United Nations (UN).

3. The transition and the future: five case studies

3.1 The right to higher education in Argentina: internationalisation and regional integration based on academic collaboration networks

The discussion on university democratisation has gained central importance on research agendas in the last 15 years in Argentina, based on the formulation of higher education as a public good and its increasing appreciation as a universal right that should be guaranteed by the states (Chiroleu, 2018; Chiroleu and Iazzeta, 2005; Del Valle, Montero, and Mauro, 2017; Lucardi, 2018; Rinesi, 2015). This discussion is connected to strong university mobilisation in the region, particularly in the framework of the last two Regional Conferences on Higher Education (CRES) in Latin America and the Caribbean (2008, Cartagena de Indias, Colombia and 2018, Córdoba, Argentina). In this section, we review the main university transformations of the country after its democratisation. We focus on the policies of the last 15 years and how these are associated with the formation of an autonomous way of processing university internationalisation, based on a supportive, regional proposal.

In Argentina, this path is linked to a series of historical transformations that strengthened the tradition of public universities and the progressive process of massification. This process began with the University Reform of 1918, with its demands for a democratised university from an institutional perspective, associated with the social problems and the situation in Latin America. In this pathway to obtain rights, President Perón's 1949 decree on free university education should also be considered; it was the starting point for the massification of the system. Other factors are the debates in the 1960s on the role of the university and scientific and technological production in processes of national liberation; and the creation of dozens of new state university institutions, especially in the 1970s and the 1990s.

However, other trends counterbalanced this democratising perspective. They include the emergence of international cooperation agencies' guidelines and the establishment of a private subsystem of university education in the 1960s. Another trend was the wave of neoliberal reforms, implemented under the conception of education as a deregulated, denationalised service and the suspicion and demonisation of public institutes, and translated into greater governmental pressure through evaluation and selective financing policies. In Argentina, these reforms were expressed in Law 24.521, which is still in force today, with some amendments introduced in 2015.

The political scene in Latin America changed at the start of this century with the simultaneous entry of popular and progressive governments in many countries that gained political power with strong social support. As a result, CRES of 2008, supported by UNESCO, confronted the hegemonic conceptions of the previous decade and proposed that higher education should be considered a social and public good, a fundamental human right, whose guarantee should be a priority of states.

I**n this phase, which coincided in Argentina with the governments of Néstor Kirchner and Cristina Fernández de Kirchner (2003–2015), a new cycle of democratisation of the university took place that was made effective in many actions.** First, eighteen new universities were created (some based on existing institutions but most completely new) in various parts of the country and in municipalities of Greater Buenos Aires that have a large proportion of vulnerable people. Second, funding of research institutions and

organisations increased considerably. In this pathway, notable actions were the creation of the Ministry of Science, Technology and Innovation and the restructuring of salaries and access to the scientific research career in Argentina. Third, **a series of social policies were introduced that contributed to guaranteeing the completion of secondary education and promoting admission, retention and graduation in further education.** These included university grants and Progresar (progress) grants for upper secondary and further education, the provision of computers for adolescents in public schools, secondary school completion plans for adults, direct transfers such as the universal child allowance to stop people from dropping out of upper secondary education for economic reasons, and initiatives for tutors to support new students, to name just the most emblematic. Fourth, **it was stressed that the knowledge generated by the university and the scientific-technological system should benefit various vulnerable sectors and contribute to the reduction in social inequalities.**[2] However, these innovations coincided with a certain degree of inertia in the previous agenda. **Although initiatives were promoted that tended to make the right to higher education effective, they were not reflected in comprehensive, complete regulatory reform.**[3]

These national policies were also coordinated with the internationalisation strategies of MERCOSUR, which were at a turning point in 2008, with the configuration of a permanent regional accreditation system for the academic quality of qualifications (ARCU SUR) based on an experimental mechanism developed between 2004 and 2006. In addition, considerable qualitative and quantitative advances were made in mobility initiatives and in the implementation of policies to create academic networks. These included initiatives such as MERCOSUR's Studies and Research in Higher Education Unit (NEIES), launched with MERCOSUR's operational plan for the Education Sector, 2011–2016. From NEIES, thematic networks and networks for reflection on the process of the internationalisation of higher education could be developed, in line with the challenges of regional integration[4]. The first action of NEIES was to launch an online journal called *Integración y Conocimiento*[5] (Integration and Knowledge). Subsequently, seminars were held. Later, progress was made in subsidies for research networks on subject areas that were defined as priorities: internationalisation, assessment, institutional diversification, recognition of qualifications, democratisation, university outreach, university extension, online higher education and the role of universities in environmentally sustainable development.

The formation of university networks established greater interaction between institutions and their academic communities. It enabled greater advantage to be taken of the capabilities of each one to boost individual strengths. It provided a starting point for knowledge to be shared horizontally and vertically (among universities and between these and disadvantaged sectors of society). **It also formed the basis for establishing new forms of regional coordination and integration** (Gazzola and Didriksson, 2008; Gazzola and Goulart Almeida, 2006; Zarur Miranda, 2008). At the same time, these new forms of interuniversity cooperation required the creation of synergies and complementarities, which challenged the identity of universities.

The networks generated regional studies on the priority topics. This stimulated a regional field of knowledge, as the research was developed regionally, beyond the closed views of national realities. In this way, an important political arena was formed to reflect on the internationalisation of higher education and the role of universities in strengthening the process of regional integration (Perrotta and Del Valle, 2018).

These networks had a recognisable impact on CRES 2008 proposals. This was not only due to their capacity to mobilise and propose an approach to counteract competitive internationalisation, but also because of their ability to generate support and synergies that served to occupy an empty discussion space around CRES 2018. For example, networks that are part of various programmes, such as the Programme for the Promotion of the Argentine University (PPUA)[6] in the Programme for the Internationalisation of Higher Education and International Cooperation (PIESCI) or NEIES of MERCOSUR, helped to organise the regional talk "Evaluation of the Declaration of Cartagena de Indias and Contributions to the Regional Conference of Higher Education 2018" (Buenos Aires, 10 November 2017). This event brought together over 350 researchers in the field of higher education studies from the entire region and a set of university actors (teaching unions and students) to discuss the main achievements and challenges of the last ten years and to generate proposals for the new regional conference planned for the following year. [7]

This coordination, together with similar examples found in other parts of the continent, served to create a sufficiently solid framework for the conference in Córdoba to reaffirm the principles established in Cartagena. Some advances in the discourse were even made in a regional political context that was more adverse to the extension of rights.

The change in government that took place in December 2019 in Argentina created the opportunity to discuss one of the main topics that was pending from the 2003–2015 period: the approval of a new higher education law that fully consolidated in Argentinian regulations the perspective of the university and knowledge generation as a right and a public and social good. The new law would incorporate the democratising innovations highlighted above and give direction and meaning to the future of the Argentinian university system. The reform would also involve including in regulations the supportive, cooperative method of regional integration that had been introduced since CRES 2008. In this approach, it is considered that higher education is an instrument of development and cooperation between nations and that the right to higher education goes far beyond the individual question of access, retention and graduation to encompass the strategic issue of the distribution and appropriation of knowledge. In addition, the private sector must be required to align with the social needs and the strategic goals of the country and the region. The strategic nature of the arts and culture must be recognised in the fight for cultural sovereignty, sustainable development and multicultural integration.

At the present time, largely due to the experience gained in academic networks and their coordinated action in regional debates, it is clear that guaranteeing the right to university at national scale is inseparable from a necessary international and cooperative perspective.

3.2 Bases and limits of sustainable development in higher education in Brazil

In 2015, when the United Nation's Sustainable Development Goals (SDGs) were established, Brazil had followed a path of a decade of expansion in educational provision. It had focused on increasing free or subsidised places and on the association between public higher education and science, technology and innovation. These advances established the country as a Latin American leader and a rising system on the global stage. This process gathered pace from 2003, during the federal governments of the Workers' Party. At the end of 2014, the last year of the first government of Dilma Rousseff, a National Education Plan was approved to guide the growth of the national system with goals relating to the expansion and qualification of higher education. The consolidation of this process converged with the principles supported in the Final Statement of the Regional Conference on Higher Education in Latin American and the Caribbean 2018 (CRES 2018).

However, from 2015, the change in the interrelationship of political forces and the economic situation led to a reconfiguration of state action, which crystallised in the collapse of the presidency in 2016. This broke up a cycle of public policies associated with a national project that had adopted education as a pillar of social development. The political change exacerbated a context of crisis that was already limiting public and private

2. In the analysis in this article, we do not address science policies. However, these kept in step with university policies and followed similar trends. They included an initial set of initiatives to "recover" what had been "lost" in the previous administrations and in the hierarchisation of the activity. Then, policies were introduced to restructure and inject funds into the budget, to expand, to improve infrastructure and to support the promotion of international networks of scientific collaboration. Finally, they reached a certain notion of the right to science as a step to promoting social and economic development. This included a discussion of the relevance, usefulness and purpose of scientific and technological research to many areas, production sectors and social agents; the approval of regulations for assessment; and even the promotion of non-commercial open access to the results of research financed with public funds. This action was not without certain contradictions, particularly regarding the internalisation of internationalised assessment criteria (Perrotta, 2017a, 2017b).

3. In 2008, a process of debate was started to decide on new university regulations. However, this was thwarted by political circumstances that went beyond the university framework. In 2015, driven by the educator and former representative Adriana Puiggros, a partial reform of the law from the neoliberal years was defined to guarantee in legislation the conception of the university as a right in Argentina, its cost-free status, unrestricted access and commitment to society.

4. Three goals guide the action of NEIES: promote reflection and knowledge generation in higher education in MERCOSUR associated with integration; promote research on the contributions of higher education to the integration of MERCOSUR countries; and propose initiatives and actions that contribute to strengthening the process of formulating public policies and guiding decision-making in higher education in MERCOSUR (Perrotta, 2018).

5. See: http://nemercosur.siu.edu.ar/webnucleo/pag_nucleo_presentacion_revista.html

6. The Programme for the Promotion of the Argentine University (PPUA) announced various calls for the formation of international academic networks. By 2013, it had financed over 500 network projects in the six calls that were held. By 2015, two further calls had been held. Since then, the annual call to networks has been discontinued.

7. Conference proceedings available at: https://www.priu.com.ar/coloquiobalancecres

capacities for educational investment. As a result, the path of development that had been travelled up to that point was interrupted and the perspectives outlined in 2014 were abandoned. Between 2016 and 2018, the process of formulating and managing education policies became more centralised and strongly driven by market logic. **The government that took over in 2019 did not formulate new educational policies. Instead it applied an authoritarian, morally conservative discourse that was supposedly aligned with neoliberal economic principles. With this discourse, it aimed to justify disinvestment in the area and the degradation of public higher education institutions.**

In response to this situation, public higher education institutes are trying to strengthen their coordination to withstand government attacks and maintain their activities. In turn, private higher education institutions are experimenting with new institutional and educational formats that enable them to increase their efficiency and competitiveness. In both sectors, **there is a reduction in resources and tension in the social demand for higher education in terms of potential students and the opportunities for enrolled students to devote time to their studies.** The context is one of increased unemployment and devaluation of salaries in reais. The relative value of university qualifications is decreasing. The Covid-19 pandemic has worsened this situation and contributed to the distancing of student bodies from higher education institutions and the precariousness of labour relations. The digitalisation of teaching has limited the learning conditions and highlighted educational shortfalls. At the same time, the spread of an anti-science discourse associated with the authoritarian conservatism in the presidency of the Republic has eroded the epistemic principle of the legitimacy of public universities. However, the actions of university communities to address the pandemic have reinforced the legitimacy of universities as relevant institutions to address social problems.

The items explored below enable an assessment of recent higher education and present goals designed to advance towards the creation of a higher education project that considers the sustainable development of Brazilian society.

3.2.1 Governance and public service

University action has continued to be a bastion for social environmentalism, the assertion of inequality, the secularisation of life, anti-racism, anti-sexism, and the defence of equity with practices of recognition and redistribution. The constitutional principle of educational autonomy of universities, with relative freedom for teaching and research, is one of the elements that enables the university community to discuss issues such as gender and sexuality, risk behaviours, labour relations, income distribution and environmental balance. These topics are considered taboo by the conservative forces of society. Another factor is the job stability of teachers and researchers as public servants.

One of the limitations that universities and higher education institutions face is the need to be less bureaucratic and more democratic. The university curriculum is conservative in its tradition to train professionals by prioritising contents, without focusing more on moral development based on the public sense of higher education. Even when the governance model is organised around collegial spaces, as in the public sector that generally concentrates power at teaching level, there is little dialogue with the surrounding society. When dialogue exists, it is focused on extension projects. In the private sector, the governance is more similar to business management and there is a predominance of training that only involves teaching activities. In both sectors, experiences of participation and public debate do not match the possibilities and the need to democratise a conservative society. Furthermore, advanced cultural elements and the construction of academic and social capital are not reinforced. Expanding the training opportunities that are offered to students depends on strengthening the university as a leading institution of tertiary education, with assurance of the material conditions required to meet its role of a public space for knowledge generation and the full development of individuals.

3.2.2 Skills and competencies

Higher education courses in Brazil were constructed on the basis of the minimum contents considered necessary to work in a profession. In the 2000s, activities relating to changes in relations in Brazilian society have focused more on anti-racism and anti-sexism in specific disciplines, research and extension activities, study groups, and even talks and conferences. The impacts

on society of structural violence based on class, gender and race have entered the agendas of groups that involve university actors. However, **the link between theoretical discussion and practical action is found almost exclusively in activities that do not form part of the compulsory curriculum.**

The same situation can be found in other forms of intervention in everyday social life, including professional practice. Placements in education are not compulsory in all courses and, although students must complete the workload of complementary activities, these activities do not guarantee the instrumentalisation of training that has a close relation with practice. There is a huge gap between the extracurricular opportunities in institutions focused on teaching, which account for the majority of enrolled students, and those available in research universities. In research universities, there are opportunities such as start-up grants for research, teaching and technological innovation; tutorials; extension projects; student organisations; junior enterprises; cultural activities; and administrative work. Through academic socialisation, these spaces enable the development of soft skills, cultural repertoires, a connection with ethical values and, in some cases, scientific and professional competencies that are part of the social dynamic. One goal of the National Education Plan is the incorporation of extension activities as part of the curriculum of undergraduate courses. This is a challenge that higher education institutions are facing currently. Therefore, to advance in citizenship skills training, the compulsory curriculum would need to increase the inclusion of outreach or extension.

3.2.3 Research and innovation

Universities are central actors in the National Science, Technology and Innovation System. Most Brazilian researchers are university lecturers and students who carry out research activities as part of their job responsibilities or with grants. **In recent decades, their impact on the production sector has gone beyond basic and applied research, and technology parks have been established.** Some universities have established technology development units that are generally associated with training for entrepreneurship and for pedagogical innovation. From the decade of the 2000s, the organisation of specialised higher education institutes that have links with the production sector, thematic areas or regulated professions gained strength. In 2008, the federal government established a federal network for professional, scientific and technological education. Federal institutes were created to coordinate professional education in secondary and higher education courses with applied research. The aim was to promote regional development with technological solutions in multi-campus institutions.

Brazil is one of the countries with closest ties to the open access movement in scientific literature, as shown by the large number of journals that are published without charging subscriptions or publication fees. Some pioneering initiatives were essential to achieve this success. One example is the creation of the Scientific Electronic Library Online (SciELO) programme in 1998 by the São Paulo Research Foundation (Fapesp) in association with the Latin American and Caribbean Center on Health Sciences Information (Birene) of the Pan American Health Organization (PHO), which is associated with the World Health Organization (WHO). In addition, the Brazilian Institute of Information in Science and Technology (IBICT) of the Ministry of Science, Technology and Innovations translated and adapted Open Journal Systems (OJS) software for journal editing, management and publication, developed by the Public Knowledge Project (PKP) in 2003. This institute made available the Electronic System for Journal Publication (SEER), which is widely used in Brazilian institutions and encourages the adoption of international publishing standards for electronic journals.

Based on the open access movement, in 2005 the IBICT launched, with the support of researchers from several Brazilian states, the Manifesto of Open Access to Scientific Information. The Manifesto promotes the registration and dissemination of Brazilian scientific output, in line with the open access to information initiative. Due to this initiative, Brazil now has broad coverage of institutional repositories that provide scientific articles and academic papers in open access. The country is a leader in this area globally. Currently, the main Brazilian universities and research institutes are working to construct platforms to share research data in open access, a concern that is expressed in the National Action Plan for Open Government.

The presence of research ethics committees is increasing in the research area. This has been particularly notable since 2012, with the increased need for collegial assessment of projects that involve humans. The committees in research institutions are coordinated by the National Committee of Ethics in Research (Conep),

an organisation that is associated with the Ministry of Health, in the CEP/Conep System, which also has a database integrated into the Plataforma Brasil. In addition, ethics committees exist on the use of animals in research. They are regulated by the National Council for the Control of Animal Experimentation (Concea), associated with the Ministry of Science, Technology and Innovation. However, training in research ethics is still not very visible in higher education institutes.

3.2.4 Sustainability

By law, environmental issues must be addressed in higher education courses. However, the approach is not uniform and the position of higher education institutes on the environment is ambiguous. Teaching, research and extension activities highlight the problem and call into question actions and initiatives that attack the biomass and exploit natural resources, leading to degradation of the natural environment. However, universities do not tend to have well-established systems for environmental protection in their processes of consumption and waste production. The separation, handling and discarding of waste still do not follow the basic standards required to reduce environmental impact. State or corporate funding of research does not tend to consider as a central factor the principles of environmental management.

In terms of the social sustainability of higher education institutes and their republican legitimacy before society, the topics of access and retention of students are relevant. This is because the reason for the existence of higher education institutions is associated with the relation they form with the new generations in the student body. In Brazilian society, in which most of the population has a low income, free education is still a relevant topic. Although only around 25% of places on undergraduate courses are free, this proportion is crucial to the access of population segments that cannot afford the monthly payments and to avoid a greater increase in the fees charged by the private sector. **Public higher education institutes, in which education is free, have been affected by budget restrictions, including those applied to resources for supporting students, in a situation in which around two-thirds of students come from low-income families.** The composition of the student population has changed, particularly since 2012, with places reserved for students from public schools, and specific racial and income quotas. These criteria have been used to award federal grants in private higher education institutions since 2005.

In addition to problems in financing education, the research that is carried out in the public sector faces sustainability challenges. The pattern of expansion in the previous decade led to the creation of new higher education institutions and the Programme to Support the Restructuring and Expansion Plans of Federal Universities (REUNI). The aim of this plan was to make more efficient use of university resources with an increase in the number of places, above all in courses at night. This increase, which was carried out from the perspective of internalising the offer, still lacks consolidation of the physical infrastructure for teaching and research, the institutional infrastructure to support students, and pedagogical innovation.

Government discourse ordered public higher education institutions to establish their own sources of income. However, public administration regulations limit these initiatives. The Legal Framework for Science, Technology and Innovation introduced greater flexibility in the management of research resources but it is difficult to assess its effects in terms of the promotion of investment in a period of institutional instability and economic crisis. Non-compliance with contracts by governments discourages the search for income-generating projects, as there are no expectations of autonomy in the use of the resources that are gained. Although private research funding can be found in universities, the academic community tends to distrust the consequences of focusing its agenda on the private interests of potential financiers.

3.2.5 ICTs and digitalisation

At system level, platforms and databases have been developed to manage an increasingly broad, complex set of higher education institutes. There are national platforms for regulating undergraduate (e-MEC) and postgraduate degrees (Sucupira), the validation of qualifications from higher education institutions in other countries (Carolina Bori), the management of research resources (Carlos Chagas), academic curricula (Lattes), research ethics assessment (Plataforma Brasil) and continuous training of teachers (Freire, renamed Educación Básica in 2019). These resources are organised by the ministries and their autarkies. Therefore, **there is an ecosystem with digital government resources at national level. Its architecture also influences the information systems developed by higher education institutes to manage the data of a student body that is increasingly numerous, and to promote a set of activities that are increasingly sophisticated.**

Throughout the 2000s, undergraduate courses were developed in distance mode, initially through public university projects supported by government programmes. The Open University of Brazil (UAB) was established as a system in 2006 to coordinate public higher education institutes and face-to-face support centres. Its priority was to offer initial and ongoing training for teachers who worked in basic public education. Thus, it internalised the offering of higher education. In this decade and the following one, the offering of undergraduate distance learning courses by private higher education institutes increased to the extent that some of them changed their focus to this mode of delivery. In 2019, t**he offering of places on undergraduate courses in the private sector was greater for distance than face-to-face courses, and over 35% of enrolments were for this mode. This expansion was not accompanied by an efficient process of supervision, and the processes of evaluation and regulation were insufficient to ensure the quality of the training.** As a result, tertiary level training is becoming more distant from the framework of higher education as a process of socialisation and a broader, deeper cultural experience.

The construction of virtual learning objects in Brazil is evident in initiatives such as the Ministry of Education Platform for Digital Education Resources, which was created in 2015. However, the incorporation of digital elements into everyday teaching in higher education was a challenge in the period of emergency distance teaching during the pandemic. The situation revealed that training teaching staff to use resources is an element of digital inclusion. In addition, students need to learn tools so that they can handle information technologies, particularly students who did not have access to these resources in their educational trajectories and do not use them in other areas of their lives. **It is important to consider that one factor in the gap between students and technology is financial shortage, which is reflected in limited access to equipment, an internet connection and knowledge, and precarious study conditions in the domestic environment.**

3.2.6 International collaboration: strengthen partnerships to achieve common goals

The international relations of Brazilian higher education institutes have increased in the last decade, particularly based on the institution of the Science Without Frontiers programme, managed by CNPq and Capes, which funded a large volume of international mobility programmes for students in the science, technology, engineering and maths (STEM) areas. This programme was followed by the Institutional Internationalisation Programme (PrInt) of Capes, which finances higher education institute projects. **This type of incentive with resources has strengthened the units responsible for international relations at higher education institutes and the formulation of strategic internationalisation plans, even though the organisation of internationalisation work is not highly professionalised.** Internationalisation actions are associated with government initiatives such as the Student Programme Undergraduate and Postgraduate Agreement (PEC-G and PEC-PG) that trains students from developing countries in Brazilian higher education institutes. The movement of people is also supported by the existence of research networks and international associations of institutions, such as the Association of Universities of the Montevideo Group (AUGM) and the Association of the Universities of Latin America and the Caribbean (UDUAL). In addition, some national associations are centred on internationalisation, such as the International Cooperation Group of Brazilian Universities (GCUB) and the Brazilian Association of International Education (FAUBAI). At continental level, the Latin American and Caribbean Meeting Space for Higher Education (ENALCES) emerged as a potential mechanism for convergence between governance practices. **Despite the participation in regional entities, the historical pattern of exchange with northern countries persists. The relationship of Brazilian higher education institutions with institutions in the southern countries is still in its early stages.** This situation is partly related to the instability of the regional initiatives, but also to the agendas of researchers who outline integration initiatives in the absence of institutional processes or coordinated national policies.

During the pandemic, experiences of internationalisation of the curriculum became more common, with digital mobility or through the incorporation of foreign academics' participation. However, there was still a lack of systematisation and organisation. The internationa-

lisation of extension activities continues to be limited, despite the great potential associated with values and practices cultivated in the Latin American region. Further collaboration is restricted by the language barrier, given the Brazilian academic community's low level of Spanish, the language for regional integration, and English, the lingua franca of the global scientific community. Other limitations are the lack of systematic development of professional skills for internationalisation and an institutional culture of bureaucratic rigidity, associated with the lack of autonomy of higher education institutions before the legal system.

3.3 Colombia: a look at democracy and higher education

"Death is not democratic" stated South Korean philosopher Byung-Chul Han (2018) in his analysis of the social process triggered by the Covid-19 pandemic. Han stressed that people's social class and status affects the probability that the pandemic has a catastrophic effect on their lives. The emergence of Covid-19 has revealed the inequalities that cause disproportionate effects on well-identified populations: poor people, those debilitated by informal work or unemployment, and those that belong to an ethnic group.

The value of these positions is that they draw attention to the fact that the crisis that is currently underway is not just a health crisis. The heart-breaking effects on our societies unfurl over existing social and economic conditions. These conditions have been hidden behind palliative discourses of "the fight against poverty", "equal opportunities" and "social mobility". However, the fragility of social policy is clear: after months of the pandemic, Colombia could return to the levels of poverty that were found 20 years ago and it may take 10 years for the country to return to one-digit unemployment rates. The supposed social conquests of what is known as the country of the "middle classes" have vanished, leaving exposed the harsh reality of persisting inequality: according to the National Administrative Department of Statistics (DANE, 2020a), 89% of deaths caused by Covid-19 were concentrated in the most socioeconomic disadvantaged classes of society (social strata 1, 2 and 3).

The field of higher education has not escaped this process. According to the Association of Colombian Universities (ASCUN), in the second semester of 2020, 25% of students dropped out. The pandemic worsened the unjust situation that characterised the country before the emergence of Covid-19: in Colombia only half of young people who should access higher education do so. Of these, only half manage to graduate. I**n other words, the higher education system does not function as an open door to the right to an education, but as a revolving door that ejects half of the people that enter.** Furthermore, only 30% of those that enter university do so through institutions that are recognised as high quality. These conditions should be considered to assess the worrying prediction of ASCUN.

We should add that education in Colombia has never been democratic. Out of every 100 children who enter the first school year in Colombia, only 44 manage to graduate from upper secondary education. Of those, only 22 will enter higher education (8 in high quality universities), and only 11 will complete their studies (5 in the case of those who enter high quality universities). **This means that approximately 93% of students in the country are facing some kind of barrier (exclusion, inequality, insufficient quality) that prevents them from fully exercising their right to an education up to the completion of further studies.** In addition to the shortfalls in preschool education, we should add the structural problems suffered by upper secondary education and, obviously, higher education. Children under five and young people (aged between 14 and 28 years) are the population that is most exposed to violation of the right to education. According to the National Administrative Department of Statistics (2020), 33% of the young population did not study or work in 2020 (for women, this percentage stood at 42%; for men 23%).

The factors of inequality in the access to higher education are clearly identified in Colombia (Mora, 2016):

- In Colombia, the highest educational level and the type of education received by a population segment is strongly correlated with their socioeconomic class. While 89% of people in classes 1 and 2 report a maximum educational level of upper secondary, 62% of people in classes 5 and 6 state that they have reached university level. This is even more problematic if we consider the high degree of social immobility that exists, as the probability that children have the same educational level as their parents is between 70% and 80%. Furthermore, young people who are in the fifth quintile of the population (the richest) have levels of educational coverage that are ten times higher than those in the first quintile (the poorest).
- Although women reported a coverage rate similar to that of men in higher education and although the dropout rates that affect them are lower, disadvantageous gender relations persist within the higher education system (in terms of entry into "traditionally feminine" degrees) and in postgraduate studies. Indeed, women comprise 45% of teacher training graduates and only a third of those who complete a doctoral programme.
- In terms of ethnicity, only 7.4% of indigenous adults attend a higher education institute, while the ratio for Afro-Colombians is one in every five. In contrast, 35% of young people who do not belong to a specific ethnic group attend a higher education programme.
- This situation is worse if we consider that the group of young people who cannot continue their academic training in higher education or enter the job market ("ninis": young people who neither study nor work) is much larger in Afro-descendent or indigenous populations. Indeed, in the national Afro-Colombian population, 30% of youth do not work, look for work or study. The figure for youth in indigenous populations stands at 42%. In contrast, in the population that is self-defined as not belonging to an ethnic group, 23% of youth are not working, looking for work or studying. These figures are also affected by the spatial gaps that separate rural and urban areas. If the analysis focuses only on the rural area, the "nini" indicator rises to 46% for the indigenous population, 42% for Afro-Colombians and 40% for the other youth. Notably, three quarters of the young indigenous population and a fourth of Afro-Colombians live in these areas, compared to a fifth of the remaining population.
- In the population that reports having some kind of permanent disability, only 2.3% have a higher education level, whether it is technical, technological or professional, only 1% have completed their further studies and only 0.1% have taken postgraduate courses.

These are the populations that will suffer the effects of the pandemic in a disproportionate way. In addition, according to the figures of the National Administrative Department of Statistics and of the Economics of Education Laboratory (LEE) of the Pontifical Javeriana University, only 43% of people have access to a mobile or desktop internet connection, only 17% of students in rural colleges have internet and computer access, and 96% of municipalities are not ready to implement online classes.

It is clear that equal access, retention and educational achievement require an enormous budget commitment by the state. This is the only way to guarantee universal access to higher education and to reduce the inequalities in access to information and communication technologies. **However, public universities are underfunded by $18 billion Colombian pesos. Their revenue from enrolment and services has also dropped:** both items fell by 51% in March and 66% in April 2020. This worsened the financial limitations that public universities face and increased the negative effects of underfunding in the areas of coverage, educational quality and student welfare.

All of this has occurred in a context of widespread student demands for the state to cover the cost of enrolment in all public universities in the country ("Matricula Cero", Zero Enrolment). Students from several universities started a hunger strike and organised mass protests to make this demand a reality. As a result of the pressure, part of the national government accepted the demand and announced a "Matrícula Cero" programme for 2020 and 2021. In 2021, 97% of students enrolled in public higher institutes (technical and technological universities and institutes) are expected to benefit; that is, around 695,000 students from socioeconomic classes 1, 2 and 3 (the most vulnerable in society).

In turn, private universities have asked the government for financial support to maintain the employee payroll, loan facilities for institutions and students, postponed payment of interest and repayments, and the definition of certain exemptions from tax payments. In addition, competition has increased – in some cases at the expense of educational quality considerations – to attract new students and maintain the enrolment numbers by defining incentives of reductions in the enrolment fee, promises of discounted enrolment fees in following semesters, payment of enrolment fees in instalments, financing of enrolment fees through the creation of solidarity funds, reductions in registration costs and partial or full grants.

All of this is happening in a context in which higher education institutions are facing an increase in costs associated with improving ICT infrastructure, university welfare, teacher training for the shift to online teaching and the application of biosecurity protocols. These efforts contrast with the weak response of the Colombian state to the pandemic. According to the Economic Commission for Latin America (ECLAC), in

a sample that analysed fiscal commitments to address the socioeconomic impacts of the pandemic, the Colombian state was in 11th position out of 16 countries. Countries such as El Salvador, Brazil, Chile, Peru, Paraguay, Argentina, Panama, Honduras, Guatemala and Bolivia surpassed Colombia in their efforts to channel public expenditure to minimise the social and economic impacts of Coronavirus (Cepal, 2020).

In addition to being weak, the measures adopted by the government do not represent any change in terms of the prevailing funding model. For students, an increase in financial aid to pay the enrolment of poor students has been announced ("Generation E" programme) and ICETEX has offered loans with subsidised interest rates and grace periods. Institutions have been offered a programme to subsidise 40% of the payroll and soft loans from Findeter to cover expenses and improve their equipment to adapt to online education. Does it make sense to resort to financing instruments that have shown their inability to resolve inequalities in the educational sector, and that form part of a model of social policy that cannot respond to the challenges generated by the pandemic?

In the field of higher education, the unwillingness of the Colombian government to reduce the persistent inequality gaps and the lack of bold actions to face the effects of the pandemic illustrate that for the state the lives of many young people are dispensable or less valuable than those of others. Is this not a hidden form of violence against certain sectors of the young population? Is this not a clear demonstration of the government's disinterest in strengthening the Colombian democracy and making it more egalitarian?

These questions led to the emergence of a cycle of protests of great magnitude in April, May and June 2021 in Colombia. The leading figures in these protests are the country's youth. Thousands of young people have taken to the streets to demand their rights, including guaranteeing higher education as a right and a common good. However, state repression has been brutal. Between 28 April and 11 June 2021, a total of 78 murders were recorded in the midst of the social protest (of which 24 can be attributed to public forces). A total of 1,522 people were wounded by the actions of state police. These records correspond mainly to young people (CDLAT, 2021). Human Rights Watch reported 68 murders, 419 missing people, 1,100 injuries to people and 5,500 people arrested by the state forces. In addition, it detected the indiscriminate use of lethal and "less" lethal weapons by state agents (Human Rights Watch, 2021).

Democracy in times of Covid-19 is not only threatened by the implementation of authoritarian devices and extreme surveillance of populations. It is also besieged by our societies' lack of capacity to equally distribute access to the value and power of knowledge. Education provides qualifications, status, knowledge, capacities and values that, if they are distributed unequally, produce and reproduce the relationships of power of some social groups over others. **It is in the division of power that we should assess the distributional impact of education: the construction of true democracies will depend on this distribution.** The Colombian democracy is not only threatened by the predominance of authoritarian ways of managing the health, political and social crises that the country is going through. It is also threatened by the reproduction of inequalities come from the past that are clearly projected on the future in the field of higher education.

3.4 Reconsidering public education in Costa Rica under the current restructuring of the state and in the future

Costa Rica is a Central American country whose socioeconomic and political conditions have deteriorated systematically over the last four decades. In this period, as in the rest of the Latin American and Caribbean countries, structural adjustment policies were implemented. Subsequently, the model of capitalist accumulation with a neoliberal approach was more deeply entrenched.

The financial crisis has been experienced most strongly since 2015. This is because the supposed solutions to the crisis that have been imposed by different governments, in particular the government of Carlos Alvarado Quesada from the Citizens' Action Party who rose to power in 2018, are part of a solution of state reform[8] that attacks public institutions and the working sector.

8. This is what the central government has been doing along with the Legislative Assembly through a series of laws, such as that approved in 2018, called the Law for the Strengthening of Public Finances (No. 9635), whose "Fiscal Rule" systematically reduces the budget of public institutions; the Law to increase legal certainty on strike action and its proceedings (No. 9808), approved in 2020, which criminalises social protest; and the Draft of the Framework Law on Public Employment (File No. 19431) that is still under discussion despite the fact that the Constitutional Court ruled that it had 35 unconstitutionalities (Pomareda, 2021), including violation of university autonomy and disrespect for the separation of the Republic's three branches of power.

This has increased inequality and poverty, especially in the context of the health crisis caused by the Covid-19 pandemic.

This situation is evident in the figures presented by the National Institute of Statistics and Census. In the third semester of 2019, before the pandemic, the labour force participation rate was 61.8%, the employment rate was 54.7%, the unemployment rate was 11.4% and the underemployment rate was 11.6% (Instituto Nacional de Estadísticas y Censos, 2019). In the quarter from May to July 2021, these figures changed significantly, as the labour force participation rate nationally was 59.9% and the employment rate 49.4% (Instituto Nacional de Estadísticas y Censos, 2021), while the national unemployment rate stood at 17.4% and the underemployment rate was 15.5% (Instituto Nacional de Estadísticas y Censos, 2021). In all these items, women were more affected as they had higher rates of unemployment and underemployment.

Costa Rica is a country whose economy is based on trade and services (Instituto Nacional de Estadísticas y Censos, 2021). It was greatly affected by the restriction measures adopted due to the pandemic. However, it was also affected by the lack of protection measures driven by powerful sectors associated with the Costa Rican Federation of Chambers and Associations of Private Enterprise (UCCAEP) and related groups that have considerable lobbying capacity and participation within the Government of the Republic itself. These are the same sectors that during the pandemic promoted and benefited from labour market flexibility that led to suspension of contracts, reduction in the working day and dismissals without any repercussions for companies. They were also behind the increase in taxes for poor and middle class population segments and public institutions, whose funding has been cut. In addition to these measures, salary increments were frozen in the public sector. Proposals were constantly made to impose more taxes on the working sector and exempt or eliminate taxes and social responsibilities of big businesses, reduce working days, increase working hours and close or privatise institutions, without establishing any far-reaching palliative measures for those who are most affected. At the same time, tax avoidance and evasion was facilitated for companies, while serious cases of corruption between private companies and employees of public institutions became known (Núñez, 2021).

In addition, the policies that the government has implemented to address the health crisis have been contradictory in terms of the need to preserve people's life and health. To avoid infections, the government introduced quarantine, physical distancing, hand washing protocols, suspension of activities and reduction in the capacity of premises, among other measures. However, the measures were relaxed depending on the needs for commerce to open and the promotion of tourist activity.

Thus, closure and distancing measures have varied over time and given way to measures that are considered necessary for "economic reopening". First, came the policy of "El martillo y el baile" (the hammer and the dance; Miranda, 2020), which involved commerce opening (the dance) or closing (the hammer) depending on the health situation. After this came "Costa Rica trabaja y se cuida" (Costa Rica works and looks after itself; Chavarría, 2020), which was based on greater opening and individual responsibility to avoid infection with Covid-19. At the same time, the vaccination process has been executed slowly, as the country depends on purchases made from Pfizer and AstraZeneca, which arrive in small quantities every week, and on donations. Many people have lost loved ones, their jobs, their livelihood, their future projects and their physical and mental health, but public policy has not focused on caring for life and protecting people. Protecting people does not seem to be a key topic for the parties that are preparing to start the electoral campaign in 2022, most of which promise to further plunder public funds.

This is the context in which policies of funding cuts in public education are promoted at preschool, primary and secondary level, which are governed by the Ministry of Public Education (MEP), and at higher education level, which is comprised of five public universities whose policies are coordinated by the National Council of Rectors (CONARE).

Basic preschool, primary and secondary public education have been adversely affected by the financial crisis before the pandemic, the difficulties caused by the pandemic and the negative impact of the state's restructuring policies.

At the start of the pandemic, school buildings were closed and education was moved online. However, limited internet coverage, a lack of equipment and inadequate conditions affected around 425,000 students, most of whom live in poverty (Rodríguez, 2021).

One in every four teachers did not have an internet connection (Programa Estado de la Educación, 2021) or training to use digital tools (Programa Estado de la Educación, 2021). Furthermore, 58% of families stated that they were not ready to support the distance education of their school-age members (Programa Estado de la Educación, 2021). Shortfalls in services and physical infrastructure (for example a lack of drinking water) were also faced. A total of 64% of education centres (2,996) do not have suitable infrastructure and health conditions to address the pandemic, and 87,410 education centres were under health orders in 2021, which are attended by approximately 21% of the enrolled population (Programa Estado de la Educación, 2021). In addition, difficulties were noted in access to education for students at education centres in rural areas.

The Ministry of Public Education established a series of measures and alternative platforms for communication between teachers, students and parents, and the delivery of food parcels to around 430,000 students who normally attend school dining halls. All of this was carried out with the support of the education centres' teaching and administrative staff, whose main task was to try to avoid infections and keep students linked to the education system (Programa Estado de la Educación, 2021).

In April 2021, 80% of a total of 1,206,800 students in 5,276 educational institutes and services attended face-to-face classes. Classes were subsequently suspended due to conflicts about careless policies in the face of Covid infections of education staff (Castro, 2021). The academic year was restarted in July 2021. Out of all the education centres, 67% currently work in blended mode and 33% face-to-face (Dirección de Prensa y Relaciones Públicas, Ministerio de Educación Pública, 2021). However, considerable shortfalls have been identified in the processes of public education compared to those of private education, where classes were not suspended (Programa Estado de la Educación, 2021) and students have more resources to adapt to online education. **These factors did not prevent the Ministry of National Planning from proposing cuts of 300 billion colones from the education budget for 2022 (Chacón, 2021). This adds to the application of the "Fiscal Rule"[9], which in itself reduces the current expenditure of public institutions (Molina Manzo et al. 2021).**

In the five public higher education institutes, online classes were also imposed from 12 March 2020. Students and teachers had to adapt their courses to online platforms that had not been used frequently in the academic population, except in the State University of Distance Education (UNED). This caused disruptions, uncertainty and anxiety. The authorities indicated that the academic year should continue, despite the fact that some students and teachers had no internet connection, equipment or suitable spaces for carrying out the processes of distance education. In the University of Costa Rica (UCR), student residences closed abruptly without supporting or monitoring the student body from rural areas who had to return to their places of origin. Furthermore, the amount of grants was cut.

For students who had no equipment or internet connection, universities gradually managed to provide Sim cards and tablets using loans from institutional funds and donations of the teaching staff. Instead of a drop in enrolment, an increase was observed, particularly in UNED and UCR (Programa Estado de la Educación, 2021).

However, the fatigue, stress and psychosocial impact on the student body can be seen and there are mental health alerts in the university communities. As a result, universities must implement mental health measures (Vida UCR, 15 July 2021). However, these measures do not address the complexity of the current situation in terms of the pandemic and an education system tied to banking and focused on productivism and competition that does not generate wellbeing (Arce and Caamaño, 2021). Although the grant programme has been maintained, it is under the threat of cuts due to the implementation of the "Fiscal Rule" (Guevara, 20 April 2021), and systematic reductions in universities' budgets.

In effect, public higher education institutions have been subjected to a series of budget cuts since 2018, which have been justified by the economic crisis. However, these cuts form part of attacks made by political and business sectors, central government, the Legislative Assembly and the traditional media on the public institutional structure and particularly on universities. **On several occasions, the need to eliminate university autonomy and academic freedom has even been proposed (Caamaño, 2020a; 2020b). The purpose of these attacks is to further develop the model of corporate university, whose agenda is dictated by companies and the government.**

Governed by the dictates of international organisations, the government, the National Council of Rectors (CONARE) and members of the academic community, **the universities in Costa Rica have accepted the corporate or university-business model that is presented as the ideal in other parts of the world, to compete on the international knowledge market.** Several mechanisms have been implemented to transform the Latin American model described in the Córdoba Reform. These include "a) commercialisation through assessment mechanisms; b) the structure of privatisation through patents, copyright, innovation and entrepreneurship; c) managerialisation; and d) labour market flexibility" (Caamaño, 2020b, pp. 106-107).

The University of Costa Rica is an institution that has many structural inequalities. It has 65 to 70% of its staff on temporary contracts (León, Kikut and Villalobos, 2020), maintains outsourcing of cleaning services under high levels of job insecurity (Muñoz, 2020), and gender inequalities exist (Mesa, 2018; Chaves, 2021; Córdoba, 2021), despite the humanistic discourse that is still maintained in some sectors.

It is a university that has worked to find the way to save itself from the adverse political context by trying to form partnerships with powerful sectors rather than with those who suffer from the plundering. Faced with the latest flashpoints in the struggle, the institution officially kept a distance in the strike against the Fiscal Plan in 2018 and against the processes for approval of the Framework Law of Public Employment. This reveals the internal contradictions and resistance of a university sector that still sees the link with society as a fundamental factor for universities (Caamaño, 2020c).

In fact, the universities made an economic contribution during the pandemic, as they accepted a budget cut of 48 billion colones to help to resolve the health crisis (Sociedad, 2020). In addition, in the health area, with the opening of vaccination centres, the universities helped with "production of cotton buds, lab coats, protective masks, prototypes of ventilators, protective capsules for intubation, serum from hyperimmunised horse plasma and saliva tests to detect Covid-19" (Programa Estado de la Nación, 2021). They have contributed to education, tourism, business development, psychosocial support in crisis situations, and other areas. However, in the same way that the Costa Rican Social Security Fund (CCSS) – which provides support nationally during the health crisis – has been attacked, it has been suggested that the universities have salaries that are too high and that they do not control their spending. This criticism has been made despite the fact the universities have applied measures to reduce salaries (Córdoba, 2021).

Even with this adverse outlook, the universities do not stop to think of themselves in a way that goes beyond the economistic perspective that is imposed not only from outside but also from within, among powerful sectors associated with international organisations and the government.

3.4.1 Perspectives for the future?

The dominant sectors, led by the guidelines of the OECD, an organisation that Costa Rica joined this year, and the World Bank, force universities to continue along the same path. Efforts are focused on standardisation through assessment, which ends up being a goal in itself. To achieve this, Chile is taken as a model and the Faro and Pisa tests are applied (Programa Estado de la Educación, 2021), despite the difficult situation of the education system in material terms. The dominant sectors propose increasing the commercialisation of universities to obtain funding (Programa Estado de la Educación, 2021), which would eventually eliminate university autonomy, critical thinking and academic freedom. This is the approach of the State Education Programme (2021), the "think tank" financed by CONARE to repeat in each annual report what has already been established by the international organisations mentioned above. Its view is economicist and it does not focus on education as a right but, as proposed by the World Bank, on assessment, standardisation and control (CLADE, 2021).

In the context of the crisis, negotiations with the International Monetary Fund (IMF) and the pre-electoral year, the pressure to reduce the national budget is great. Opportunities to change the policies of dispossession in the short or medium term cannot be seen.

9. The Fiscal Rule is part of the Law on Strengthening Public Finances, approved in 2018. "Articles 5, 9 and 10 of Title IV, entitled Fiscal Responsibility, of the aforementioned Law, establish that increases in budget spending (current or total) shall be limited according to the behaviour of two macroeconomic variables. The first is the average year-on-year nominal GDP growth rate for the last four years prior to the budget formulation for the corresponding year. The second is the ratio of the of Central Government's total debt over the nominal GDP for the financial year prior to the budget formulation" (Ministerio de Hacienda, 2021). A large strike was organised against this law, in which education unions fought until the last moment and were criminalised and, until today, attacked for the suspension of the school year in 2018, as did the State Education Programme (2021) that, despite the difficulties in public education, justified the cuts in its budget.

To counteract this discouraging trend, the proposal made by academic sectors and organisations that still see education as a right should be focused on an in-depth discussion of the model of university and society that has been promoted; a discussion that the university authorities avoid.

This open, democratic discussion should take into account all levels: teachers, students and administrative staff, as the first objective should be to democratise academia. Only in this way can the need to decommercialize and return to public ownership be put forward, so that education is defended as a human right and a common good, rather than considered merchandise.

The aim is to work on the crisis that is being experienced in society and education, and to find forms of management that respect human rights, which include the labour rights of staff who work in education institutions. To achieve this, we can start by attacking the structural inequalities established in the statutes, regulations, procedures and bureaucratic practices.

This process involves casting out the neutral, managerial language of universities today and instead describing the inequalities within and outside higher education institutions. It also entails introducing in strategic plans and academic programmes an alternative model focused on working with society from a plural perspective. Such a model considers local and national needs and connection with the world from a decolonial approach that defends people as feeling and thinking beings.

For this reason, universities cannot declare themselves neutral in the face of government policies, as they have been doing for some time. Instead, they should fight on the side of the social sectors that seek the common good.

To sum up, we return to what has been stated elsewhere:

"A structural change is required, a review of programmes, of academic loads and the employment system, but also a proposal to change the productivist, neoliberal model and the role that universities play in the generation of another model of society that points towards human wellbeing. It is time for us to stop looking the other way and to accept the challenge of generating structural challenges rather than merely embellishing the crisis!" (Arce and Caamaño, 2021).

3.5 Reform in higher education in Mexico: from discussion to action

Overcoming the current levels of social inequality is the main challenge to be able to carry out real education reform in Mexico. Reform is only possible if it can be expressed in a state policy that is alternative, intercultural, associated with the public good, fair and sustainable in the mid to long term.

In some countries of Latin America and the Caribbean, as is now being proposed in Mexico, free higher education and its progressive universalisation is established in legislation and is a constitutional requirement. It is accompanied by measures that are open to the access and retention of school age groups that experience inequality in the exercise of their fundamental rights, through compensatory and social welfare policies (for example, an extensive system of grants or affirmative action programmes focused on the inclusion of sectors that are traditionally marginalised, such as country people, indigenous people and Afro-descendants).

From a comparative perspective and considering the changes that are arising, the efforts that are being made should be focused on defining a new education reform in Mexico, as the new government is progressive and anti-neoliberal. **This government is promoting new laws in the area of higher education, knowledge, science and technology that are centred on achieving greater access and free education, to introduce a new national education reform and obtain the necessary scientific independence.**

However, in this context, the capacity of the higher education system appears to be segmented in a socio-institutional way, in direct relation with the various population segments. Thus, the son or daughter of a worker or a peasant farmer will have some opportunities to access basic education or a technical career. However, they are less likely to be able to enter and stay in higher education. In contrast, the offspring of the upper-middle and upper classes can enter, remain and rise through all the educational levels if this is what they wish, whether it is free or not.

Therefore, in general, **it can be seen that the tendency to commercialise and segment the higher education system** – not its "diversification" as presented in the Anglo-Saxon world and in countries with greater education coverage – **has increased. However, this has not helped to compensate for inequality** and it has not provided the opportunity to reach greater equity in access and retention of highly vulnerable or disadvantaged sectors of the education system, such as indigenous, Afro-descendent, rural and very poor urban populations or women in these sectors.

The above indicates that inequality has prevailed over efforts and policies that have not managed to get to the heart of the issue. In other words, **progress has not been made beyond the mere declaration in favour of free education or affirmative action policies. This is because the implementation of effective mechanisms of substantial improvement in the distribution of income, to foster equity and fight inequality, has not been established as a priority.**

3.5.1 The terms of the debate

The current proposal for educational reform in Mexico (2018–2021) establishes that the state should guarantee the right to all education of a public nature. However, there are differences in how the legislation has been drawn up to achieve a shift from the phase of massification to the phase of universalisation of higher education. In other words, the legislation states that it is compulsory to offer this education level to all those who request it, only on the basis of their merits, but it does not manage to overcome the inequality that exists in terms of their socioeconomic or geographic conditions, their ethnicity, race or gender.

Therefore, a distinction should be made in the definitions of state policy regarding two concepts: the compulsory nature of higher education and its free status.

In international law, the state is obliged to make higher education accessible, above all when the desired universal coverage has been reached in basic and secondary education. This comes under a concept that emphasises a progressive transition, in which free education appears as the main factor for this gradual process to reach a situation of universalisation.

In Mexico, this sequence of scaling up has often been halted or cut back, with cycles of contraction and highs and lows in public resources and in investment in higher education. Dramatic changes in the orientation of education policy in the last three governments of PAN and PRI (Vicente Fox, Felipe Calderón and Enrique Peña Nieto) also meant that agreements on responsibility to guarantee a fundamental right have been violated or limited.

Considering the situation, **actions undertaken during these governments focused on expanding coverage, commercialisation and an assessment of the system's quality but not on retention. They were even less focused on guaranteeing satisfactory graduation** for the progressive entry of higher university graduates into the various professional job markets; the promotion of a new "education model" (as proposed unsuccessfully during the six-year term of Peña Nieto) to generate fundamental changes for the continuous cognitive progress of students; the conditions for constructing an alternative curriculum; and even less the production and transfer of new science and technology knowledge.

Rather, what was a constant was a series of programmes that were not very effective over time and did not manage to expand the social capacities of comprehensive learning. Neither did they manage to have a positive impact on economic development rates, which would be expected to be generated by an improvement in education systems and knowledge worldwide.

Therefore, based on the experience of the past, the terms of the debate on universalisation, the coordination of a higher education system and its free status – which are the main areas covered in the current government's higher education reform – should shift from discourse to action. This could be achieved through mid- to long-term action programmes in the midst of the current general uncertainty (that has been aggravated by the Covid-19 pandemic). To add another aspect of the current circumstances, in the context of a lack of organisation in the definitions of state policies, the current six-year term has been marked by the frequency and recurrence of social conflicts in the education system, above all led by students and women (when a common trend in the past was the concentration of conflicts among teachers). All of these conflicts have been related in some way to the topic of free education, access or violence.

In the exact opposite position, until the shift from words to action occurs, what has been imposed is the idea that education is not and should not be free. The argument is that what is offered is a service, albeit public, of individual benefit. Therefore, a logic has been upheld that continuously grows, spreads and is reproduced, with the argument that free education favours those who are already favoured or those who are in a position to pay for their education. In this argument, it is considered that free education gives more guarantees to the

richer classes than to the more disadvantaged, or the rights are violated.

In international legislation it is clearly established that the state is obliged to guarantee free higher education. However, the willingness of institutions and the main academic actors alone, the lean economic conditions and profound inequality in which we live (which is a central topic in the Sustainable Development Goals), the conflicts, rampant violence, increasing migration and the inequity in which education systems move represent enormous challenges but above all tremendous difficulties to achieve these goals as established for 2030.

This has led to a very interesting agenda that covers topics including increasing access to more young people and adults and constructing a knowledge society that has scientific independence. Given the close relationship between knowledge output, new paradigms of learning and research, and the interaction of people from different cultural backgrounds, universities' social responsibility to the public in general is a crucial part of any future agenda.

3.5.2 Higher education reform: redesigning the system

In this section, we evaluate the legislative proposals that were presented and approved by the Chambers of Deputies and Senators in 2019, during the first year of the government of the presidency of López Obrador. We look at their main scope and content and their fundamental principles and objectives.

The starting point for the proposal to carry out a new education reform was the repeal of the first "structural" reform of the previous six-year term, the educational reform. The new reform was proposed to overcome what was seen as a failed attempt (another of many) to overcome decades of backwardness; to introduce comprehensive change coordinated from within; and to create a true, coordinated, inclusive education system with gender equality and excellence in the current six-year term. The terms of what the reform would achieve in higher education are presented, with their objectives, breaking and turning points, and how they would be implemented over time in the short, medium and long term, based on the approval of national legislation on this subject (the Third Article of the Constitution). Likewise, a series of recommendations of a programmatic nature are presented, which the author considers could be included in the framework to redesign the higher education system in Mexico.

No previous reform has managed to have a real impact on the purposes, principles and processes of the educational task, particularly in reference to what is learnt, the methods, languages, content, curriculum, teaching and administrative practices, improvement of infrastructure and consistency of school pathways from preschool to postgraduate level. Consequently, what is now faced is an enormous task because what could have been reverted at some point was not done and aspects that have worsened are the greatest challenges facing the proposal to carry out real educational reform, as is the aim in the current six-year term of the president Andrés Manuel López Obrador.

As an example, between 1990 and 2016, **the number of public higher education institutions in Mexico increased by 114%, but that of private institutions rose by 450%. This makes Mexico the country with the greatest expansion in the private sector worldwide.** It does not have the highest concentration ratio of private provision, as this is found in countries such as Brazil, Colombia, Chile or other countries of Latin America. However, it is the country that has had the fastest growth in the private sector in just a few decades. In addition, a large number of these private schools do not have the formal registration that is essential to teach higher education courses, let alone to do so with the quality that is required. Only 3,000 programmes at this level are registered in the Mexican Secretariat of Public Education (SEP), while 20,000 are not registered and operate fraudulently or irregularly.

The outlook worsens if we relate these conditions of inequality with the various segments of the labour market, with an impact on those who only have upper-secondary or degree level education (completed or not). The relationship between graduation and entry into the formal labour market is better for those who have social relations in the highest income segments, with greater cultural capital, who live in the more exclusive urban areas and have a postgraduate qualification.

México is one of the OECD countries with the lowest spending per student on higher education. This has a negative impact on retention and graduation. Around 50% of those who enter this education level complete 100% of the requirements that are included in the curriculum on their area; the remaining students do not finish their degree.

In terms of the organisation of what is learnt and taught, in general, the structure of public and private institutions is managed through professional pathways and disciplines. Cross-disciplinary or interdisciplinary academic innovations are scarce, as is the task of research, which is concentrated in just a few universities that are mainly public, national, federal or state institutions. **The relationship between research and innovation in the context of highly complex application is also poor and very limited.**

Currently, the number of people served by higher education stands at 4.3 million students (66.5% in public institutes and 33.5% in private), which corresponds to 39% of the age group at this level.

Public universities have the largest number of research institutions. These benefit from the support provided by the National System of Researchers (SNI), which is comprised of over 30,000 academics (21.5 people per 100,000 inhabitants). This group expanded from 5,700 people in 1990 to 28,000 in 2018. Research grantholders number 450. By research area, only 6,800 of the 30,000 academics work in the area of social sciences and humanities.

The science and technology capabilities by states in the Republic are very uneven. Fifty per cent of the investment in National Council of Science and Technology (CONACYT) programmes (for example: national laboratories, international mobility grants, grants for national postgraduate studies, SRI researchers, programmes recognised in the National Register of Quality Postgraduate Programmes, CONACYT centres or research incentive programmes) is concentrated in just 5 or 6 states.

The topic of financing was and continues to be one of the areas of greatest conflict in the relation between universities and the state. Public subsidies, which are concentrated in universities that operate independently or depend strongly on state government resources, have experienced decades of fluctuations in the amount they are allocated, as defined by the different governments. The 1% of GDP that was agreed as necessary by the Chamber of Deputies years ago has never been reached. In some cases, the operating conditions, year on year, have reached such an alarming level that at least 12 of these universities, particularly state institutes, are in a state of financial and operational crisis that has led to paralysis and frequent problems.

However, the main problems of social quality and relevance, inclusion and equity, and reversal of the conditions of inequality in access to the system persist and have been deepened, both at the level of public responsibility and that of private responsibility, which has achieved considerable dynamism and growth.

3.5.3 In search of what is lost: the core areas of the higher education reform of López Obrador's government

The terms presented in the education reform laws, in the amendment of the Third Article of the Constitution and in the General Law of Higher Education (see the version of October 2019), are supported by principles and objectives in a vision and a public policy to reverse the conditions of backwardness in the country, as mentioned above. The aim is to support a great transformation in the national education system.

In May 2019, the constitutional reform of the Third Article was approved. This revoked the previous attempt at a neoliberal reform that never materialised, for the good of the country. In this new formulation, the compulsory nature of higher education is established as well as the gradual transition to free education throughout the entire system (as already established in some countries of Latin America). It is proposed that the higher level of education should be governed under the terms set out in Parts VII and X of this constitutional article.

Part VII indicates: "Universities and all other higher education institutions upon which the law has conferred autonomy, shall have the powers and responsibility to govern themselves; they shall carry out their purposes of educating, doing research and promoting culture in accordance with the principles established in this article, respecting freedom to teach and do research and freedom to analyse and discuss ideas; they shall determine their curricula and programmes; they shall establish the terms for the engagement, promotion and tenure of their academic personnel; and they shall manage their assets [...] labour relationships both with academic personnel and with management personnel shall be governed by Section A of Article 123 of this Constitution, under the terms and in accordance with the prescriptions established by the Federal Labour Law, subject to the nature pertaining to a specially regulated work, in a manner consistent with the auto-

nomy, freedom of teaching and research and the goals of the institutions referred herein."

Part X of the Third Article of the Constitution states: "The compulsory nature of higher education is the responsibility of the state. Federal and local authorities shall establish policies to promote inclusion, retention and continuity, under the terms indicated in the law. In addition, they shall provide means of access to this type of education for people who meet the requirements stipulated by the public institutions."

In addition, for the higher level, various provisional articles are included in which it is established: "The state legislatures... shall have a period of one year to harmonise the legal framework on this subject, in accordance with this decree." The fourteenth provisional article states: "To comply with the principle of compulsory higher education, the necessary resources shall be included in the federal budget and the budgets of federative entities and municipalities, under the terms of Parts VIII and X of the Third Article of this Constitution; in addition, a special federal fund shall be established to guarantee in the long term the resources required to ensure the compulsory nature of the services referred to in this article, and the long-term nature of the infrastructure."

With this education reform initiative, the investment that López Obrador's government should reach is 1% of GDP by the end of his six-year term. In addition, coverage should increase from the current 39% of the corresponding age group to 55% of the population in this group, so that the gross enrolment ratio approaches a level of "universalisation".

To reach these goals, as and other more specific ones, during October 2019, the General Law of Higher Education (LGES) began to be discussed. This would replace the Law on Coordination of Higher Education of 1978.

Together with the approval of a new Third Article to revoke the article referred to above from Peña Nieto's six-year term, and its secondary laws, LGES is positioned as one of the most advanced regulatory and programmatic initiatives in the history of Mexico, the region, and among many similar initiatives worldwide. This initiative aims to reflect the strategy of a historical Fourth Transformation in the country. Some of its terms are highlighted below.

- It supports the principles discussed by most of the universities of Latin American and the Caribbean at the Regional Conferences organised by UNESCO (CRES-2008 in Cartagena de Indias, Colombia and CRES-2018 in Córdoba, Argentina), which are unique in the world due to high participation and the agreements and contents that are addressed.[10] The principles are that higher education is a public and social good and a duty of the state; and independent self-governance of universities and the integrity of a coordinated, regulated system are guaranteed. In addition, it supports the conviction that education is not merchandise, so private institutions should operate on a non-profit basis.
- The state is the guarantor of the gradual transition to inclusion for everyone at this level of the education system and of its free status. This is achieved with full respect for human rights, gender equality, training that guarantees lifelong learning, the coordination of sciences and technologies with humanities, sports, culture and the arts, the dialogue of knowledge and social responsibility in the performance of academic activity.
- It guarantees an appropriate and increasing budget, to reach 1% of GDP for the sector and for research and scientific-technological and humanistic innovation, with a long-term outlook.
- It is committed to coordinating the functions of universities with the development and wellbeing of local, regional and national communities, through continuous improvement in the social quality of higher education, its expansion and diversification; the promotion of affirmative programmes for inclusion, retention and graduation; and seeking the best and most stable entry of graduates into the job market. In addition, resources focused on continuous improvement of the infrastructure and formation of human talent are defined.
- It guarantees a gradual transition in the universalisation of higher education, its free status, the obligatory nature of access, and retention.
- From the perspective of aims and purposes, it is established that all the functions and tasks should be focused on horizontal coordination through a higher education and research system (this concept of "coordination" is the term that appears most throughout the law but it is also the concept that is most complicated strategically, as shown above).

10. See: Didriksson, Axel (2019). Balance la CRES-2018. OEI, Madrid.

- It defines the types and levels of higher education institutions and refers in detail to the subsystem of Normal Schools and Institutes of Teacher Training, given the relevance of what is referred to as the professionalisation of teaching and its projection over time.

In August 2020, a new version of LGES was presented. This version supports the original spirit of the new higher education reform and its comprehensive, progressive nature. However, it also presents some changes that should be highlighted. For example, the importance of the coordination and even integration of a higher education system is lessened. However, the law still highlights the creation of a National Council that would have enough authority and legitimacy to implement strategies and mechanisms of coordination, cooperation and integration at national level.

Notably, the concept of "public good" has also been eliminated and the notion that education is not merchandise, which was presented in the previous version. This distances the new version from the principles and agreements that had been reached at the large regional meetings of UNESCO, described above. The change represents a step back from what the universities of Latin America and the Caribbean have achieved and constructed in a very consistent way, which gives the region identity and a stance compared to the situation in other parts of the world, where commercialisation and academic capitalism are being imposed as the predominant models.

Similarly, and also recently, the Education Sectoral Programme 2020–2024 was published in the Official Federal Gazette (6 July 2020). This programme is aligned with the National Development Plan 2019–2024, in which six priorities are established under the slogan of providing "education for everyone, with nobody left behind".

The conclusive analysis characterising the existing educational backwardness is noteworthy. It describes: "corruption in the education system [...] fictitious schools, false diplomas, a lack of school manuals, discretionary granting of awards, sale of places, irregularities in public spending and tailor-made tenders."

The LGES also **highlights the levels of regional, socioeconomic and cultural inequalities, and describes negative indicators of quality and efficacy throughout the education system. This is demonstrated by a population that is poorly qualified and the gap between what is learnt and the type of work that large segments of the population carry out.** It is considered that an education supported by the aforementioned principles will drive social transformations within the school and the community, so that "learning and knowledge will become the cornerstone of prosperity and wellbeing in Mexico".

Regarding education level, an increase from the 42.7% gross enrolment ratio in 2020 to 50% in 2024 is planned. This would mean that the population of enrolled students would reach 5.5 million. The goal is to reach universalisation in 2040 with a 65% gross enrolment ratio (6.7 million students).

However, in comparative terms, in Mexico (and perhaps in other parts of the world) there is no recent experience of an education reform that has been implemented purely by issuing, discussion and approving a law on higher and university education, regardless of how advanced and focused the law may be. The most difficult task comes when the laws, regulations and programmes have been approved and when there is clarity in how to introduce a transformation strategy into the system of knowledge generation, teaching, culture, science and technology.

The General Law of Higher Education (April 2021) was approved in the context of a public policy with high acceptance and legitimacy, as found in Mexico. However, **to be able to show that the relation between what is proposed and what is put into practice can be shaped** by the general frameworks that have been defined and with a strategic and programmatic vision that has a broad scope and high ambitions, **a change strategy is required based on the broadest principles and paradigms of modern education. Programmes are also needed that are feasible, operational and have an impact in the short- and mid-term.** The plan for the future is established; now the political will and necessary action is required to achieve it.

To create a coordinated system of higher education, with a defined operating structure at local, state and national level and objectives that draw on experiences that could be useful as comparative references, the great debate that has arisen on public education policy, particularly at the level on which this article is based, must overcome decades of persistent failures. It must overcome institutions' lack of action in response to their precarious conditions, their constant internal conflicts, a lack of financial resources and a lack of leadership that goes beyond the position of the

rector or the officials on duty. It must support the aforementioned principles and manage to create a short, mid- and long-term strategy, with enough resources to implement this. Initiatives should be coordinated in the areas of teaching, learning, the organisation and management of knowledge, curricular structures and the modern way to do science. True national coordination should be developed and the main institutions should take initiative to adopt tasks of transformation. This would result in the country finally being able to depend on an interinstitutional framework of higher education, research, culture and science that promotes a society in which knowledge is a real source of shared, inclusive, collaborative, intercultural and dynamic development, to reach a new phase of wellbeing, with no violence and the opportunity for all young people and adults to train as citizens with extensive culture and civility.

Gradual transition is a predominant concept in the definition of the new state policy during the current regime. However, this is very different, as this article aims to show, from guaranteeing the full application of human rights in higher education systems. This is particularly true if we critically assess the advances made from the perspective of mobility and free education, in terms of integration or interinstitutional and horizontal coordination at national level.

Therefore, the main challenge is to enable universities to make their voices heard at national level, so that they can promote initiatives centred on combating financial and social inequality. The focus should be not only access to all education levels, but also retention, achievement of a suitable and relevant profile so that learning capabilities can be developed throughout life, and the guarantee of a decent job for the university's professionals. In addition, universities should present alternatives from within to promote far-reaching changes in their curricula, in the organisation of their cognitive processes, in the management of modern knowledge, and in research associated with scientific independence and social innovation. In this way, the topic of inequality becomes a focal point of institutions' contribution in favour of affirmative inclusion policies and the elimination of the great differences that have taken root alarmingly in Mexico, which continue to be a blot that calls into question current universities, on the basis of the principles and postulates that they hold most dear.

In general terms, in the evaluation of this reform initiative, it should be considered that the country continues to have a disjointed, unstructured system that is diverse but not complementary, autonomous but not cooperative, increasingly complex but not for this reason more active or able to achieve the development of a knowledge society that is sustainable and provides wellbeing for everyone.

The definition of a public policy for the future should consider the minimum requirements of a socio-political, paradigmatic construct (on the organisation and management of new knowledge and learning). If not, universities will find themselves with a contradiction because all references will be to the present instead of what they want to obtain within a future time frame.

The starting point should be to uphold, as a principle, education as a public and social good rather than education that can be commercialised. This will stop education from becoming a mere service or merchandise, and schools a place for profit. For the next generations, deciding to maintain and reproduce a "blended" system (public and for profit) such as that which exists now, where the guarantee of "quality" education is subject to the collection of fees or payments made by families or students, would represent a total setback.

General conclusions of the chapter

Unlike the situation in other areas of the planet, the universities of Latin America and the Caribbean have constructed their unique past and present on the basis of full institutional autonomy and collegial, participative governance. The predominant model, with considerable differences between countries, is that of public higher education. They are one of the few social institutions that have repeatedly adopted a critical stance or mobilised (particularly their main actors: students and teachers) against brutality, injustice and the authoritarian excesses of governments or the rich and powerful, whether they are local, national or international. However, they have also mobilised to defend the public good, freedom and equality, human rights and even their own existence.

In recent decades, universities have faced the veiled and often blatant violation of their autonomy through external assessment and accreditation bodies and the imposition of indicators that lead them to compete with each other, to obtain the scraps of extra resources labelled as programmes of "quality and excellence". They have also had to face the trend of growing privatisation up to now, and above all commercialisation, which ensured over time the reproduction of class and elite interests that do not represent the interests of the majority.

This information is fundamental, not to say extraordinary, given that it refers to the region that has the highest rate of private sector involvement in education in the world, even though it is in the part of the planet with the greatest inequality and inequity.

Despite everything, the public university continues to have the highest participation of cohorts of social demand for admission; a monopoly on knowledge generation and scientific and technological development; and a monopoly on innovation in course offering at curricular level and in the graduate profile. It maintains its position as an institution that leads in all fields of culture dissemination. As if this were not enough, it also leads processes of integration and internationalisation through its contributions of papers in scientific journals, literature, and the safeguarding of the historical and natural heritage of each country, as well as in many other areas. In contrast, the private higher education institutions hardly manage to organise degrees that saturate the already saturated market of the liberal professions and barely make a contribution, apart from some exceptions (no more than ten higher education institutes in the region), to knowledge in the country or the world.

In the last two decades, the public university in the region has promoted the main structural changes in its platforms for coordination in networks and associations, in its processes of regionalisation and integration, in its curricula and in the direction of its research and scientific and technological innovation. It has promoted the best of its activity in the field of knowledge generation, despite the evident backwardness compared to leading global indicators.

The presentation of an alternative is based on a context of urgent need, as there is not much time for governments and the main associated actors and sectors to implement this. The costs of ignorance, falling behind in technology and science, backwardness and social inequity shall soon be translated into risk conditions and a true social and economic catastrophe. Therefore, this is a task that must be assumed with responsibility and urgency by the current generation. The next generation will have other problems.

This raises the possibility of constructing a scenario of a new university reform that points to greater horizontal cooperation between institutions and sectors, organised into networks and community spaces, and working in collaboration, without losing institutional identity.

This situation of university transformation, which seeks to promote an alternative model of university, characterised as an institute for the production and transfer of the social value of knowledge and the relevance of academic tasks, is supported by the organisation of academic structures and processes into networks. It is also maintained by horizontal cooperation that prioritises joint (or interinstitutional projects) projects, greater job mobility of academic staff and students, the homologation of courses and qualifications, joint ownership of resources, and a supportive social educational focus. Educational values are shared and are focused on changing the content of knowledge and disciplines, the creation of new social skills and capabilities that seek to relate national or regional priorities with work in new areas of knowledge, and innovation that seeks to diversify risk. This scenario is sustained by greater participation of the communities and increased diversification in how resources are obtained.

This reflects the idea of an innovative university with social relevance and impact. The aim is to envisage the possibility of an active, dynamic social institution, based on the training of active, productive, innovative employees. A knowledge institution that has a high level of commitment and responsibility to social change, democracy, peace and sustainable development. This is a university where the social quality of the value of the knowledge that it generates and transfers is presented as an organisational principle, as the key to its changes, focused on the nature of its educational processes and on the profile of an institution that responds to the challenges of democratic transition and development with wellbeing.

There are two reasons for analysing the joint responsibility of the university in the above scenario. The first is to demonstrate that we can revert a situation such

as that experienced now, where backwardness and the lack of active participation of public universities, as central actors in a process of change, is limited. An alternative can be proposed that seeks in a clear, committed way for knowledge and innovation to be considered as a public good and as strategic instruments in the fight against poverty and inequality, to overcome the structural backwardness of the social debt in education. **The second is to promote the democratisation and greater participation of civil society, based on state policies that are of great benefit to the population.**

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Universities and the future: a Southern perspective

Freddy Álvarez

Abstract

This paper addresses the future of universities from an epistemological standpoint rooted in the Global South. To that end, the text is organised in four sections that seek to: 1) describe the transition from a monocultural, western university to an intercultural one; 2) lay out the need to create a learning university that can put forward a strong alternative vision to the interference of technology multinationals in education; 3) analyse the importance of university for the good life, and 4) emphasise the role of the university in a turbulent world.

Today's universities are undergoing a growing process of commodification. Education has become yet another fetish of capitalist speculation and an object surrendered to the private and infotechnological interests of neoliberalism, which is having a profound impact on its quality and on the equality and equity it is expected to promote. This is perhaps the most logical explanation as to why a**ccess has become one of the biggest challenges for policies in the South. However, making universities free is pointless if they remain bound to the culture of merit that reproduces elitism,** now academic in nature; to the neoliberalism of entrepreneurship to justify the destruction of work; to the precariousness of the majority while an internal caste has become the new bourgeoisie; and to the bureaucratisation that stifles the scant research spirit.

The university of today cannot safeguard against a future that appears to have collapsed. The university of entrepreneurship, justified by a capitalism in crisis, no longer makes any sense against a backdrop of increasing and intensifying precariousness and misery. We have traditionally accepted that the past is fixed, the present is an elusive flow and the future remains undecided. We have often believed that the future is guaranteed by the present, and that simply improving the 'now' makes the 'later' more promising. Many of us have heard the phrase 'you are the future' repeated ad nauseam to students, as if the transition from one moment to another was a straight line and the future was always free for us to inhabit. Neither the former nor the latter is true.

The truth is that the present is not a mimetic reproduction of the past and the future does not depend solely on the foundations we lay today. As pointed out by historians, there are breaks and continuities. Many situations, stories, tales and traditions take place along the dominant timeline, while others emerge from elsewhere in an effort to break with tradition and routine, to turn things around and take them somewhere radically different.

We belong to a time that is not the same as yesterday and whose temporality is being condensed into unprecedented acceleration, as pointed out by Eric Sadin in *La société de l'anticipation* (2020); thus, we are forced to reinvent other temporalities, new spaces and routines based on the importance of *living with and in favour of the defence of common values,* rather than within the parameters imposed by the digital transformation or entropic economic models. Heading towards the unknown, towards something we are unable to think about or even imagine, but that exists as a possibility and needs to be turned into a probability through strength, is perhaps the greatest challenge to reclaiming the future of the emancipatory university.

Uncertainty about the future of the world university is based on data delivered by present-day science, and it would seem that there is no future for anyone. Time is running out for a revolution, utopias are not possible, nature-dependent development is a dystopia and hope is a message without empirical basis, at a time when enjoyment is not complementary but instead offers a break from *the world of life,* and individualisation is submerged in *obsessive individualism* due to self-aggrandisement by *the technologies at hand.* These have taken control of our innermost being, while the freedom of libertarians is gaining increasing ground in the disastrous, irresponsible policies of the right, which is shifting towards the far right, and part of the left, which is shifting towards the right, as pointed out by Jacques Rancière (1995). The question of the future, therefore,

relates to something we are searching for in advance, because it has been anticipated as a nightmare by the capitalism of the digital transformation or because the future being left by neoliberalism has been reduced to the urgency of survival and death.

Against this backdrop, I will try to present four challenges faced by higher education in the South, at a time when conflicts are increasing, the atmosphere is tense and avarice is sharpening its teeth.

1. From the Western, monocultural university to an intercultural university that brings us into contact with other worlds and new realities.

The world university we are familiar with has its roots in the West and represents the vision of the Western world. Therefore, *the coloniality of power* referred to by thinker Anibal Quijano (2000) is also *the coloniality of knowledge* studied by Walter Mignolo (2000). Power and knowledge go hand in hand, as pointed out by Michel Foucault (2007). The power that dominated invasions and wars now dominates through knowledge and wisdom; thus, such an assertion constitutes grounds for questioning the university. The new twist lies in the new domination created through *libertarian discourses* that break with the State, while the dissonance between capitalism and democracy continues to intensify. Today there is no need to create the servility of the slave obeying the master referred to by Kojève in the master-slave dialectic (1971); merely providing freedom gives rise to crowds of individuals acting like idiots and slaves to themselves, as Byung-Chul Han (2018) quite rightly points out.

Boaventura de Sousa Santos (2021) rather brilliantly refers to the colonial origins of the university and, above all, to the way all of science is set within a specific culture; therefore, *the universality of the university* is a failure for imposing one science and, behind it, a world that scorns the worlds of the colonised. Later, the university pursued the servile acceptance of knowledge that uprooted students who did not belong to the Global North, while they were dazzled by the ideas of the Enlightenment.

Everything that emerges from domination and colonialism contains a contradiction between forming part of the identity of our peoples and also forming part of the object of our criticism. In other words, criticism of foreign domination falls silent when it comes to what we are and what we have become. This contradiction comes face to face with essentialism because we do not exist by belonging to a place or biological origin. We are not only what we are supposed to be; we are also what we want to be. Thus, it is not necessary to move towards a university that casts off part of its own constitution and history, and nor do we need to abandon everything, as if it were all bad. We can turn this contradiction into a fertile paradox; perhaps this represents a good way to move towards an intercultural university.

There are three possible paths to an intercultural university, the first of which is to recognise that there is not one world but several worlds, which are diverse and created based on other approaches belonging to worlds not recognised by Occidentalism. Therefore, the intercultural university proposes a dialogue between worlds and, to achieve this, reveals the world in which teaching and research models are set, the place that gives rise to science and knowledge and their relationship with nature, community, life, happiness, etc.

The second path is the dialogue between these worlds. Interculturality is not isolationism, but nor is it necessary to move towards blind differentiation. As Morin (1998) says, there is no neutral epistemic point in interculturality; however, we would propose three points for dialogue: the rights of nature, definition and defence of common values and future lives in turbulent and confusing times.

The third path is to move towards intercultural science; to that end, the transdisciplinarity of Nicolescu (2002) and the complexity of Morin (1998) have built new bridges. Criticising the Cartesian method and constructing another method, rather than merely thinking about designing new models, have proved crucial. Transdisciplinarity with *the law of the included middle* has allowed us to discover new realities within the same reality and outside of it. However, the most important challenge lies in designing science based on different worlds, antagonistic realities and contradictory models.

2. From the university of teaching to the university of learning with an alternative, firm vision in the face of the intoxication caused by technology multinationals

We university professors still form part of the medieval tradition of the chair. We seek legitimacy in it through the supposed knowledge we must transmit to the younger generations. Each of us, in our specialisation, forms a whole that is less than the sum of the parts. The method is the same as that of the medieval Catholic church: each one possesses an unquestionable truth. We are forced to convey the supposed truth from a 'pulpit' to the students (the congregation), who are not allowed to question it.

The notion of disciplinary fields is not possible in the traditional university. We do what we have always done, we say the same things and even tell the same jokes, as if the world had not changed or science had stood still for years. Similarly, each discipline reproduces its own beliefs about learning. Professors have nothing to learn from pedagogy; it is child's play, they think. Students learn because they listen to us, as if learning were the intersection between the professor's voice and the student's ear, but we do not realise that there is a destructive contradiction in the notion that obedience is required to free oneself through knowledge.

Despite the static culture of the university, which has settled comfortably into teaching territory, learning to learn plays a bigger role than expected. At least we now know that teaching is not the same as learning, and that learning does not imply giving up teaching. However, the act of learning to learn can say everything and, at the same time, say nothing.

Corporations like Google and Microsoft stand most to benefit from *the learning to learn* trend that represents the new pandemic in education, i.e. *extreme digitalisation*, which confuses the use of technologies with learning. Due to the inherent interest in digital capitalism, the effects are unimportant because they are presented as mere *collateral damage*.

There is nothing more harmful to education than falling into Manichean positions that seek romantic adhesion or adhesion based on the demonisation of technologies. Human beings have always needed technology, and not just computers, but also shoes, clothes, cutlery and so on. Plato (2020) referred to techne as a *pharmakon* in two senses: it can cure us but also poison us. However, we are at a point in time when we need to take more critical positions as educators. It is not enough to merely point out that we have made progress in terms of digitalisation and coverage, a vital objective according to most research on education in times of pandemic (IESALC/UNESCO, 2021; OECD, 2021). Use or non-use is a false dichotomy. We need an educational and intercultural dialogue with technologies. Writing, thinking and thinking with the body are concerns at odds with technologies, which give rise to depression, distress, acceleration, confusion between knowledge and information, truth and post-truth.

The tsars of global digital capitalism are so concerned about money that they only want to sell devices through the propaganda of disruption and by pigeonholing innovation into technology. Capitalism cannot progress without creating addiction. For example, we depend on the internet and can no longer live without it. The same happened with cars, just as people were convinced that they could not live without the notion of the 19th-century state. We depend on many unnecessary things, and perhaps it is time to revisit our lifestyle and go back to basics to curb the predatory capitalism that once destroyed nature and is now taking control of our privacy.

3. From the university of ideas to live well to the university for good living

The university of the Middle Ages was appealing because of its ideas. Listening to Peter Abelard in Paris was a unique experience because he introduced the possibility of understanding the world in a different way, of understanding why we lived and thought that way. The invention of the university gave rise to a place that had previously been the exclusive domain of monks and God-related matters, so nonbelievers, sinners and worldlings began to grasp notions unrelated to the immortality of God and the gender of angels.

Scientific innovation in the modern world took us to another level. To escape the faith that hindered knowledge, we needed not only reason, but a method. That is why humanity created science, as it was the most reliable way of comprehending what was real. At the time, science was not aware of its colonial limits because of its one-sided political vision. The creation of the capitalist system in the English school of economic thought emerged as a new way of understanding the economy and its relationship with the world; another way of understanding and living. This system appropriated science and, consequently, the university. It was necessary to master nature as part of anthropocentrism and appropriate all non-human species in the environment.

The apotheotic vision of the world and capitalism spread to every corner of the planet, and capitalists' greatest achievement was that everyone wanted to be like them, think like them, live like them and dream like them. Within this endeavour, some rather worrying notions of life began to spread. Education of the individual came to the fore, being free was only possible in a Western, capitalist world, living was a matter of economic sufficiency, and organising oneself politically was a matter of European intelligence. Universality belonged to them and everything outside resided in error and/or ignorance. We shifted from the dogma of faith to the dogma of Western knowledge.

It was necessary *to live well* and, to achieve that, it was crucial to have money for yesterday's consumption and today's connection. The university of modern science was aligned with the notion of *living well* because it was based on the idea that science was neutral and autonomous and, at the same time, it was called upon to intervene in nature.

The university of the future may have to consider a science for good living that does not involve abandoning science but instead requires models that benefit Life, with a capital L (Acosta & Martínez, 2009). Today, more than ever, we need a university linked to ideas, to life, especially the lives of migrants and lives at risk from climate change and the enormous inequality engulfing us.

Good living in education is based on the principles of reciprocity, complementarity, community and caring for nature. Reciprocity is what lies beyond *the debt and the gift*. We all have something to give and something to receive. Complementarity is the resolution of the *unitas multiplex* paradox. Our societies have been built on antagonism and not on the complement required for any integration process. Community refers to *the two* as an ontological proposition at odds with the individual, the centre of modernity. **The challenge is to move towards community values in education without destroying the individual or, in other words, to link the individual with community and common values.**

Finally, nature is not a resource; it is part of life, it raises and nourishes us, so we cannot destroy it. Our relationship with nature is based not only on respect but also on affection.

4. From the university of being that teaches professions for an orderly world to the university of becoming that teaches professions for a turbulent world

The growing precariousness puts the vast majority in an unprecedented situation, in *rootlessness*, which is evident in migrants and entire populations, victims of climate change and its effects.

Most universities have focused on preparing students for a particular profession according to the Napoleonic model, the most widespread in the world. The professions we prepare for are not compatible with the world of the future; we continue training for professions that relate to a world that is no longer relevant.

Universities continue to train students for a world being eroded by unemployment, state weakness and growing inequality. They no longer provide answers to the social problems engulfing the world. Therefore, we need a new university committed not to being, but to becoming with other people and other values.

The university of becoming is aligned more closely with innovation and research than training, is committed to both human and non-human values and is unwilling to exploit nature to prosper while jeopardising everyone's lives.

Becoming is learning to live in a world that will undoubtedly be more chaotic. Picturing ourselves on a beautiful planet where we are all happy and where everyone lives as they please constitutes an immense lack of responsibility that is completely out of sync with scientific projections about the planet.

Learning to become is about breaking away from the primacy of being that ensnares us in immobility and predestination. There are no guarantees; higher education must change, simply because we are moving towards an increasingly turbulent, unstable planet, as Donna Haraway (2019) clearly points out.

By way of conclusion

We are perhaps at the most complicated moment in our history and we need to reconsider everything. Will universities be up to the task? Will universities offer pertinent answers that are relevant to the planet? One thing we can be sure of: the answers will not be provided by scientific articles but will emerge from the intersection between universities, intercontinental reflection, regional commitments and local plans.

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Rethinking the university for a new global and local context

Hugo Juri and Manuel Velasco

Abstract

In the past two decades, revolutionary events have affected education, including the now ubiquitous presence of smart mobile devices and social media and the emergence of MOOCs. These technologies have sparked major transformations alongside other advances in IT, big data, artificial intelligence and machine learning, as well as the neurosciences. During the pandemic, all of these changes became normalised around the world and we now face an immediate future of profound social, employment, geopolitical and ethical change. Universities must respond to such change quickly. We are confronted by the fresh challenges and paradigms of the New Education, which will need to take on the traditional roles of the university and also cope with new actors, new students who have different requirements, such as young people who are native to social media or workers who need to refresh their skills or retrain. New tools will also emerge to expand the range of educational opportunities. To this end, it is urgent to adapt today's universities to new models of administration and education that can respond with agility to increasingly faster changes in the local and regional context and to the needs of a society that not only calls on its universities to respond, but also places its trust in them. Universities must accept their social commitment with optimism, seriousness, versatility, speed and courage in order to make the necessary changes that society requires of them.

Introduction

The dizzying changes that are now taking place in higher education are the result of a host of developments, not least of which is the emergence of MOOCs (massive open online courses) (Vega Cruz et al., 2013; Martínez et. al. 2014). The changes, however, are not merely technological in nature. They involve many aspects of higher education. Indeed, the healthcare emergency posed by the Covid-19 pandemic has revived and intensified a large number of them. Among the most significant issues that universities need to address is access to quality higher education for all, expanding the boundaries of inclusion in every respect (García, et. al., 2021; Márquez et. al., 2021). For instance, subjects linked to climate change need to be included across the breadth of undergraduate education so that all university graduates can assume their share of responsibility in caring for our common home (Canaza-Choque et. al., 2021). Moreover, the explosion of technology and innovation has substantially changed research methods and our policies on the appropriate use of science and technology (Colina, 2021; Leyva Vázquez et. al., 2021). All of these changes call for rethinking the training of teaching staff as well (Gómez et. al., 2021; García Vélez et. al., 2021). Yet all of this was only a foreshadowing of the transformations that have now come with advances in the fields of IT, augmented reality, the metaverse, big data, artificial intelligence and machine learning, the neurosciences and more (Juri et. al., 1991; Caballo et. al. 2014; Sancho-Vinuesa et al., 2015; Lorente Ruiz, 2021; Giró-Gracia & Sancho-Gil, 2022; González Torres, 2021; Gorospe et. al., 2021; Aragoneses et. al., 2021; Román, 2021; García Vélez et. al., 2021).

Today, all of these tools cut transversally across all social activities, and education is no exception. To some extent, the changes became normalised globally during the pandemic (which in turn made even more visible the wide disparities that exist between and within countries), and they brought us face to face with the prospect of an immediate future of profound social, employment, geopolitical and ethical change.

The new scenarios call for universities to take on a shared leadership role with other social actors, align themselves with public policies, contribute to the Sustainable Development Goals (Ramos Torres, 2021) and meet the emerging needs of the labour market. At the same time, they are also called on to work with other institutions to solve some of the numerous social, economic and technological problems that confront the societies in which they are immersed (Díaz-Canel Bermúdez et. al., 2020; Moya et. al., 2021).

Immersing themselves in the societies where they find themselves cannot be regarded today as simply one more mission of universities. Rather, it must be a central focus in the design of the policies that govern university education, research and management.

Universities must respond quickly to all of these changes in order to continue fulfilling their purpose as a socially transformative institution, moving forward together with the society to which they belong, especially in times of uncertainty like the present.

Originally, universities sprang up and thrived in environments that were complex, but generally predictable within a particular range of certainty. The reality in which they were immersed enjoyed a reasonable margin of stability. The levels of stability, however, had already begun disappearing before the pandemic in response to the rapid pace of innovation and the application of new technologies, and the outbreak of Covid-19 brought stability to an end once and for all. As a result, it is now necessary and urgent to adapt universities to a new world of volatility, uncertainty, complexity and ambiguity (known as a VUCA environment) that represents the most pertinent features of the existing reality.

To do so, we must first rethink the university itself, not only generically and overall, but also in terms of each institution in particular, based on where it belongs locally and territorially. Second, we must engage in this thinking in terms of an existing context in which the generation and transmission of knowledge are no longer exclusive to universities. Third, we must take into account the momentous weight of universities in the transmission of values, not only as a key element in the New Education, but also as the seedbed for a more just and equitable world and a building block in the construction of a better society.

As a consequence, it is now necessary to review a number of aspects like university governance, to learn new things and to unlearn others. It has become necessary to furnish universities with a more agile management system, develop more versatile models of curriculum adaptation, devise quicker processes for the construction of new educational proposals, and push forward with many other improvements.

Lastly, the basic question in a context of this kind is: what must we do so that our universities are prepared scientifically, academically and culturally to successfully meet the challenges ahead?

Below are two specific cases that involve a set of actions carried out in response to the preceding concerns.

The case of the National University of Córdoba

The National University of Córdoba (Argentina) is more than 400 years old. It has a traditional offering of degrees. At the same time, its academic units are physically, administratively and academically quite remote to cater to more than 130,000 students in person. The university enjoys a great deal of autonomy in its governance, but there is very little academic or scientific work as a whole or in cooperation among its faculties. Most of its academic programmes lead to a degree after five or six years of study, rather like the pre-1997 European model, which is very widespread across Latin America and the Caribbean.

The National University of Córdoba is undergoing a rapid conversion to a flexible educational model adapted to the current needs of blended training models, with flexible, multidisciplinary programmes and credentials based on the acquisition of renewable competences and knowledge, but accompanied by enduring ethical and cultural values.

To tackle the changes of university governance, the National University of Córdoba has split its executive team in two: one group is in charge of the management and administration of the institution, while the other group is responsible for observing the latest trends and developments.

In the Argentine university system, we are following the predominant models to promote the implementation of a system of academic credits that is similar to the European Credit Transfer System with short cycles for first degrees, accompanied by the 3+2+1 system.

We have also developed a virtual campus as members of edX, which is a consortium created by Harvard University and MIT that offers new online credentials, such as MicroMasters and badges, and has trained more than 160,000 students in 100 countries in the past year. At the same time, our virtual campus has furnished vocational training to tens of thousands of workers.

In addition, the university has created a new physical campus (known as North Campus), together with other social actors in the territory. The new campus plans to

offer combined pathways that may involve a secondary school specialising in technology, a polytechnic institute, a trade school, and university studies.

In terms of values, the National University of Córdoba was the original venue of Argentina's 1918 university reform, whose impact spread across the entire region of Latin America and the Caribbean. On the centenary of the reform in 2018, the university hosted the Regional Conference on Higher Education (CRES, in its Spanish initials), which was organised jointly with the International Institute for Higher Education in Latin America and the Caribbean (IESALC, in its Spanish initials). The event drew thousands of participants from universities across the region in preparation for the upcoming World Higher Education Conference in Barcelona, becoming the only region thus far to do so.

The UNESCO regional conference reiterated the fundamental values of the universities of Latin America and the Caribbean, such as the human right to education, education as a social public good, the need for a local sense of belonging in the first place, the rejection of the concept of higher education as an international commodity, and many more.

The case of the University of Meaning

The second model of innovation in higher education comes from the University of Meaning (*l'Università del Senso al mondo*) sponsored by Pope Francis as a global university under the auspices of the Scholas Occurrentes Pontifical Foundation. The university was founded on 5 June 2020, which was World Environment Day, but also the same year as the New Education Programme.

The University of Meaning is public, free, multicultural and intercultural. In some respects, it is similar to the United Nations University. However, its governance is distributed more evenly across a host of micro campuses in collaboration with universities on every continent.

The university focuses on educational pathways that take an up-to-date transcultural view of fundamental ethical, social and cultural values, which are transversally targeted at students in every discipline, in an educational context that is ecumenical.

Drawing on the assistance of associated local universities, the University of Meaning uses a system of ECTS academic credits and offers a curriculum with optional and compulsory subjects. The university and its students are at one and the same time part of a global educational experiment, and part of the team of researchers conducting the experiment.

Final thoughts

Technological advances have an impact in every area of social development. Not only is higher education not immune from the effects, but it is actually called on to lead the processes of social transformation in its territory. The pandemic sped up the processes of transformation and the incorporation of technology into everyday activities. Accordingly, we face new challenges in the context of new paradigms in higher education, which must now add new social requirements to its traditional roles and adapt itself to new students, some who are native to social media and others who are workers in need of refreshing their knowledge or retraining to stay employed in their current jobs or find new ones. Moreover, they must do so using new tools, both tools that exist now and future tools that will expand educational opportunities.

As a result, it is urgent for today's universities to adapt to new models of administration and education that can respond with agility to increasingly faster changes in the local and regional context and to the needs of a society that not only calls on its universities to respond, but also places its trust in them.

Universities must accept their social commitment with optimism, seriousness, versatility, speed and courage in order to make the necessary changes that society requires of them.

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The University and the Challenges of Research and Innovation

Ana Lúcia Gazzola and Jorge Luis Nicolas Audy

Abstract

This text addresses the evolution of the Universities' mission towards incorporating research and its relationship with innovation, as well as the impacts, challenges and opportunities that innovation generates in the academic, social and economic context in today's society, particularly in Latin America and the Caribbean (LAC). The technoscience revolution associated with the emergence of the Knowledge Society has led to a profound change in the role of science and thus that of universities. These institutions have expanded their missions, from teaching to research to extension (understood as social and community responsibility) and innovation, considered as a fourth mission due to its strategic role. In recent decades, LAC countries have seen a scenario of research development that has not been reflected, as it should, in innovation and the consequent impact on social and economic development. Universities must address this issue urgently, promoting the necessary structural changes to facilitate innovation, protect the interests of researchers and the institution, and mitigate the impasses between legitimate conflicting perspectives. It is essential to guarantee respect for foundational institutional values, the focus on the integral education of people, and academic autonomy and freedom.

Introduction

Innovation is a driving force that is changing today's world at high speed and even greater acceleration. Innovation and technological development have always been factors for change, economic growth and improved quality of life. In recent decades, due to the technoscience revolution, especially in the second half of the 20th century, associated with the emergence of the Knowledge Society, there has been a revaluation of the role of science and, consequently, of universities, presenting new challenges and opportunities. In this article, we reflect on these impacts and opportunities in education, research and innovation, with a focus on our region.

The contribution of universities

In the course of history, no other institution has preserved, shared and advanced human knowledge as much as the University. Over the centuries, it has always made enormous contributions to the growth of the society in which it exists. Over time, the role of the University has evolved and widened, involving teaching, research and extension and, more recently, innovation, through knowledge transfer.

In recent decades, we have a scenario of research development throughout Latin America and the Caribbean (LAC), that has not been reflected, as it should, in innovation and the consequent impact on the social and economic development of the region as a whole. Innovation, the main development factor in the 21st century, is based on basic and applied research. It is an expression of research and generates its most visible, but not unique, results in the business environment. Thus, in our region, we have enormous unrealized potential to create mechanisms and processes to transform the knowledge generated in Universities and Research Centres into wealth and social and economic development for society.

The gap between scientific research and innovation in the region is confirmed by indicators such as the Global Innovation Index 2021, which identifies the degree of innovation of countries in the world. LAC countries have performed very poorly over the past few years. In a ranking of 131 countries, the best-positioned LAC countries are Chile (53), Mexico (55), Costa Rica (56), Brazil (57), Uruguay (65), Colombia (67), Peru (70), Argentina (73) and Panama (83).

The University: from teaching to research and innovation

Universities have evolved over time, from religiously oriented colleges, focusing on philosophy and theology, to a broader range of offers, to meet demands for increasingly specific professional training and responding to the needs of a constantly developing world economy. Likewise, the University's mission has been adding new purposes, from teaching to research that expands into direct action in society through extension and, finally, in the development process, through innovation.

Some milestones are very important in these transitions: the 11th century, with the emergence of the University in the West (Italy and France); the nineteenth century, with the emergence of research (England and Germany); and the 20th century, in the post-war period, with a new radical change in the role of the University. The image of the ivory tower, distant from society, is obsolete, and the **University becomes a protagonist in the process of social and economic development, being part of a broad and complex network of relationships with other institutions and social actors.**

Universities, especially in the LAC region, are dealing with enormous tensions. While aiming to achieve humanistic ideals, they struggle to survive and remain useful in a complex world. When the University approaches society, coming out of its ivory tower, these tensions increase. The challenges become much greater for the academic community. Moreover, in the LAC region, the University must remain socially referenced, which impacts all dimensions of its performance.

One of the biggest challenges facing Universities today is the issue of innovation and contribution to sustainable social and economic development, which means expanding the conditions for promoting innovation and bringing about a systematic approach to non-academic productive sectors. This requires institutions that generate knowledge through research and transfer it to society, especially to public or private organizations and companies, but also to governments and other segments. The creation of an enabling environment for this to occur involves a strong government role in legislation, creating and stabilizing a regulatory framework that allows research results to be transferred to companies, enabling innovation. **The legal framework is a fundamental factor for knowledge transfer to occur, especially for public institutions.**

It is equally important that companies do not limit themselves to importing or copying technologies from other countries and that they understand the importance of developing a robust national technology park. This is essential not only for business development but also to ensure national sovereignty itself, which today is more determined by the domain of the scientific and technological cycle than by defence mechanisms typical of past centuries. Sovereignty and national autonomy today are synonymous with the domain of science, technology and innovation (ST&I).

A good example of this is that LAC countries are experiencing in the current global health crisis, with almost total dependence on North America, Europe and Asia for the generation and production of vaccines and medicines. The region must overcome its scientific and technological backwardness. Higher education has a strategic role in facing this challenge.

Science, Technology and Innovation and Social and Economic Development

In this issue, cultural change is a central theme in Universities, companies and governments. If transferring knowledge generated at the University to companies were a natural process, mechanisms, legislation, and induction would not be necessary for this to happen. This is equally true for companies. Initiatives such as the Business Mobilization for Innovation in Brazil, are strategic to generate cultural change within companies. Equally strategic are the efforts of several academic entities. Similar initiatives occur in many countries in the region, with different degrees of consolidation and success, but there is little integration of such actions. Although there are positive examples of articulation between universities in the region, in the field of innovation, this is almost non-existent. Again, the example of vaccines is enlightening but not unique. There was no regional articulation for fighting the pandemic, for producing and distributing vaccines or dealing with other cross-border issues such as climate change or the Amazon.

Innovation has its origin and driving force in the generation of new knowledge. In a broader view, especially since the technoscience revolution in the second half of the 20th century, education and ST&I are increasingly related to the process of social and economic development.

Over time, the University transforms itself from an institution focused on teaching into an institution that combines its resources in the area of research (with teaching and research extending to society) with a new mission, focused on the economic and social development of the society in which it operates. It stimulates the emergence of innovative environments and an entrepreneurial culture. Thus, **Universities experience a new tension in their role in society as institutions with a triple mission: teaching, research (both deployed by extension) and innovation.**

Universities have gone through two major changes since their creation in the 11th century in Europe (University of Bologna), centred on the transmission of knowledge from teachers to students.

The first significant change in its mission took place in the 19th century, especially in Germany, adding research as the University's second mission, while extension is the unfolding of teaching and research. These transformations still have their consequences and challenges, involving tensions between those activities in many Universities. Although the process is still underway, particularly in the LAC region, a second significant change began in the second half of the 20th century.

The concept of Entrepreneurial University emerged from experiences at universities such as MIT, Stanford and Harvard, adding a new mission focused on economic and social development. It is Innovation, in the context of the University's Third Mission in developed countries, and the Fourth Mission, as we claim, within the scope of LAC.

This new vision positions the academy as an important economic and social development vector. Since then, the University has lived with the tensions generated by the new environment.

In the LAC countries, the teaching-research-extension tripod always characterizes the university, with the transfer of innovation being a new dimension that acquires its own strength. In developed countries, however, extension does not have the programmatic strength that our region gives it, which is reflected, for example, in international university rankings, which ignore extension completely. At the national level, extension indicators are rarely included in budget matrices.

Due to regional tradition, in the LAC context, the third mission initially referred to social and cultural extension activities, such as the deployment of teaching and research. It is necessary to expand this concept, and it makes more sense to speak of the University's fourth mission, given the strategic importance of innovation today.

This does not mean that there is Extension in the sense of social and cultural activities only in our region. In developed countries, several universities emphasize such activities, expressed in their organic structure as territory and commitment, social or civil responsibility, community commitment or engagement. There are networks or coalitions with this theme.

In LAC, some universities consider innovation and technology transfer as extension. However, the organic structure of many institutions confirms our view that the university today has four missions. Most of our public universities have, in their central structure, Pro-Rectories of Teaching (Undergraduate and Graduate), Research and Extension, in addition to sectors of Science, Technology, Transfer and Innovation. Although the compositions vary (Graduate Studies and Research, Research and Innovation), the four missions are there.

The emergence of the Third (or Fourth?) University Mission

The third (or fourth) mission emerges from the second revolution in the Universities, when innovation and entrepreneurship are added as a focus of their performance. Thus, society starts to expect a growing role in the process of social and economic development from universities, leading to the concept of Innovative or Entrepreneurial University.

The impacts of the second academic revolution are significant for universities, generating new challenges and opportunities, which require profound rethinking. Institutions are encouraged to find new ways and positions in their relationships with other actors in society.

The change in mission requires a new formatting of academic structures, essential to respond to the new reality adequately. The level of this change prompts a review of the impacts on the university's vision of the future and organizational structures, as well as on its relationship with society. However, the preservation of the institution's core values is fundamental, being an important aspect for the formulation of new strategies during the institutional planning process.

The vision of this new mission generates many discussions, whether of a conceptual nature or types of activities and relationships involved, such as knowledge capitalization, entrepreneurship, innovation and technology transfer, which are similar to the North American model. In addition, there is tension in terms of value between them and activities that do not include these relationships. This generates delays in the necessary transformations. The challenge is to transform the university without losing its identity and autonomy. In other words, advances should not represent a destruction of the other roles of the university.

There are currents against the university's involvement with the demands of the productive sector. Whether understanding innovation as part of extension or taking it as a separate dimension, it is important to overcome such contradictions, considering that the two views must lead to knowledge transfer to society. This represents a more strategic and active reach of the university with society in general, for economic and social development, through entrepreneurial activities and by supporting the innovation process.

For this to occur, **the university must have technology and transfer centres or institutes, as well as research ethics committees and technology protection and transfer offices. Adequate and inductive institutional regulations should allow researchers to have partnerships with industry and create mechanisms that ensure that part of the resources collected by the transfer activity reverts as an investment for research** in the various areas of the University. A part of the resources generated may, for example, create scholarship and research funds for the University itself, supporting areas not covered or less covered with this possibility of interaction, such as the humanities, arts and basic research. This would guarantee the balance of operating and production conditions among the various areas of the university.

The challenges of university renewal

Innovation is the responsibility of all actors in the quadruple helix: governments, companies, universities and organized civil society. It involves knowledge, creativity and courage to change and transform reality. Innovation can and must occur in all areas of knowledge and not just in technological areas. An economic concept of innovation involves changing the behaviour of agents in the market or the work environment, understanding it as the effective application of new ideas in a given context, generating added value. Furthermore, **contrary to common sense, innovation does not necessarily involve technology, but it will always involve the creativity to apply the new and the courage to transform.**

In this broad vision of innovation, we can identify possibilities in all areas of knowledge. From the most obvious ones, such as companies in the technology areas, which generate start-ups and new employment and income opportunities, but also in areas such as social service or the social sciences (actions in communities that improve people's quality of life and social indicators such as the HDI). Likewise, in the areas of government (advances in management methods and processes), education (new pedagogical methodologies and educational technologies), visual arts, etc. There are examples of possible innovations in all areas of the university.

Several authors, such as Henry Etzkowitz (2017), Derek Bok (1984) and Burton Clark (2003a), highlight aspects that present themselves as challenges in this context:

- Controversies about entrepreneurship in the academic area: the emergence of conflicts of interest is a symptom indicating the process of change is underway, as it only appears when relationships begin to intensify and become more complex.
- The breaking of the Ivory Tower: the University has to approach real problems, not only social but also economic, cultural and environmental. In this context, the University starts to act in an organic way inserted in society and as a protagonist and vital force in the development of the territory where it operates.
- Separation and integration: the productive action is not to ignore conflicts of interests but to regulate and

mitigate the impasses between legitimate conflicting interests.

- Confluence of interests: in an integrated approach, research and the commercialization of research results will combine in a single model.
- Finally, it is essential to guarantee respect for institutional and founding values, focusing on the integral education of people and academic autonomy and freedom, which must not be overcome by short-term market or political interests.
- In this sense, literature identifies five characteristics that involve critical issues to prepare the University for the process of institutional change and total fulfilment of its missions:
- A forceful and clear direction forward, accepted by the central administration and by the various academic departments, which should reconcile the new managerial values with traditional academic values.
- Expanded peripheral development: the development of new institutional structures and mechanisms should be encouraged in order to meet new demands, such as interdisciplinary research centres, innovation environments, etc.
- Diversification of funding sources: it is necessary to expand funding sources, whether for the sustainability of research or of the University, complementing public resources.
- The stimulation of academics: the main change factor lies in university departments and all their collaborators accepting the process, encouraging them to participate in the transformation.
- The development of an integrated entrepreneurial culture: creating an integrated culture, represented by a shared vision, is critical for the success of change, generating an institutional perspective.

A reflection on the topic

Nowadays, the University, involves integral performance in the Science-Technology-Innovation triad. What is new in this approach is the aggregation of innovation as inseparable from Science and Technology. **By incorporating the term innovation, we are highlighting three fundamental aspects: interaction with society (to identify demands), companies (since it is in this type of organization that innovation occurs) and government (as a process facilitator).** In other words, innovation means research and development plus knowledge transfer to society.

The innovation process at the University involves a series of steps, the fundamental condition being the construction of a new institutional culture. Once this complex stage is completed, some concrete actions must follow:

- Organization of research at the University: focusing on the demands of society, creating interdisciplinary research centres and development mechanisms with multiple funding sources.
- Fostering innovation: stimulating priority research areas, allocating research resources in a planned manner, creating mechanisms to encourage innovation (policies for protecting the intellectual property of the knowledge generated, rules for participation in future economic results, incentives for innovative researchers, etc.).
- Knowledge transfer: transferring results to public and private companies that produce the resulting goods or services and allowing academics to become entrepreneurs.
- Creation of a robust innovation ecosystem, involving structures and actions aimed at developing an innovation environment (scientific and technological parks, incubators, accelerators, innovation hubs, co-working spaces, fab labs, circular labs, etc.) to enable interaction among the actors of the quadruple helix.

The University itself is an environment of potential innovation. To develop this potential, the importance of institutionalizing the new vision of the University is highlighted, as well as institutional mechanisms that make it viable. The will of some leaders is not enough. Institutional policies (in the areas of technology transfer, mediation of conflicts of interest, research projects with companies, patent protection, incentives for patents and patent licensing, etc.) and the development of innovation environments (such as technology transfer offices, research ethics committees, technology parks, incubators, innovation networks, fab labs, circular labs, etc.) are important to create the conditions for the development of a climate focused on innovation and entrepreneurship (culture change). **A clear and shared strategic vision at the institution is the starting point for the process of transformation and renewal of the academic environment.**

Conflicts of interest must be well managed. Opposite models involve a total separation of academic (knowledge generation) and business (commercialization of generated knowledge) activities, adopted by several US and Israeli universities, or the search to integrate research and business activities on the same institutional vision. The most suitable solution for each institution must reflect its culture and that of the society in which it operates.

Other relevant challenges involve maintaining the University's integrity while generating revenue from intellectual property and research results, focusing on sustainability; researchers' satisfaction when carrying out their activities in an environment focused on teaching and research, and constant risk management throughout the change process. The inclusion of the humanities and arts in the process of change, either directly in the approach to companies, or indirectly, as a field of study and research, or by critically monitoring the process to ensure that the University's identity and values are maintained, is strategic.

The University operates in a context of complexity and uncertainty, where new interfaces with society are required. The balance between demand and responsiveness, flexibility and adaptability are important aspects, and it is essential to preserve academic values expressed in the teaching and research activities that the University develops in all areas of knowledge.

The university must be adequately prepared to face the challenge of its new mission. To work in networks (internally and externally), cooperate intensively in research efforts, nationally and internationally, are challenges that the Institutions must face.

Another dimension involves the resources for this process to take place. Central and regional governments are important, especially in the initial stages of investment for innovation. **Robust sources of investment must be found and protected to foster this virtuous circle between research and business innovation.** It is equally essential that any resources invested by governments, as well as those arising from innovation, are not used as an excuse to reduce public budgets at universities. Likewise, **the university's autonomy must always be preserved, as it cannot be linked to interests that compromise its social role and the free production of new knowledge.** All of this requires legislation that facilitates transfers but preserves the values of the university institution and its multiple roles.

The Global Innovation Index indicates that our countries must pay increasing attention to the actions needed to improve our position, which does not reflect the size and potential of our economies. Certainly, the role of public research institutions is fundamental for reversing this situation and effectively supporting the region's social and economic development process.

Final Considerations

Universities that overcome the challenges will be those that will recognize and honour their strengths, respecting their values, while innovating with conviction.

The economic results of innovation and knowledge transfer from universities to society, if well-conceived and implemented, can generate new sources of institutional sustainability and new investments to strengthen basic research and different areas of knowledge.

It is clear that when addressing innovation at the University, especially disruptive innovation, the focus is on change, transformation. Innovation is always challenging. If it is not challenging, it is not transformative. If it is not transformative, it is not disruptive.

At a university, harmonizing a culture of innovation with a sustainable long-term vision is the great challenge. Overcoming this challenge involves people capable of generating the possibility of change, simultaneously promoting the conditions for a critical analysis of this process and its internal and external consequences.

Universities traditionally have a history of cooperation and networking because relevant and disruptive knowledge is not produced in isolation. This generated a culture of work among peers, nationally and internationally. However, today, we need new transnational mechanisms and instruments, autonomously generated by multilateral organizations and respecting regional realities, to stimulate and induce cooperation, always at the service of environmentally sustainable development, simultaneously in all humanity's social and economic dimensions.

We must focus on the purposes of creating a LAC space for innovation, with solidarity and social responsibility

as founding values that must always characterize us as a regional block, sharing the same challenges and opportunities for development. We should strive to create a government body aimed at integrated regional management of S,T&I, as the coordinator of the Regional Conference on Higher Education (known as CRES), Francisco Tamarit, has defended (2021).

This perspective is important so that our countries are not condemned to consume solutions generated by developed countries with a social, cultural, environmental and economic context very different from ours.

This vision, which is supportive, responsible and regional, must reconcile the humanities and the arts with science and technology, to form free, supportive, committed and innovative citizens to face the great challenges of society, such as those expressed in the 17 Sustainable Development Goals.

This balance between tradition (institutional and academic values) and renewal (new opportunities and demands from society) is the differential that the best universities of the future are building today.

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Edges of the public in higher education and knowledge governance in Latin America

René Ramírez

Abstract

In the past two decades, revolutionary events have affected education, including the now ubiquitous presence of smart mobile devices and social media and the emergence of MOOCs. These technologies have sparked major transformations alongside other advances in IT, big data, artificial intelligence and machine learning, as well as the neurosciences. During the pandemic, all of these changes became normalised around the world and we now face an immediate future of profound social, employment, geopolitical and ethical change. Universities must respond to such change quickly. We are confronted by the fresh challenges and paradigms of the New Education, which will need to take on the traditional roles of the university and also cope with new actors, new students who have different requirements, such as young people who are native to social media or workers who need to refresh their skills or retrain. New tools will also emerge to expand the range of educational opportunities. To this end, it is urgent to adapt today's universities to new models of administration and education that can respond with agility to increasingly faster changes in the local and regional context and to the needs of a society that not only calls on its universities to respond, but also places its trust in them. Universities must accept their social commitment with optimism, seriousness, versatility, speed and courage in order to make the necessary changes that society requires of them.

1. Introduction

In 2018, the III Regional Conference on Higher Education in Latin America and the Caribbean (CRES 2018) celebrated the centenary of the University Reform movement in Cordoba (Argentina) (IESALC-UNESCO, 2018). It was undoubtedly the biggest event of the decade, with government authorities and the various bodies of the higher education system coming together to discuss and establish the strategic lines to be followed over the next decade. The region was the only continent in the world to hold a collective meeting on that scale, in anticipation of UNESCO's 3rd World Higher Education Conference in 2022.

Beyond the wider discussions of the challenges facing higher education systems in the region, CRES 2018 endorsed the agreements reached in the Declarations of the Regional Higher Education Conference held in Havana (Cuba) in 1996 and the World Higher Education Conferences held in Paris (France) in 1998 and Cartagena de Indias (Colombia) in 2008, which defended the principle that Higher Education should be treated as a public and social good, a human and universal right, and a duty of the State.

Among other equally important matters, one issue in particular was added to the public debate: the notion that defending public higher education is not enough if knowledge governance is private and commercial. In the transition that capitalism is currently undergoing, accumulation is increasingly taking the form of profit transfer through processes in which information and knowledge are expropriated from a global general intellect to large transnational corporations.

While there was a clear understanding of the shift in modern-day capitalism and the danger posed to global well-being by the privatisation and commodification of higher education as a public good, as seen in the current pandemic, the Declaration also stated that: *"We should consider knowledge as a universal human right and a collective right of the people, for it is a social and common public good promoting the sovereignty, wellbeing and emancipation of our societies and the construction of Latin American and Caribbean integration."* (CRES, 2018).

This article aims to place a spotlight on what it means to regain a sense of higher education and knowledge as a public good. On that basis, it will outline the strategic reasoning behind the guidelines set out in the CRES 2018 Declaration on the importance of regaining a sense of knowledge governance as a public good at the global level. Before doing so, the article examines the transition that capitalism is undergoing in order to

understand the vital role that knowledge and the higher education system play within the dominant system of accumulation.

2. The production of knowledge as a scarce resource in cognitive capitalism

On 1 May 2014, 3,000 people received a re-tweet that read: "We remind users that we are all working for Twitter right now. Happy globalised workers' day" (Adriaral, 2014).

This tweet summarises a paradigm shift that is occurring globally. **The world is undergoing a transition that is re-structuring our daily lives and, in doing so, creating a new international division of labour (and new forms of exploitation).** In this transformation, the material objectification of science is becoming less and less significant in the process of accumulation, while increasing importance is given to the cooperative coordination of intellectual, creative (innovative) and linguistic-communicative work that is generated in society, in productive processes and in the appropriation of natural resources (renewable or not), within the framework of the private appropriation of information and immaterial production. Such mutations exacerbate old labour exploitations and create new ones. Some authors have called this metamorphosis of accumulation "cognitive capitalism" (Hardt and Negri, 2011; Vercellone, 2009).

This does not mean that labour is now lighter, or that the processes of automation and technological advances have now fulfilled modernity's promise to free us from the tedium of business and increase our leisure opportunities. On the contrary, what we are currently seeing in the context of the pandemic is, on the one hand, that we work longer because connectivity creates the obligation to be productive 24/7; and, on the other hand, as "immaterial labour" is legitimised and the wholly new spirit of capitalism translates into Silicon values, the concrete materiality of the practices and knowledges involved in human care and sustenance has become even more pressing, while remaining undervalued.

To evaluate these circumstances, we could draw from Marx and say that there are four levels of surplus value usurped by the owner of the means of production: direct, which dispossesses the worker in situ; cooperative, in which the time gained by collective labour is expropriated; indirect, in which the capitalist also expropriates the value produced by the worker who stays at home doing unpaid work, and which are the conditions of possibility of paid work – conditions that, historically, have been sustained by the devalued care and sustenance work done mostly by women and other population groups considered "inferior" under regimes of patriarchal-economic inequality; and mediate, which refers to the contradiction between the exploitation of labour and its natural conditions of valuation, which are progressively consumed as the continual acceleration of accumulation erodes the cycles of natural reproduction – both of the natural environment and of human nature itself, which are inextricably linked.

To these four categories of usurped time, cognitive capitalism adds another: the time required to generate the information, knowledge and expertise produced in everyday life, a large part of which is processed through big data and expropriated by large transnational platforms that monopolise the management, storage and circulation of information.

The internet of communications exists alongside the internet of logistics and the internet of things, which allows a higher level of cognitive extraction. However, other equally violent processes occur alongside the extractivism of data mining: 1. South-North transfer of knowledge through the net flow of skilled migrants[1]; 2. contributions made through the scientific production of South-based research that is appropriated by transnational corporations;[2] 3. biopiracy of genetic resources;[3] and 4. extraction of ancestral and traditional knowledge to generate technologies;[4] 5. a new international division of cognitive labour, whereby countries in the South are limited to providing data that are processed by theories originating in the North, which are hegemonic among academic oligopolies; 6. unequal exchange, which undervalues the South's indigenous (substantive) knowledge and prioritises the North's (procedural) knowledge to the point of viewing it as the primary source of value, dividing it from material work under the lens of a supposed "immaterial accumulation"; 7. reversal of the social function of knowledge, which is privatised for utilitarian profit-making purposes that challenge the collective legitimation of knowledge and thereby undermine the social dimensions of social coexistence (risks to democracy itself); 8. cognitive colonialism, whereby globally connected intellectual castes are defended through academic enclaves that sustain discourses and practices of epistemic racism, segregating the imaginary constitutive communities from peripheral nationalities in favour of adaptable welfare ideologies.

These processes are carried out through the fictitious construction of barriers so that ideas, ancestral knowledge, expertise, biodiversity information, etc., are manifested as scarce resources by means of increasingly sophisticated systems of intellectual property and digital technology, and channelled through financial systems (stock markets).

Capitalism as productive expansion that cheapens commodities no longer exists; instead, it is now about controlling values for profit, in an updated form of rentierism (Maito, 2013). An ownership ethos is therefore imposed on the previous corporate ethos: there is an attempt to re-establish accumulation through processes of patrimonial concentration (Piketty, 2014), the hyper-exploitation of labour (Amin, 2009, 2008) and of nature (Bellamy Foster, 2018; Bellamy Foster et al., 2010), and renewed forms of accumulation through dispossession (Harvey, 2005, 2003). **These profit-making processes that do not generate wealth require knowledge as a public good to be privatised in order to artificially generate its scarcity.**

A new form of rentierism can thus be observed: while Marx maintained that rentier capital smothered productive capital in pre-capitalist societies, in cognitive capitalism the extracted rent consumes an increasing social surplus due to the greater organic composition of capital. These are two different forms of logic: the rentier generates scarcity, while the capitalist generates productivity. In fact, however, productivity has fallen as a consequence of industrial overcapacity. This is why a stagnation in the rate of profit has led to cognitive rentierisation, and not the other way round. The more technologically advanced countries retain more jobs, and industrial competition remains the engine of growth.

This tendency towards cognitive "rentierisation" has also contributed to the current crisis. The pandemic was also caused by attempts to push the frontiers of accumulation through techno-cognitive irruption to capitalise on the surrounding ecologies, with the subsequent emergence and spread of zoonotic diseases.

What is the solution to the crisis of accumulation? The development policies proposed in Latin America in the mid-20th century were geared towards nationalising strategic sectors, taxing profits and establishing competition policy. Were they enough? The current crisis would suggest that they were not; moreover, could they be applied again? Not if we consider that, where they were implemented, redistributive regimes were historically based on the profitability of industrial sectors, which were non-existent in Latin America. Thus, we have moved seamlessly from underdevelopment to a kind of "overdevelopment", characterised by saturated markets. Indeed, beyond the processes of privatising the provision of higher education that the world and the region are undergoing, praxis in today's capitalism involves the appropriation of knowledge and technologies resulting from a form of knowledge governance that seeks new ways of recovering its lost profits.

1. 76% of university patents in the United States were attributed to foreign inventors and, of these, 93% of patent registrations were owned by multinational corporations. (Delgado Wise et al., 2016).
2. According to data from the World Intellectual Property Organization, in 2014 approximately half of patent generators came from peripheral countries; however, around 75% of patents were concentrated and appropriated by multinational corporations (Delgado Wise et al., 2016). For example, Codner and Perrota (2018) analyse what has been called "the blind technology transfer process (BTTP)" (the flow of scientific knowledge to foreign companies' patents), stating that "of the 254 researchers studied, 37.5% (94 researchers) were referenced by their scientific publications on 341 patents" (p. 4). Similarly, Zayago and Foladori (2010) show that although Mexico is second only to Brazil in nanotechnology research in Latin America, it does not tend to appropriate the knowledge it generates, either through patents or by product and/or applications from Mexican operators: 56 out of 60 patents related to water nanotechnology belong to large transnational corporations.
3. In the First Report on Biopiracy in Ecuador compiled by the Ecuadorian Institute of Intellectual Property (IEPI, 2016), it was stated that 112 patent applications based on Ecuador's endemic genetic resources were not duly authorised by the respective government bodies. The companies with the highest number of applications were domiciled in the United States, Germany, the Netherlands, Australia, South Korea, Israel, Belgium, France and the United Kingdom. Uncoincidentally, in the World Intellectual Property Organisation (WIPO) these countries tend to oppose international regulations that prevent the misappropriation of genetic resources and require the compulsory disclosure of their origin.
4. Portuguese sociologist de Sousa Santos (2006) has coined the term "epistemicide" to refer to the silencing of non-scientific knowledge. Today, however, Western science seeks to extract ancestral peoples' knowledge without giving them any benefit or recognition, even though such knowledge is ultimately privatised for patents. In this respect, rather than epistemicide, it is tantamount to what might be termed "cognitive piracy".

In this context, **public university systems contained within commodified and privatised ecosystems usually end up generating a higher level of private appropriation for large transnational corporations, with a value that is usually generated collectively and whose social impact would be much greater if it was reclaimed as a public good.** In this framework, if public higher education is to be defended, it is vital not to overlook the dominant form of knowledge governance that seeks to establish itself within so-called cognitive capitalism.

3. Public issues in the field of Latin American education

In the capitalist transition, **universities have become key players in the transfer between the public generation of information and knowledge, and the private and mercantile appropriation** primarily by large global transnationals (Delgado Wise et al., 2016).

This situation has led to the fictitious creation of knowledge as a scarce resource, facilitating the extraction of value. Thus, cognitive capitalism has created an institutionality that allows it to make the appropriation of the surplus value of social knowledge viable through intellectual property systems that are currently dominant in global trade, producing what Michael Heller in 1998 termed the "tragedy of the anti-commons".

In the knowledge arena, this tragedy means the under-utilisation of scientific knowledge caused by the over-management of intellectual property rights and over-patenting. In other words, in the sphere of knowledge, capitalism has resulted in the knowledge resource being under-utilised or wasted due to being "under-exploited" as a consequence of the over-patenting and over-management of private property rights, as part of the financialisation of this resource.

In this sense, one of the axes of a new perspective on the higher education system in general, and universities in particular, in the context of the knowledge production generated by this system, consists in rethinking the public dimensions of this field.

There are at least ten aspects to consider in this new perspective on the public dimension:

The impossibility of exiting the education/knowledge resource: Re-establishing the public domain requires an awareness of the impact produced by the "higher education" resource, which will sooner or later affect society as a whole. As a society, therefore, it is not possible to disengage from the production of the "higher education" or "university" resource. As Hirschman (1970) described it, there is no option to make an "exit", because even this has unavoidable negative consequences of a collective nature. The impacts of knowledge and higher education should not only be seen in individual terms but in their collective effects: if we have well- or badly-trained professionals and scientists, and we produce correct or incorrect knowledge of good or bad quality, the social impact will soon be felt.

Making the system less elitist and more democratic: Re-establishing the public education system involves the "de-eliticisation" of the university sphere; in other words, democratising the process of entering, continuing and graduating from university; and also democratising the decision-making process within the centres of study, i.e. achieving co-governance. The introduction of tuition fees in public universities and the resulting privatisation of higher education provision under neoliberalism (the proliferation of universities, degree courses and self-financed private programmes) have resulted in clear barriers to entering, continuing and graduating from university (Ramírez, 2010: 34-40). On the other hand, private universities were created through a specific appropriation of the concept of autonomy. For example, a model linked to the financial-budgetary sphere was upheld, without its co-governance counterpart. Private universities skipped this crucial aspect and functioned as companies or foundations with promoters and managers who pursued profit above all else. In the case of public universities, under the notion of autonomy, they defended "self-financing" by charging fees for courses and training programmes, which led to the exclusion of low-income students. **The challenge of defending the public sector in this field therefore requires questioning the ivory tower that perpetuates status and social class through the commercialisation or privatisation of the system. It is vital to regain the principle of free education in the fight to guarantee the right to higher education and make the system less elitist.**

Market heteronomy and real autonomy: Guaranteeing public higher education means regaining its genuine autonomy and breaking the heteronomy that has arisen around the market and corporate interests. **Re-establishing a public higher education system requires connecting multiple interests to achieve some form of general or collective interest in the university sphere and in society.** With the aim of allowing the system to "self-regulate", some actors governing the field were in fact co-opted by groups, interests, and particularist and mercantile logics (Minteguiaga, 2010). Although they were supposed to represent the common interest of all those involved and of society as a whole, they enabled a process of commodification and privatisation that has been unprecedented in recent years. In Latin America, each individual or indeed group involved took a biased view, protecting their own best interests, and the State was relegated from the regulatory process in order to fulfil the "only purpose it served": to guarantee a constant flow of money from university funds which, in turn, were distributed unfairly. This phenomenon caused low-quality educational provision to proliferate, including large-scale social fraud in which degree titles were sold with no subject knowledge required. Ultimately, the prevailing vision of autonomy led to autarky with regard to society, and to heteronomy with regard to the market.

Eradicating the patriarchy through the public domain: Linked perhaps to one of the most deeply rooted social practices in the region's society, the strengthening of the public university system must eliminate the patriarchy from the higher educational environment. Patriarchal society stems, among other things, from the sexist private-family relations that persist in Latin America. It is paradoxical that while increasingly more women than men are entering, continuing and graduating from university, and with better academic performances and qualifications, the university authorities and staff have always been made up almost exclusively of men. The rectorships of public universities continue to be largely monopolised by men, pushing women and people of other genders into the background. The issue of public education sheds light on a problem that is often incorrectly positioned within the private or domestic sphere, but which is reproduced in numerous areas of public life, including academia.

Endogamy and nepotism: The significant levels of endogamy and nepotism in the sector are exploited a means of not safeguarding public higher education. Positions of authority are passed from parents to sons or daughters, and from husbands to wives, and relatives are appointed to academic and administrative posts with absolutely no respect for the rules of university democracy. There is sometimes evidence of a dynamic that is related to academic patronage and closely linked to the patriarchal theme: in many cases female academics "owe" their career successes to parental or family connections rather than to their merits or professional experience, even though they are experts in their fields and more qualified than the men with whom they are associated.

Higher education as a shared meeting place: If university is to be considered a public good, it first needs to be conceived as a shared meeting place. In contrast, **when enrolment is privatised, processes of class reproduction and social distinction are triggered. Under a new framework, the university should become a place of reference where concurrent encounters take place between numerous social groups** from diverse ethnic groups, different political positions, different genders, unequal economic strata, heterogeneous territories or regions, and different creeds. Universities should not become a space for social selection and homogenisation. Neoliberalism has promoted access to the higher education system according to the price people are able and willing to pay, and its aim is not necessarily education but rather access to the dominant classes and the social relations that flow from them. This is exacerbated by the expansion of business-oriented private universities and a system of tuition fees that has been in place even in public universities in most Latin American countries. In addition, the university sector's fee charging schemes have gone largely unregulated: while fees and charges were supposed to reflect the "real costs" of the courses and programmes offered, they have followed monopolistic market logics.

The mission of higher education institutions: Recognising universities as a public good relates to the very mission and purpose of these institutions. The professionals or academics who graduate from local universities are generally trained to satisfy the needs of the market or to maximise the profits of educational institutions. However, the education, knowledge, information and technology that are produced in study centres should not be linked to the accumulation of capital; instead, they should be geared towards meeting social needs, guaranteeing rights, making society more democratic, enhancing individual/collective and territorial capacities, and generating collective wealth and high-quality

democracy. This calls for a broader interpretation than what is proposed under the utilitarian perspective. In this new sphere, **knowledge – and the process by which it is generated – must be contemplated and constructed as a public good for society (pro-commons)[5] and not for market purposes.**

From this perspective, it is easy to see why universities' autonomy has gradually become subordinate to the market; in other words, it has become a market heteronomy: it has not disseminated knowledge or its production, but commodified, monopolised and appropriated it privately.[6] A similar situation occurred with the planning of academic provision, which followed a market logic. **If the public university sphere is to be rescued, it must first regain a sense of autonomy combined with social responsibility, as opposed to the autarchy and heteronomy that have been dominant in universities in recent decades.**

The search for truth and quality in democratic debate: It may be argued that re-establishing universities as a public good means re-establishing their legitimacy within public opinion, which contributes to a higher-quality democratic debate. This legitimacy can be regained by maintaining the rigorousness of information and knowledge through theoretical debates and research processes that are generated within its limits, where the search for truth should not be caught between commercial and private interests. The systematic lack of discussion, scientific research and rigour – and the clear bias inherent in the system – have caused the voice of universities to be delegitimised. To regain its legitimacy, universities must take the lead once again in conceiving the potential for change within the framework of the new challenges facing the world and the Latin American region.

The general intellect: The decommodification of knowledge means re-establishing it as a collaborative, collective and common good over individualistic and private interests. Knowledge will never be seen as a private or individual good if it is recognised that it must be produced as part of a collective process, in which social problems with social relevance are discussed; in which responses are developed that respect different knowledge, and solutions are reached that make a commitment to the common good. The production of knowledge per se is collective, because it is based on the intergenerational accumulation that has occurred throughout human history. In addition, the new forms of knowledge governance tend towards cooperation. Therefore, if the organisation is collective, the social meaning of knowledge production must be re-established and ownership must be inclined to recognise collective work. **On this point, intellectual property should be an exception to the public domain and should be public or collective property in accordance with the social intellect that generates it.**

The plurality of knowledge and of knowledge/opinion practices: Re-establishing the public domain means building a system that recognises diversity as part of the social learning process so that democratic debate is democratising. This requires a system whose social pedagogy incorporates both the plurality of knowledge that exists in society, and epistemic equality and impartiality.[7] The public domain cannot be established as such if it does not build an intercultural society (world), and, for some countries in Latin America, plurinationality. In fact, a fundamental part of a sustainable democracy lies in recognising what is diverse, what is "other", as being equal (which does not mean homogeneous). In other words, **re-establishing the public domain in a diverse society means building systems in which a dialogue can flourish between a plurality of epistemologies without hierarchies of power. The public domain thus constitutes the de-monopolisation of one knowledge over others.** Here, a fundamental break occurs when a pedagogy of service-learning is established, in which people can study in a shared experience in real communities where people live, engage

5. On this point, it is worth clarifying that the notion of the commons used in this article differs from others with profoundly anti-State roots, which lead them to undervalue the connections of meaning with the notion of what is public, both in doctrinal and historical terms (cf. Dardot and Laval, 2014). For such perspectives, it would be contradictory to propose a conception of the commons that reserves a role for the state in its realisation. In the capitalist context, renouncing the collective action of the state in order to make everything depend on society means overlooking the fact that: (a) the state is an expression of civil society and its social relations – its externality is an artifice; (b) it can take on various historical forms depending on the correlation of forces in the societal sphere, not just a single one associated with the so-called communist states; (c) the incommensurability of social inequalities presents a major problem for coordinating some form of shared interest; and (d) the state's claim to summon up and represent some form of shared interest has contributed to the struggles that occur in society, and continues to do so. The commonality assumed in this article also alludes to what is collective and external to the state.

6. In Latin America, for the most part, not even the transmission of knowledge has been linked to a critical analysis of the applicability of concepts regarding national situations and problems (Ramírez, 2018).

7. The first presupposes that there will be no hierarchy of knowledge; while the second implies that there will be no homogenisation or standardisation of knowledge.

in collective action and work: the public sphere, everyday life, the collective space and ecosystems as true places of learning. This perspective requires a dialogue between reason and opinion in the educational, creative and knowledge-generating process; in other words, it is vital to put an end to the destruction of knowledge (epistemicide) as well as of opinion; which also focuses a spotlight on the need to re-establish the humanities and the arts. From this perspective, re-establishing the public domain means democratising our ways of learning about the world.

4. Public governance of global knowledge

Usually, when people talk about the crisis of higher education as a public good, they refer to the privatisation of provision and the rise of enrolment in the private sphere. Viewed in these terms, Latin America is no stranger to this global phenomenon, where the majority of enrolments are now private (54%: cf. Fanelli, 2018). Undoubtedly, tuition fees, whether state or private, are an economic barrier to students accessing, continuing and graduating from higher education.

Defending the principle of free tuition is a significant step towards re-establishing the right to and the meaning of public education. However, this article has tried to argue that **guaranteeing the principle of "social public good" requires breaking with something that has deeper, structural roots. Universities can be public and free and still respond to a market-based or private logic.**

Higher education as a "social public good" cannot be realised unless its autonomy tries to break with market heteronomy and an autarchic provision detached from social problems, and unless patriarchal and endogamous relations are dismantled within universities. Privatisation in the field means cutting institutions off from major national, regional or global debates, or building systems that do not seek to generate truth in order to broaden democratic debate. Likewise, to build higher education systems that constitute a public and social good, it is necessary to defend epistemic equity and equality where knowledge can be generated within the framework of a knowledge dialogue that makes it possible to strengthen plurinational and intercultural societies.

However, in order to continue the debate on re-establishing public higher education systems both globally and in Latin America, it is important to consider the transition that capitalism is undergoing, which means discussing the governance of knowledge. **There may well be free, non-patriarchal universities that have an impact on democratic debates and promote the knowledge dialogue, but if knowledge governance has a market-based, private logic, it will never be possible to break with the tragedy of the anti-commons, and higher education institutions will become a tool for realising capital, which, in the framework of the unequal exchange that generates cognitive capitalism (Ramírez, 2018), means making them more dependent.** This situation has a geopolitical background: disputing the meaning of the knowledge governance at the global level.

The social function of science and knowledge revolves around the accumulation of capital. Under the current conditions in which the system functions, universities are just another cog in the wheel. In this framework, re-establishing the public and social aspect of knowledge requires building a system with other social purposes that make it possible to resolve the major problems that civilisation is facing, as the CRES 2018 Declaration makes clear: guaranteeing sustainability and peace; preserving cultural diversity, democracy, human coexistence and the reproduction of life.

The III World Conference on Higher Education has an obligation to debate not only the fate of universities but also the meaning of knowledge. Not to do so is to deny higher education institutions the opportunity of being transformative agents for social emancipatory change.

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Higher Education and South-South (-North) Solidarity Cooperation

Paulo Speller

Abstract

In 2010, Brazil was a pioneer in the international integration of universities by bringing together the countries of Latin America and Africa to form the universities of UNILA and UNILAB, which grew out of the multilateral foreign policy of South-South international integration pursued by President Lula (2003-2011), in cooperation with countries of the Global North, specifically the European Union and its Iberian members Portugal and Spain. Unlike all other Brazilian public universities, both UNILA and UNILAB have been given formal autonomy to pursue internationalisation.

Inspired by initiatives and experiences in international higher education in Africa, Asia, and Latin America and the Caribbean, the case of UNILAB is laid out in detail by the author, who was the institution's first rector up to 2013. Putting particular emphasis on the Community of Portuguese Language Countries (CPLP), the paper shows how UNILAB can make headway in the construction of a collaborative model that involves sub-Saharan countries, especially the subregions bordering on or located in the vicinity of Angola, Cape Verde, Equatorial Guinea, Guinea-Bissau, Mozambique, and São Tomé and Príncipe, as well as East Timor at the crossroads of Asia and Oceania.

UNILAB is making progress toward consolidation. Now 25% of its students come from African members of the CPLP and its training and research programmes adopt an intercultural approach that is rooted in the northeast region of Brazil. From the outset, UNILAB's relationship with GUNi has been beneficial for its internationalisation, and even more progress is anticipated with contributions from the World Higher Education Conference in Barcelona in 2022.

Introduction

Just over 10 years ago, Brazil established two universities with the aim of increasing international South-South integration towards strategic regions for the country. The Federal University for Latin American Integration – UNILA[1] – and the University for International Integration of Afro-Brazilian Lusophony – UNILAB[2] – were created in 2010 at the initiative of former president Lula of Brazil, and were both approved by the national parliament in the same year under federal law.

The UNILA and UNILAB projects were developed by Implementation Committees comprising national and international institutions, appointed by the Brazilian Ministry of Education. I coordinated the UNILAB Implementation Committee between 2008 and 2010, and developed its first campus, the Campus da Abolição, which was inaugurated in 2011 by the Minister of Education, Fernando Haddad, in Redenção, in the state of Ceará. The city had been the first to abolish slavery in Brazil (in 1884), four years before the nationwide "Lei Áurea" (the Golden Law) came into force in 1888.

When UNILAB was formally established in 2010, president Lula invited me to become its first chancellor in accordance with the Implementation Committee guidelines. We used the recommendations of UNESCO's 1998 World Conference on Higher Education as a basis for inspiration. **The strategic role that universities must play in building fairer and more cohesive societies is the key principle that underpins UNILAB's aim to build cooperation and integration, preferably with public universities in Portuguese-speaking African countries (PALOPs), in close collaboration with the Community of Portuguese Language Countries (CPLP).** This includes universities in East Timor, Portugal and Brazil itself, as well as other regions and territories where the Portuguese language is spoken, such as the Macau Special Administrative Region in China and the State of Goa in India. It is worth noting the strong presence of Portuguese-speaking communities made up of Portuguese, Cape Verdean, Brazilian and other immigrants in many countries of the European Union, Canada and the United States. It is also important to acknowledge the mutual understanding between speakers of Portuguese

1. See: https://portal.unila.edu.br/
2. See: https://unilab.edu.br/

and Spanish in a vast area that is home to 700 million people around the world (Durantez Prados, 2018).

The presence of six PALOPs in different regions of Africa adds exponentially to the relationship with English- and French-speaking African countries, in addition to the Bantu languages among others in Africa. Mozambique is a particularly illustrative example, as it is surrounded by neighbouring countries that have adopted English as an official language: South Africa, Eswatini, Zimbabwe, Zambia, Malawi and Tanzania, all formerly British colonies, which explains why Mozambique joined the British Commonwealth in 1995.

The other PALOPs – Angola, Cape Verde, Guinea Bissau, Equatorial Guinea and São Tomé and Príncipe – have similar relations with their neighbours and closest countries, and with the sub-regional organisations they are part of. The same can be said of the other regions that comprise East Timor, Goa, Macau, Portugal, Brazil and the communities of immigrants and descendants of nationals from official Portuguese-speaking countries. **The world map confirms the global presence that UNILAB has the potential to represent in a process of international cooperation and integration that can go beyond the Portuguese language itself.**

GUNI, innovation as a mission

The Global University Network for Innovation (GUNI – http://www.guninetwork.org/), was created in 1999 to promote the recommendations of the first UNESCO World Conference on Higher Education held in 1998. Today, GUNI is also a leading institution in implementing the 2030 Agenda and the Sustainable Development Goals relating to higher education, and in organising the third UNESCO World Conference on Higher Education in 2022.

UNILAB's international spirit was one of its key reasons for joining GUNI from the outset. It is one of six Brazilian institutions that are part of the GUNI Network, alongside 250 members from 80 countries in Latin America and other regions. The original proposal for UNILAB and its implementation since 2011 characterise an institution that is legally and structurally prepared to strengthen international cooperation through collaborative networks. It is truly an original idea of how a university can and should prepare itself to act in an internationalised way at regional and global level, focusing on training, research and extension through shared academic networks, with mutual recognition among the participating institutions.

Shared degree programmes, "sandwich doctorates", and face-to-face or even virtual mobility are examples of successful experiments that are gradually resuming as COVID-19 vaccination programmes progress. Indeed, they must be restarted in order to plan and implement recent bold initiatives involving a range of institutions. Let us look more closely at two other examples in the region.

One is the Virtual Mobility Space in Higher Education – eMOVIES – led by the Inter-American Organization for Higher Education (IOHE), which allows students from universities in the Americas and the Caribbean to take courses in institutions in other countries and receive the corresponding credits.[3]

The National Association of Leaders of Higher Education Institutions (ANDIFES) has also launched a similar programme that allows undergraduate students to take courses at a number of Brazilian public universities.[4]

Internationalization at OBREAL Global

Besides sectoral initiatives, an earlier enterprise was launched in 2017, building on more than 10 years of progress made in South-South-North relations. In 2004, the Observatory of European Union-Latin America Relations (OBREAL) joined with the University of Barcelona to form an association aimed at implementing a European Commission cooperation project with Latin America. OBREAL's original purpose was to help create a network of institutions and organisations from both regions at a time when the emerging coordination mechanisms were still limited; to that end, it brought together 23 academic institutions and research centres in Europe and Latin America, supported by their own networks. In Latin America, OBREAL Global launched the South America Chapter in 2021 using the experience gained through the ALFA PUENTES, ULISES, CAMINOS and MIMIR ANDINO projects in the region, and based on the conclusions of CAMINO A FIESA 2019 and OBREAL's Global Meeting of 11 June 2020 (https://obsglob.org/). A plan was developed to build collaborative networks that would give a more international focus to the university programmes offered in Argentina, Brazil, Chile, Colombia, Peru and Uruguay, and eventually the whole of South America.

The oldest and most well-established public universities have been the first to take part in these and other initiatives, but the collaborative networks are open to a variety of types of institutions, particularly non-profit institutions. In Brazil, for example, public institutions at federal and state level are discussing various initiatives with community universities, denominational universities with different religious bases, public science and technology institutes and municipal education foundations. Furthermore, the new model of internationally integrated universities that began in 2010 through UNILA and UNILAB has provided experience for building international collaborative networks.

3. See: https://oui-iohe.org/es/emovies/
4. See: https://www.ufes.br/conteudo/andifes-lanca-programa-que-permite-mobilidade-de-estudantes-por-meio-virtual

UNILA and UNILAB: deepening international integration

Creating universities that are focused on international integration in Brazil was a bold initiative by former president Lula of Brazil when he reaffirmed and prioritised multilateral relations in his government's foreign policy (2003-2011). He wanted to put an end to the student drift towards the North, in which the African continent was bypassed as a half-way point to Europe.

It should be noted that, unlike the legal instruments that established the other federal universities, the law that established UNILAB makes explicit mention of both the integration and international cooperation between Brazil and the countries of the CPLP, and between UNILA and the countries of Latin America. This was an original and bold initiative by the Brazilian government: the law underlines that "its specific institutional mission [is] to develop human resources to deepen **integration between Brazil and the other member countries of the Community of Portuguese Language Countries** (CPLP) especially African countries (...) and **"international cooperation, through academic exchange and solidarity with CPLP member countries,** especially African countries".

Finding inspiration in international universities

Two previous international experiences provided the inspiration for UNILAB's strategic project. The institutions in question were conceived decades ago and are still fully operational. The first is the University of the West Indies (UWI), an international multi-campus university based in Jamaica, and the second, the International Institute for Water and Environmental Engineering (2iE), located in Ouagadougou, Burkina Faso.

UWI – originally called University College of the West Indies – was established in 1948 in Mona, Jamaica, by the British government to promote higher education in the British Caribbean colonies. Its main campus is in Jamaica, with four other campuses in Trinidad and Tobago, Barbados and Barbuda, with an Open Campus spread across 17 English-speaking countries and territories, as well as intercontinental programmes established with Colombia, China and Europe.

The International Institute for Water and Environmental Engineering has been operating since 1968 in Burkina Faso, which is one of the poorest countries on the African continent with one of the lowest Human Development Index values in the world at 0.305. The Institute trains engineers specialised in water and sanitation, energy and electricity, environment and sustainable development, civil and mining engineering, as well as management and entrepreneurship, meeting student demand from over 28 countries.

In Brazil, the university that was particularly cited and studied by the Implementation Committee was the Federal University of ABC (UFABC), created in 2005 under former president Lula. It was in this context that intense debates were held between 2008 and 2010, and led to the creation of UNILAB, fuelled by meetings and visits to universities in the CPLP countries, with which cooperation agreements were subsequently signed.

While all the federal universities in Brazil chose to make reference to their regional and federal links, with each identifying as the federal university of a particular region or state, in the UNILAB Implementation Committee we proposed to remove any mention of their federal – much less regional – connection. What was the reason for this? Much like the University of Brasilia (known as UnB, to distinguish it from the former University of Brazil (UFJR), but without the F of Federal), which was concei-

ved as a national leader, we agreed that UNILAB should be a national university with no regional links, insofar as it was intended to develop international integration between Brazil and the CPLP countries, especially in Africa. In a similar vein, UNILAB was conceived as a platform through which to support and connect with all the federal universities in the CPLP countries themselves, without weakening the initiatives of each individual institution.

The missions thus proposed with CPLP countries and universities prioritised the effort to formalise effective integration using a joint platform of mutual interest between universities and countries. All the missions were accompanied and supported by the Brazilian diplomatic representations in the CPLP countries, based on the guidelines issued by the Ministry of Foreign Affairs in Brasilia, which worked side by side with the Implementation Committee in Brazil and abroad.

South-South(-North) Mutual Cooperation

Discussions within the UNILAB Implementation Committee, as well as in missions and working meetings in the CPLP countries from 2008 onwards, gave rise to a series of guidelines to boost the university's international integration and cooperation, based on the experiences of existing international institutions.

First, there was a proposal to hold a dialogue on **double degrees for UNILAB graduates with the public universities in the students' country of origin. The issuing and awarding of degrees, diplomas and certificates by two institutions of higher education leads to their mutual recognition, although not necessarily to professional practice, which is normally governed by specific legislation.** It is worth noting the particular spirit of understanding that underpinned the initiative: joint degrees from two universities, recognised in both countries.

Second, **in the ongoing dialogue on the double degree programmes, the curricular itinerary also needed to be decided, taking into account the legislation of the countries and universities involved** and the respective national curricular guidelines in each case. Consequently, training became a shared experience, through the fulfilment of credits and curricular practices in both environments. Academic subjects, teaching, research and outreach projects, internships, professional residencies, or any other agreed or required curricular activities or requirements were considered. Discussions were also held on the option of an additional qualification in a third country where part of this training was carried out, which opened up the possibility of a future qualification that would cover all the CPLP countries in Africa, with the inclusion of East Timor and indeed Brazil, through the future broadening of the Mercosur Educational Sector. Portugal was also added, with the possibility – depending on future dialogues and formalisation – of extending the initiative to the countries of the European Union, and even to the wider European Higher Education Area. It should be noted that in 2009, training through international collaborative networks was already being considered as one of UNILAB's guiding principles, which has now materialised in pioneering initiatives, as we shall see later in this article.

Third, **face-to-face and residential training courses are offered at UNILAB,** in which students and teachers are dedicated full-time to academic training. **Proposals were made to build student residences and housing for visiting teachers, with areas designated for intercultural educational interaction based on the diverse nature of the community.** The same type of admission was also proposed for students residing in Brazil, including from the same region as its first campus in Redenção, in Ceará State, northeast Brazil.

The UNILAB Implementation Committee's proposals were presented at the first World Innovation Summit for Education – organised by the Qatar Foundation in 2009 – to university chancellors and members from Latin America and other regions, and had a broad impact. The presentation was structured around socio-cultural pluralism, the sustainability of the proposal, and educational innovation, and was delivered to nearly 1000 leaders in the field of education of all levels and types from all around the world. The debates focused on the questions: When, how, under what conditions and by whom will a project as bold as UNILAB be carried out?

UNILAB's international integration could not have been realised without the law by which it was established, which set out its mission centred on international training and cooperation. This was the basis on which the **CPLP Network of Public Higher Education Institutions – RIPES –** was created in 2012. The network was supported by the Brazilian Cooperation Agency – ABC – and had links to the Ministry of Foreign Affairs and the CPLP. It received its own budget from UNILAB itself. RIPES **set itself the general objective of strengthening the network institutions in all CPLP countries through the exchange of knowledge, academic mobility, scientific communication and qualified training that would foster the sustainable development of the CPLP member countries**. RIPES is made up of 21 public higher education institutions in the five Portuguese-speaking African Countries (PALOPs) and in East Timor, in addition to UNILAB itself.

UNILAB, with the RIPES network's particular support, has sought to boost the strategic role given to higher education by the UNESCO World Conference on Higher Education held in Paris in 1998 and reaffirmed at the second Conference in 2009, and following the debates and recommendations of the Regional Conferences that preceded them, including the III Regional Conference on Higher Education in Latin America and the Caribbean celebrating the centenary of the University Reform movement of Cordoba in 2018 (Meneghel, Camargo and Speller, 2018). UNILAB aims to remain faithful to the original concept of the University Reform based on an autonomous university understood as a social public good, a universal human right and a duty of the State in building a more just and supportive society.[6]

The Portuguese language, common to all CPLP countries, by no means limits the UNILAB proposal; rather, it adds comparative advantages to interculturalism and plurilingualism, as illustrated by the stimulating presence of students and teachers from almost all regions of the world who are incorporated into different regional contexts and interact with equally diverse regionalities (Sá and Maciel, 2021).

I experienced this challenge in 2012 at the Campus de la Libertad in Redenção during one of the regular meetings held with students from the different CPLP countries. We talked about the communicational role of languages in a globalised world. How would Brazil fit into this process and what was the experience of the students at UNILAB?

First of all, Brazil is not a self-sufficient monolingual island cocooned within the Portuguese language. Perhaps it would be more appropriate to make the L in UNILAB stand for Liberty rather than Lusophony, since it is already globally enriched by regionalisms derived from interculturality and from national languages and those of former colonisers, such as English, French, Spanish, German, Italian and Dutch. Meanwhile, creole languages and Brazilian itself are established as languages in their own right that interact with Portuguese and the others. **The richness that comes from the coexistence of so many languages within UNILAB is immeasurable, and it is equally important to acknowledge the relevance of speaking other languages that will allow the students of today – the citizens and professionals of tomorrow – to interact in an increasingly globalised space,** benefiting from collaborative networks of teaching, research and exchange of ideas and knowledge.

Second, after the experience gained in Brazil through the Science without Borders programme, the Languages without Borders programme showed that it is imperative for students to master a second language. The embarrassment Brazil has experienced in the past is now anecdotal. It was by no means easy to relocate Brazilian undergraduate scholarship holders selected for Portuguese universities when former Brazilian president Rousseff decided to do so in 2013. The Portuguese university chancellors protested, but the shared language between the two countries counted against them – although some believed the exclusion was due to a preference for better universities in other countries. In fact, most of the Brazilian students selected to study in Portugal were relocated to universities in English-speaking countries because they knew the language or began studying it.

This explains why Portuguese-speaking African Countries and East Timor are so well integrated with other regions on account of being trilingual or even polyglot nations that speak a more global language such as English and French in addition to their own national languages. Portuguese may be the sixth most widely spoken language globally, but in Brazil its 211 million speakers make up the vast majority of CPLP inhabitants, who number around 265 million. Brazil is virtually a monolingual nation, despite having speakers of other languages, especially indigenous languages that have descended from European and Asian immigrants and border regions; however, these are numerically insignificant, despite their intercultural significance and the fact that they represent some 250 different languages.

6. See: https://www.iesalc.unesco.org/2018/12/13/informe-general-de-la-cres-2018/

Internationalised mutual cooperation

South-South cooperation, which includes Brazilian universities focused on international integration, requires its participants to make a commitment to mutually beneficial exchanges of ideas. **UNILAB has a great deal to offer students from CPLP countries, but it is also worth mentioning the benefits to Brazil, especially for students who enjoy the rich intercultural experience of internationalisation at home, based on mutual respect for differences and an acceptance of contrasting worldviews.**

South-South-North cooperation has been implemented at UNILAB through the concept of mutual cooperation, which was chosen under the UNITWIN/UNESCO Chairs programme that prioritises solidarity between the parties involved in formulating and implementing actions. The Chairs programme was implemented by the chancellor during the period in which I oversaw the creation of UNILAB, and with the support of the academic advisory board of the university's Implementation Committee. The concept of mutual cooperation applies to South-South relations between countries or institutions seeking mutual benefits between two or more parties, prioritising the exchange of experiences and information, the consolidation of ongoing processes and the design of new initiatives, with the aim of collaborating to support the sustainable development of the parties involved. Safeguarding the interests of the participating institutions should be a permanent concern, and this has been the Chair's priority: in the case of UNILAB, by establishing RIPES as a mutual cooperation network (Munoz, 2016).

Mutual cooperation networks, by analogy to the Solidarity Economy (Singer, 2002), **are characterised by the autonomy of their members, shared values and objectives, voluntary and active participation, circulation of information, democratic leadership and decentralised decision-making at multiple levels.**

The Chair was approved by UNESCO under the close scrutiny of the UNITWIN Programme, and launched at the Campus da Libertad, in Redenção, Brazil, in the presence of Professor Edem Adubra, coordinator of UNESCO's International Teacher Task Force Programme..[7] The Chair was entitled Education and Innovation for Mutual Cooperation, and its emphasis was centred on two priority axes.

On the one hand, the regional Macizo de Baturité education observatory (OBEM) was created, based on a broad and detailed diagnostic study of basic education in the municipalities of the region around Redenção. On the other hand, at international level the Chair prioritised the effective integration of higher education between Brazil and the CPLP countries through the RIPES network, with an emphasis on the diagnostic study of their educational systems and the contribution of the public universities in the countries involved.

More broadly, UNILAB provides a concrete example of the pursuit of international integration among the CPLP countries, as part of Brazil's strategy and collaboration with the region. The legal basis for its action at the international level has proved essential in the creation of RIPES, which can contribute by suggesting approaches to other Brazilian federal public universities that pursue the same objective of international mutual cooperation, which is protected by the university autonomy referred to in article 207 of the Federal Constitution of Brazil and provides inspiration for other initiatives and experiences in other countries and regions. It is clear that in order to achieve its goals Brazil needs a stronger multilateral presence on the international stage. This is one of the best ways to bring about South-South cooperation, both in the law that established UNILAB in 2010 and in its initial operation, with its enormous potential both now and in the future.

Brazil will increase its chances of success if it focuses on platforms that favour internationalised higher education while prioritising and emphasising multilateralism. UNILAB is an example of this, but it also applies to the network of Brazilian federal universities, both in terms of an overall strategy and through increased sectoral or specific projects, such as the OBREAL Global initiative mentioned earlier.

Integration between CPLP public universities, insofar as it potentially includes institutions from Portugal and Galicia in Spain, opens up prospects for a connection between UNILAB – through RIPES – and the European Union. OBREAL Global, initially linked to the University of Barcelona but now independent, has a long experience in managing EU-funded projects in cooperation with universities, higher education organisations and other governmental and civil society organisations, which can help to strengthen a strategic vision based on connection between higher education actors and institutions in different regions, thus favouring regional integration as well as socio-cultural and economic development.

UNILAB has huge potential – both in its institutional design with a normative basis in the university autonomy established under the Brazilian constitution, and in the law under which UNILAB was created – to establish itself as an instrument used to promote the international integration of higher education among countries and regions where Portuguese is an official language. Now that UNILAB holds the UNITWIN/UNESCO Chair for mutual cooperation, with the support of the Brazilian Agency for Cooperation (ABC) it has an important conceptual and pragmatic source of support to meet its objectives.

7. See: http://www.unilab.edu.br/noticias/2012/10/23/solenidade-marca-lancamento-da-catedra-unescounilab/

Future collaborative higher education networks

There are already countless initiatives underway, especially in aftermath of the COVID-19 pandemic that initially suspended face-to-face activities in universities and educational institutions at all levels around the world. To provide a thought-provoking example, I would like to mention a number of other initiatives across several fronts; these are just a few inspiring projects among many that are already underway or being initiated every day.

The University of Barcelona is part of the UNI-ECO collaborative network of five universities in various EU countries, led by the University of Montpellier. They offer a shared Master's programme in sustainable development with an international curriculum, supported by the Mediterranean Universities Union – UNIMED – and the European Centre for Studies and Initiatives in Palermo – CESIE[8]. The 2030 Agenda and the Sustainable Development Goals have inspired this and many other initiatives. This project was launched by the European Commission the context of the Erasmus+ Programme, but its foundations and experiences are applicable globally, as the CESIE centre has connections in almost 80 countries.

The second initiative has set itself bold challenges, connecting three non-EU English-speaking universities in the United Kingdom, Australia and Canada. The initial aim was to boost bilateral relationships between these universities in the field of research into global challenges through a new post-COVID-19 alliance for higher education, while promoting innovative online initiatives that benefit students. In keeping with the goals of the alliance, a dialogue has already begun, seeking high-impact interaction with the global South.[9]

Third, I would like to mention an initiative that began in Latin America after the first UNESCO World Conference on Higher Education in 1998. It is known as the Latin American Virtual Campus (AULA CAVILA), and can be traced back to an idea that originated at the Extremadura Centre for Studies and Cooperation with Ibero-America (CEXECI) and the University of Extremadura, in Spain. Various universities were brought together under the leadership of Dr. Hugo Juri, current chancellor of the National University of Cordoba, in Argentina, and the idea came about for the Ibero-American Virtual University – UVI.[10]

One noteworthy trend that goes beyond collaborative networks between universities is the system of collaborative networks between different governmental and civil society organisations and one or more universities in a specific area, with the aim of promoting science and technology. A good example of this is the Hub b30, a project carried out in Catalonia around the old B30 road, through a collaboration between economic agents, public administrations and generators of knowledge and R&D. The initiative aims to promote socio-economic development and is coordinated by the Autonomous University of Barcelona.[11]

All of these examples illustrate the importance of committing to building more sustainable, just and supportive societies through higher education, which is a social human right realised through the State and in which universities assert their strategic role in achieving a fairer world and thereby meeting the Sustainable Development Goals established under the 2030 Agenda.

8. See: https://www.ub.edu/web/ub/es/menu_eines/noticies/2021/10/025.html

9. See: https://www.timeshighereducation.com/news/manchester-melbourne-and-toronto-launch-post-covid-alliance
10. See: https://www.cavila.org/
11. See: https://ambitb30.org/es/el-hub-b30-exemple-europeu-per-impulsar-la-innovacio-territorial/

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Arts and cultures for mainstreaming higher education

Sandra Torlucci

Abstract

In recent years there has been a clear repositioning of the arts and artistic production within the academic sphere. This movement has spread to the regional and international scenes and is having repercussions in the university system. In this context, this article aims to reflect on artistic production as a form of knowledge production. The following questions have guided my reflection: to what extent does conceiving the arts in terms of research transform the notion of arts, science and technology? In what sense is this already thought of, acted, represented, and institutionalised as knowledge that reveals an immanent process in both the arts and science? What knowledge is involved? How is it linked to the new conditions of contemporary production in the framework of the so-called economies of knowledge, or cognitive capitalism? When we speak of artistic research, and not of research about art, we are prompted not only to reflect on the socio-political and economic conditions that enabled this reconfiguration of mutually exclusive semantic fields, but also to be alert to the ideological assumptions that the new connections between art, science and technology impose in the context of current socio-economic configurations.

Over the past 15 years there has been a repositioning of the arts and artistic production within the academic sphere. This movement has spread to the regional and international scenes and is having repercussions in the university system.

On that basis, the question that needs addressing is whether artistic production can be conceived as the production of knowledge and research. Furthermore, to what extent does conceiving the arts in terms of research transform the notion of arts, science and technology? In what sense is this already conceived, acted, represented, and institutionalised as knowledge that reveals an immanent process in both the arts and science?[1] What knowledge is involved? How is it linked to the new conditions of contemporary production in the framework of the so-called economies of knowledge or cognitive capitalism?

When we speak of artistic research, and not of research about art, we are prompted not only to reflect on the socio-political and economic conditions that enabled this reconfiguration of mutually exclusive semantic fields, but also to be alert to the ideological assumptions that the new connections between art, science and technology impose in the context of current socio-economic configurations.

Research in the arts has thus become an area of opportunity for exploring comparative analyses and alternative research models that shed new light on the intersections between perception, attachment and thought.

We can broadly identify two positions that are debated in the Latin American region: on the one hand, a critique of the growing control over the production of knowledge through accreditation mechanisms and standards that impose their methodological schemes and evaluation criteria on artistic research, thereby reducing its critical influence; on the other hand, a conception that places the emerging forms of contemporary art as performativity, immateriality and creativity at the epicentre of the socio-economic transformations of the knowledge society. In both cases, the role of education and art institutions must be examined in the light of the impact of artistic production on the knowledge economy.

The first position describes the fundamental role acquired by academic institutions in the growing commodification of knowledge: this has occurred in the shift from a conception of value as the objectification of material labour to the idea of innovation and knowledge as immaterial "raw material" for the creation of value in the new phase of capital. Artistic production

1. At the dawn of modernity, when modern science became established, art and science separated. Art became the domain of direct experience, unmediated by reason and immediately felt. Thus, experience and certainty have become incompatible and mutually exclusive; experience, now the heritage of art, has been permanently banished from the field of scientific knowledge and, due to the ideological operation that makes the universal coincide with the particular, from the field of knowledge in general.

– traditionally located on the fringes of academic institutions and at the opposite end of the scientific model – remains a space of freedom and resistance. According to this position, including artistic production in the dynamics of institutional research models would cause the creative powers of art to be depleted: its power of transgression and discontinuity of the norm.

In our view, the second position addresses the problem in a more complex and dialectical way. In principle, it is a question of thinking about how art – the aesthetic regimes that validate it and the practices in which it is deployed – is involved with economic and social processes. It is about challenging the discourse that, having become the custodian of a supposed critical purity of works of art, merely validates the ideological model that deepens its own uselessness and social marginality.

It is also a question of postulating the intertwining of art with its material conditions of existence; for, as W. Benjamin (2007) pointed out, there is no evidence of culture that is not also evidence of barbarism. All these questions form a backdrop to our professional practice as teachers, researchers and actors in the area of university management; they guide us and present us with new challenges when it comes to conceiving and designing strategies and implementing projects linked to arts education.

We believe it is important to identify the difficulties that arise when formalising higher educational processes in the different artistic disciplines, and to incorporate criteria for technical quality, evaluation and research, provided that these processes are explicitly accepted as a means of resisting the models and standards used by a system of university accreditation and professionalisation that tends towards homogenisation and an internationalisation that is subordinate to the dominant models of knowledge production, as was stated in CRES 2008 and CRES 2018.

Education and artistic research in higher education must therefore create strategies to resist the encroachment of a university project that is subject to the demands of the World Trade Organisation (WTO). To endorse autonomy as a right and a necessary condition for unrestricted academic (and artistic) work, it is first necessary to understand that autonomy is the condition for the critical involvement of knowledge with the social and cultural contexts to which it belongs.

As we highlighted at the beginning, the long overdue prioritisation of university arts education rectified an acknowledged shortcoming but, at the same time, served to highlight the still marginal and secondary place traditionally given to the arts within the university system. There is still a great deal of work to be done on this point. However, it is worth noting that the arts feature prominently in the Declaration of the III Regional Conference on Higher Education in Latin America and the Caribbean (2018), which highlights that "Science, arts and technology should become pillars of cooperation tending towards an equal development of the region with solidarity, based on processes that lead to the consolidation of an independent and politically sovereign bloc". To that end, a plan of action has been developed, proposing an epistemological break that "implies the recognition of the strategic role played by the arts and culture in the production of knowledge with social commitment, and in the fight for cultural sovereignty and multicultural integration of the regions." (CRES 2018).

To move further in that direction, we must either try to make education and artistic research fit into the criteria established for higher education, or we establish the arts in Latin American higher education as a space for developing concrete dynamics and processes, links and practices that reshape both the stereotypical mechanisms of the university model and conventional artistic production. An in-depth study is required that recognises both the tradition of specific practices linked to the training of artists in different fields and the heterogeneity of the processes and competences included in the term "art", so as to enrich the debate on the role played by artistic research throughout Latin America.

Arts education is a complex space, which is precisely why it is so interesting; it is more of a contradictory relationship – a synthesis-division – than a homogeneous field that can be easily defined. It tends to resist definition. Art is an activity in which artists explore the possibility of creating a reflection on sensations that avoids repetition. It is opposed to the mere reproduction of knowledge that is currently imposed through the dynamics of accreditation and standardisation. Art is an act of resistance because it expands the limits of what is possible and tries out potential ways for us to exist (Deleuze and Guattari, 1993).

In order to assert an alternative way of thinking about art, it is first necessary to dismantle the old dichotomy between a reflexive and logical knowledge on the one hand, and a practical and technical knowledge on the other; between an objective, intelligible knowledge, subject to systematisation and evaluation, and the subjective mystery of that which is sensitive and emotional. It is also necessary to recognise the extent to which we are subject to the imagery that reduces artistic creation to the sphere of the private, of individual aptitudes and subjective expression. It is essential to incorporate artists into research teams, as they produce a form of knowledge that differs from that of scientists and technologists: the production of affections and precepts. This is the creative aspect of discovery in knowledge production, without which innovation is not possible.

Finally, it is vital to recognise the right to the arts in education as a whole, not only in higher education. If we are to create a developed, sustainable and better world, arts education cannot be overlooked, as it builds citizenship and prevents discrimination and oppression. Artistic creation is never an individual matter; like education, it is primarily a social and cultural issue: a collective creation. Artistic production in education at all levels helps people to learn to think as a community and to develop a way of thinking that emerges on the fringes – in that undefined space that allows the "other" to be acknowledged as similar through an affirmation of what is different. It is perhaps this utopian dimension that we must learn to teach.

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