

## Impact of COVID-19 on higher education

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# Summary

This report discusses major challenges faced by higher education around the world during the COVID-19 pandemic, particularly examining the impacts of the crisis on teaching, student learning, research, finance, and international education. The outbreak of the pandemic since early 2020 has changed the world in an unprecedented way. Higher education institutions (HEIs) are severely affected by this global health crisis across the globe; however, the impacts have varied across different regions, institutions, and social groups.

Critical reviews show that developing countries and disadvantaged groups suffer most from the sudden shifting to emergent online learning because of a lack of access to tablets, computers, and the internet. Students from less privileged socio-economic backgrounds have faced larger learning losses than have their peers in relatively economically advanced countries, further translating into deeper losses of lifetime earnings and economic losses to nations. Nonetheless, the shift to online learning also brings opportunities for faster curriculum development in some developing countries because of the rapid circulation of online education.

The pandemic has also interrupted the normal operation of research activities. Early career researchers are facing serious setbacks in launching their research agenda when the pandemic places restrictions on lab work, travelling and research ethics. The lack of in person interactions not only influence the knowledge circulation among researchers and students but also challenge their mental well-being. The gloomy job markets, together with the political and social chaos during the pandemic, create challenges to early career researchers, faculties in temporary contracts and recent graduates trying to find a job or secure their first contracts.

The internationalization of higher education has been greatly influenced by border closures and the rising tide of nationalism. The wellbeing of international students has been largely neglected by national policies during the pandemic, and rising discrimination has pushed some students to study at home or change their destinations. The changes in international student flows can have significant effects on Anglophone countries that rely on international students for income. However, extant literature suggests that elite universities are less likely to be influenced, while institutions with lower global rankings will face tremendous challenges for governance. This report also discusses and highlights major policy implications for managing higher education in support of the Education Agenda 2030 in the post-COVID-19 crisis period.

# Acknowledgements

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With the purpose of producing updated analysis and recommendations for the 3rd World Higher Education Conference (WHEC2022), UNESCO organized the Technical Expert Group (TEG), whose members were tasked with preparing background documents on each of the main themes of the Conference. Experts participating in the TEG included César Guadalupe, Dag Olav Hessen, Susanna Karakhanyan, Achim Hopbach, Mpine Makoe, David Mills, Ka Ho Mok, Kilemi Mwiria, Jamil Salmi, Sylvia Schmelkes, Francesc Pedró, Damtew Teferra. This is one of the TEG's background documents, which respectively approached the following themes:

- Impact of COVID-19 on higher education
- Higher education and the SDGs<sup>1</sup>
- Equity, inclusion, and pluralism
- Quality and relevance of programmes
- Academic mobility in higher education
- Governance in higher education
- Financing higher education
- Data and knowledge production
- International cooperation to enhance synergies
- The futures of higher education

The following UNESCO focal points participated in or provided support, at different moments, to the TEG's activities: Dana Abdrasheva, Daniele Viera, Phoebe Kirkup, Paz Portales, Victoria Galán, Huong Nguyen, Hassmik Tortian, Qingling Kong, Peter Wells, Harold Mera, Takudzwa Mutize, Talal El Hourani, José Antonio Quinteiro, Keith Holmes and Emma Sabzalieva. The TEG's activities were directly coordinated by José Luis Guzmán.

The TEG met online four times throughout 2021 (March 24, May 19, July 21, and September 8) and held an in-person meeting in Barcelona on 29-30 November 2021. Besides extensive literature review, the process of elaborating the documents included 24 online consultation meetings facilitated by the TEG members. These meetings involved more than 180 experts or stakeholders from all regions of the world. In addition, the TEG members considered comments provided by diverse reviewers for each theme and a technical team of UNESCO specialists reviewed the final versions.

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1. A synthesis based on the report of the UNESCO Global Independent Expert Group on the Universities and the 2030 Agenda (EGU2030): Knowledge-driven actions: Transforming higher education for global sustainability (2022). The full report can be found here: <https://unesdoc.unesco.org/ark:/48223/pf000380519> (Accessed 9 February 2022.)

# Acronyms

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ACU	Association of Commonwealth Universities
BAME	Black, Asian and minority ethnic
C19 ISWS	The COVID-19 International Student Well-being Study
EI	Education International
ECRs	Early career researchers
TEG	Intergovernmental Panel on Climate Change
Gbps	Gigabits per second
GDP	Gross domestic product
HE	Higher education
HEIs	Higher education institutions
IAU	International Association of Universities
IFS	Institute for Fiscal Studies
IIEP	The UNESCO International Institute for Educational Planning
MP	Member of parliament
NAFSA	Association of International Educators
NGO	Non-governmental organization
R&D	Research and development
SURE	The Sustaining University Research Expertise Fund
STA	Science & Technology Australia
Stop AAPI	Hate Stop Hate against Asian American Pacific Islander Communities
SMH	Sydney Morning Herald
UCAS	Universities and Colleges Admissions Service
UIS	UNESCO Institute of Statistics
UNESCO	United Nations Educational, Scientific and Cultural Organization

# Presentation

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Before the outbreak of the COVID-19 pandemic, more than 258 million<sup>2</sup> children, adolescents and youth were out of school in 2018 while 773 million adults were illiterate (two thirds of them women)<sup>3</sup>, fuelling poverty and marginalization (UNESCO, 2021). The unprecedented global health crisis caused by the widespread of the COVID-19 pandemic has adversely disrupted higher education (HE) development, particularly in terms of teaching / student learning, research, finance / governance, and international education across different parts of the globe though the degrees of impact varied. By critically analysing the impact of the present global health crisis on HED from international and comparative perspectives, we must realize that not all people have the privilege to enjoy education/schooling amidst the pandemic. The present report offers an overview of the tremendous impact of COVID-19 on HED. It focuses on examining four aspects, namely: (i) teaching and learning, (ii) research, (iii) finance, and (iv) international HED.

Based upon desktop research and consultations with experts from different regions of the world, this report was written in 2021, to investigate the impact of the pandemic on the global HED sector over the previous year. HED is vital for producing research and training students for national economies. HED is also an important channel for individual development, equity of opportunities and achieving the Sustainable Development Goals (SDGs). The COVID-19 pandemic has fundamentally changed the normal operation of the HED sector and has brought major challenges to the future development of higher education institutions (HEIs). One year after the outbreak of the pandemic, some countries have managed to gradually resume normal operation of HEIs, but many remain struggling, causing high inter-regional inequality. Students, recent graduates, researchers, and faculty are facing a difficult time for development.

The global HED sector is striving to transform challenges into development opportunities. Stakeholders such as universities, educational administrators and governments are using a multipronged approach to cope with the complexities of the situation and minimize the negative impact of the COVID-19 crisis. This report summarizes the major challenges faced by HED around the world and highlights opportunities in transforming teaching and learning, research, finance, and internationalization during and after the present global health crisis. It highlights the importance of international cooperation and inter-continental collaboration in promotion of the UN 2030 Agenda, aiming to 'ensure inclusive and equitable education and promote lifelong learning opportunities for all' by 2030.

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2. UIS. <http://uis.unesco.org/en/topic/out-school-children-and-youth>

3. UIS. <http://uis.unesco.org/en/topic/literacy>

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# 01.

## Impacts of COVID-19 pandemic on university teaching and student learning

The spread of the pandemic has dramatically changed the global landscape of HED. The closure of campuses around the world has led to the wide adoption of online learning, teaching, and assessment. Although supported by various tools and technology, such a dramatic shift is still causing major challenges to students, staff, and university management. Against this background, this section explores the experiences and challenges faced by students, academic staff, and universities. It also discusses the implications for HED when teaching and student learning are delivered through online platform.

## 1.1 • Challenges in the implementation of online teaching and learning for HEIs

COVID-19 has greatly disrupted the normal teaching and learning practices in HEIs. In response to the pandemic, nearly all regions and countries closed their educational institutions in April 2020, leaving approximately 220 million tertiary education students without physical access regardless of location and national origin. Table 1 shows the status of disruption in both April 2020 and 2021 by national income level. Although the pandemic caused campus closures around the world in 2020, it seems to have had more lasting effects on low-income and lower-middle-income countries. When universities and other tertiary education institutions in high-income and upper-middle-income countries gradually resumed in person learning, over 84 per cent of tertiary education students in lower-middle-income countries were still out of school in April 2021. Table 2 shows the distribution of affected HED students in April 2021. South Asia, the Middle East and North Africa are the regions in which most universities were still closed at this time, and approximately 46 per cent of students in Europe and Central Asia are in countries where the universities remained fully closed.

**Table 1. Out-of-school tertiary education students in April 2020 and 2021 by national income level**

National Income Level	Apr- 20			Apr-21		
	Total tertiary education students	Out-of-School Tertiary education students	%	Total Tertiary education students	Out-of-School Tertiary education students	%
<b>High income</b>	54,103,566	53,479,089	99%	51,673,579	12,404,741	24%
<b>Upper middle income</b>	97,934,594	97,493,490	99.5%	102,104,523	23,197,242	23%
<b>Lower middle income</b>	66,421,264	65,358,490	98%	58,780,648	49,567,799	84%
<b>Low income</b>	4,146,072	3,808,691	92%	3,359,196	1,176,839	35%
<b>TOTAL</b>	222,605,496	220,139,760	99%	215,917,946	86,346,621	40%

Source: World Bank, 2020, 2021

**Table 2. Estimated students affected by school closures (as of April 2021) by region**

World Region	Total tertiary education students	Out-of-school tertiary education students	%
<b>East Asia and Pacific</b>	72,023,158	16,585,403	23%
<b>Europe and Central Asia</b>	38,594,914	17,732,488	46%
<b>Latin America and Caribbean</b>	27,417,286	5,525,576	20%
<b>Middle East and North Africa</b>	7,127,825	3,686,435	52%
<b>North America</b>	20,565,373	0	0%
<b>South Asia</b>	41,882,841	39,634,130	95%
<b>Sub-Saharan Africa</b>	8,306,549	3,182,589	38%
<b>Total</b>	215,917,946	86,346,621	40%

Source: World Bank, 2021

For HEIs of different income levels and regions, the promotion of online teaching and learning faces some common challenges, including demand for improved infrastructure to support online education, limited support for students and staff in teaching and research, pressure for quality assurance and assessment fairness, diminished financial supports for university development and demand to improve local HED because of decreases in outbound international mobility. Below is a list of long-term challenges to confront:

- Increasing inequality in access to HED and retention because at-risk students are more likely to fall behind during the pandemic.
- Reduced public funding for HED.
- Reduced household funding for HED.
- Permanent closure of programmes, resulting in permanent loss of human capital in academic and administrative positions.
- Quality assurance issues when more programmes are moving to online.
- Negative impacts on student welfare and interpersonal skills development.

The teaching and learning activities of HEIs have been affected by financial cuts during the pandemic. The dropout rate of students in some countries, especially developing countries, is increasing. In 2020 alone, UNESCO projected that tertiary education was likely to experience the highest dropout rate than any other level and a 3.5 per cent decline in enrolment, resulting in 7.9 fewer students. The greatest impact was for South and West Asia and Sub-Saharan Africa. Governments cut financial support for the education sector as they struggle with economic losses caused by the pandemic (Section 3 provides more details), and the sustainability of high tuition fees is challenged as different types of free learning content is available online. Over 32,000 undergraduate and postgraduate students in Kenya are expected to be eventually deregistered because of funding cuts by the Kenyan government (Odhiambo, 8 April 2021). Anglophone HED systems with high dependence on international students have been particularly affected (Welch, 2021). Government cuts in funding, together with the loss of fee-paying students, could result in further stratification among universities in these countries, as the most elite ones are less likely to be influenced (Dolton, 2020). HEIs with more temporary staff will likely implement larger savings, but these measures may affect teaching quality and student learning with reduced number of regular staff attending to student learning needs (Dayton & Waltmann, 2020). Therefore, funding cuts may have a greater impact on the teaching and learning activities of non-elite universities.

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[4.<https://en.unesco.org/news/secretary-general-warns-education-catastrophe-pointing-unesco-estimate-24-million-learners-risk>](https://en.unesco.org/news/secretary-general-warns-education-catastrophe-pointing-unesco-estimate-24-million-learners-risk)

## 1.2.

### Students' online learning experience during the pandemic

Online education also constrains students' educational experience in many aspects. Although some students expressed some interest in pursuing their degrees online, the quality of online education is in question. In a survey conducted in one Hong Kong public university, only 26 per cent of the students were satisfied with their online learning experiences, and online learning is reported to have lower effectiveness in terms of student acquisition of skills and knowledge and fewer opportunities for students for interactions when compared with face-to-face classes (Xiong, Jiang and Mok, 2020).

A survey conducted among United Kingdom (UK) undergraduates shows that although over half of them were very or quite satisfied with online learning, only 21 per cent of them expect all learning experiences to be online (Hewitt, 2020). Mozambique, like several other countries in the region, faces the similar dilemma of the need to guarantee the minimum learning conditions for students during the crisis. Another survey with 1,787 students shows that the major difficulty encountered by students is not related to the use of electronic platforms but to the costs of acquiring internet data packages (Zunguze and Tsambe, 2020). Students in other countries in the developing world also suffer from connectivity issues because of the poor infrastructure to support teaching / learning through the online platforms like Lebanon, while many other developing countries experience financial difficulty to support students to study online (Mekdach, 2021; Marquina, 2021). In addition to PC ownership, a good online learning experience could be affected by other hurdles (see Annex 1).

Across the globe, lack of computer access is a commonly cited challenge when discussing the experience of disadvantaged students in online learning, however, research suggests tertiary education students are more likely to own personal computers than school pupils regardless of socioeconomic status. For example, while only 34 per cent of school-age students in Indonesia have a computer to use for their schoolwork, over 98 per cent of Indonesian university students own at least two personal computing devices such as laptops and smartphones (Pratama, 2017; Mekdach, 2021). While we are glad to see students from relatively resources-enabled regions own their computing devices, we must also note many more students from less developed economies do not enjoy the same privilege. Hence, the absence of computers can still be an issue

for tertiary education students from less socio-economically fortunate backgrounds (Mahamedbhai, 2021).

Students without the necessary and sufficient infrastructural support would simply encounter high difficulty in adjusting to digital learning. The income gap thus further influences the educational attainment of students within countries and around the world. Access to the Internet not only influences student learning experiences but also links to national economic growth, knowledge dissemination and overall human capital development. A recommended bandwidth for schools in the United States in 2017–18 was 1 Gbps (Gigabits per second) per 1,000 students; for 2020–21, the suggested target is 3 Gbps per 1,000 students (Fox and Jones 2016). Such targets were set based on using common education resources such as online videos and platforms. Teaching and learning of universities in countries where high-speed broadband internet is not available will be difficult to carry out, despite the spill overs of high-quality online education resources during the pandemic. In some African countries, universities get 10 Mbps for 60,000 students, which is far from sufficient to support online learning and slows down normal education activities. Meanwhile, the urban-rural disparity has intensified across the globe when measuring the access to high-speed internet, which severely limits the ability of students to engage in classes in rural areas (Soria, 2021).

The pandemic has also led to the rise in the drop-out rate of tertiary education students as a combined result of financial pressures, postponement of graduation and uncertainty of the job market.

As families face substantial financial pressure and students continue to fall behind, the drop-out rate is expected to increase (Azevedo et al., 2020). While academic guidance works less well via distance modes, providing career guidance and mental counselling to students is more difficult. In particular, private HEIs across different parts of the globe face drop-out of students, inevitably leading to closures especially the developing countries like Africa and Latin America (see Annex 2). In addition, at-risk students are more likely to fall behind while participating in online education. It should also be noted that location (rural versus urban), disability status, caregiving status, and other factors also adversely compromised students' experiences during the crisis (Soria, 2021). Suspension of face-to-face teaching, adoption of online learning and school operation with diminished social interactions have affected the psychological well-being of students. The struggle to adjust to the 'new normal' of education alongside the weakening or even breakdown of social activities has resulted in students becoming vulnerable to psychological distress (Amoah and Mok, 2020).

## 1.3.

### Online teaching and challenges for quality assurance

The migration to online teaching is not easy for faculty and staff because not all academics have previous experience in delivering courses online. Institutional support thus becomes essential in ensuring a smooth transition. However, universities in developing countries and community colleges have a limited workforce to support online teaching. When the migration begins, these universities are less prepared to move courses online because only a few of them have teaching and learning centres.

For academics working in developing countries, finding adequate online learning materials can be difficult, especially when the teaching materials are not available in the language of instruction. The emergency online transition causes profound professional and personal disruption to academics. For example, some academics were dismissed by their universities to cut costs in some UK HEIs institutions, endangering their teaching and research continuity (Watermeyer et al., 2020). Such measures place further stress on the already hyper-competitive academic job markets and lead to the risk of brain drain. Many universities also fail to provide clear and consistent guidance to staff during the pandemic, complicating the institutional operation. While there are many challenges to online education, some see the online migration as an opportunity to transform existing HED higher education systems. The online migration could make HE higher education more affordable as some free educational content will be provided online and made accessible to the masses. Moreover, such a shift could also transform the existing pedagogic credentialism in the professionalisationprofessionalization of academics as more elaborative evaluation methods were used to replace examination during the pandemic.

However, the consultations conducted across the five continents when this report was prepared, one common challenge being raised was about the problem of online assessment. International experts are concerned about quality assurance of teaching / student learning, doubting whether the planned learning outcomes could be achieved. Equally important, we must note that teachers and students from the developing world encounter far more difficulty in assuring quality in teaching and learning, particularly when they have only limited training and are less prepared for online teaching (Wanyama, 2021; Mikdash, 2021). Other experts also highlight the “pipeline effect”, particularly when many secondary schools have also resorted to online teaching and learning during the pandemic with hardly any experience. Undoubtedly, lowering academic standards and less satisfactory student experiences would affect the new intakes of students to higher education (Mahamedhai, 2021). Other challenges complicating online learning are also highlighted in Appendix 3 and Appendix 4.

# 02.

## Impacts of COVID-19 pandemic on research

The COVID-19 pandemic has also disrupted research activities due to restrictions on mobility and closure of campuses, which hinder international research collaborations and the normal function of labs and research activities. Although some positive effects have been brought by the shift to online collaboration, the pandemic has had unequal impacts on different countries, institutions, and researchers. This section discusses these challenges faced by researchers and universities across different regions of the world and the possible positive effects of new opportunities brought by the changes.

## 2.1.

### Regional Inequality and Global North-South Collaboration

International collaborations have surged since 2015, and the pandemic has witnessed more collaborative efforts in responding to the global crisis. The UNESCO Science Report 2021 shows that international sciences-related investment increased by 19 per cent from 2014 to 2018, and the spending has been further stimulated during the pandemic. However, huge regional inequalities are observed. The G20 still accounts for over 90 per cent of the global expenditure on research, researchers employed, and publications and patents. Four out of every five countries still devote less than one per cent of Gross Domestic Product (GDP) to research and development (R&D), indicating heavy reliance on foreign technologies. The number is worse in Sub-Saharan Africa, where just 0.5 per cent of GDP was devoted to scientific research. Although significant increases in R&D are occurring globally, regional inequality has worsened. The US and China alone account for approximately 60 per cent of the world increase from 2014 to 2018, and R&D as a share of GDP decreased in some regions like Latin America, Central Asia, and South Asia.

**Table 3. Investment in R&D as share of GDP by region, 2014 and 2018 (%)**

Region	2014	2018
North America	2.63	2.73
East and Southeast Asia	2.03	2.13
Europe	1.72	1.78
West Asia	0.94	1.37
Latin America	0.73	0.66
South Asia	0.64	0.6
Sub-Saharan Africa	0.49	0.51
Arab States	0.48	0.59
Central Asia	0.17	0.12
World	1.73	1.79

Source: UNESCO Science Report 2021.

Developing countries are reported to drop-off from COVID-19-related international collaborations because of lack of resource support (Fry et al., 2020; Baker, 2020). A collective policy effort may be needed to bring developing country participants back into international collaboration. A survey shows that compared with other continents, Africa is the region with the highest percentage of HEIs where research has completely stopped, and Africa is likely the region where HEIs are the least prepared and with fewer resources to face the crisis (Marinoni, Land and Jensen 2020).

Countries around the world have started the transition to digital and green economies prior to the outbreak of COVID-19, and the pandemic has demonstrated the value of digital technologies in an emergency. The collaborations between universities in the Global North and South were traditionally dominated by face-to-face collaborations. The aim of such collaboration is to improve local HED capacity and research and contribute to development agendas at both the local and global levels. However, the pandemic has put universities around the world into crisis mode with international collaboration placed on hold. With universities and stakeholders gradually adapting to the new normal, international collaborations are gradually resuming. International mobility was substituted by virtual activities such as Zoom meetings, webinars, and Skype calls. However, virtual cooperation has its limitations, such as:

- Socio-economically vulnerable groups tend to be less virtually connected, leading to unbalanced participation in the Global South.
- Problems and misunderstandings are less likely to be resolved at a distance (i.e., without face-to-face interaction).
- Implementation of cooperation projects can be delayed.
- Contextualizing via a distance mode is difficult.
- Underspending in the funding schemes may lead to future funding cuts.

However, virtual cooperation also brings some possible positive effects:

- Virtual cooperation saves travelling, which is more environmentally friendly.
- Some formerly disadvantaged groups and individuals have easier and greater access to university programmes, international cooperation, and virtual networks.
- Virtual collaboration allows faster circulation of new knowledge and practice.

## 2.2. Disproportionate Impact on researchers

The COVID-19 crisis has disrupted research activities due to restrictions on scholar mobility, resulting in obstacles for research collaboration, the closure of labs and the shift to remote collaboration (IAU, 2020a). The closure of labs and travel restrictions mean that researchers in many disciplines are unable to continue their experiments or field investigations except when remote lab work and collaborations are possible (Salmi 2020). Regarding the impact of COVID-19 on scientific research, a survey carried out by the Association of Commonwealth Universities revealed that almost 80 per cent of respondents saw their research activities affected by the crisis, but 69 per cent of them reported that they were able to move their research online by conducting online data collection, preparing grant applications and writing up their findings (ACU, 2020).

According to a global survey conducted by the International Association of Universities (IAU) in 2020 (Figure 2.1), 41 per cent of HEIs are involved in COVID-19 research, almost all of whom are researchers contributing to public policy development. The IAU survey also shows that 83 per cent of HEIs cancelled international travel and 81 per cent of HEIs cancelled or postponed scientific conferences. Scientific projects are in danger of not being completed at more than half of HEIs (52 per cent), while 21 per cent of HEIs scientific research has completely stopped (Marinoni, Land and Jensen 2020). While countries are being locked down, science has become more open. Since the outbreak of COVID-19, an increasing number of funding bodies, publishers, journals, institutions, and researchers are embracing open science. Publications, courses, archives, and databases are shared online freely, openly, quickly, and widely (Xu, 2020). While research benefits from conferences, site-based visits and exchange of personnel and large laboratories and institutes are inhibited by social distancing protocols, most forms of research cooperation can be sustained for a time online (Marginson 2020a).

**Figure 1. How has COVID-19 affected research at your institution?**



Source: Marinoni, Land and Jensen 2020.

The pandemic impacts academics disproportionately, with early career researchers (ECRs) suffering the most. ECRs face serious setbacks in launching their research agenda when the pandemic places restrictions on lab work, travelling and research ethics. As a result of funding cuts and revenue loss, fewer academic positions are available, particularly disadvantaging those without tenured positions (Xu, 2020). For young researchers who work under time pressure to complete projects within a certain period to remain eligible for employment at universities, the pandemic has put a hold on their experiments, trials, and surveys (IAU 2020b). This delay will have significant career-trajectory impacts on doctoral students and postdoctoral scholars, especially those without other means of support (Lynch, 2020).

Research related to COVID-19 and gender also indicates the impact varies between men and women researchers. In Mexico, for example, women researchers have greater differential effects especially in their mental and physical health (Infante Castaneda et al., 2021). Due to their traditionally imposed responsibility of taking care of the family and children, the research work of women researchers is more affected by the pandemic than that of men. A survey estimated that the proportion of papers researching COVID-19 related topics with a woman first author was 19 per cent lower than that for papers published in the same journals in 2019 (Andersen et al., 2020). Other research examining the role of female academics' career development in HED reveals that women are already relatively disadvantaged, especially in taking up senior management positions. The COVID-19 pandemic, indeed, has put many female researchers in an even less advantaged position in terms of their career development (Gabster et al., 2020; Vincent-Lamarre et al., 2020). Emerging evidence suggests exacerbated inequality within academia which is not only showcased by a decline in research productivity within certain groups but also by negative impacts on their job security, career advancement, physical health, and mental wellbeing (Xu, 2020).

## 2.3. Energized knowledge system with challenges

Despite the negative impacts discussed above, the pandemic has energized the global knowledge system by speeding up COVID-19 related research and innovation. Before the pandemic, very few established journals were prepared for quick peer-reviews and rapid responses to emerging knowledge. The pandemic-related research has forced global academic communities to be more responsive. Scientists around the world share research and data within and beyond their borders to eradicate the disease. Governments and international organizations rapidly establish committees to manage the crisis and accelerate vaccine-related research. The pandemic has witnessed an energized knowledge system in which the public and private sectors work together to develop vaccines and much needed equipment such as lung ventilators, medicines, and masks. Although the rapid development of vaccines against COVID-19 is an extraordinary achievement, some citizens may be distrustful because this pace does not align with their previous experience. Against the background of mixed messages on the Internet and political confluences, public trust in science has eroded in some contexts as evidenced by vaccine hesitancy. A list of major challenges faced by researchers and institutions is as follows:

- Public trust in science was eroded by politicization and misinformation.
- HEIs and researchers that rely on external funders may suffer from resource constraints because of the economic woes of the funders.
- Early career researchers face serious setbacks in launching their research agenda when the pandemic places restrictions on lab work, travelling and research ethics.
- Increased restrictions on academic freedom in some countries.
- Institutional autonomy is eroded as a combined result of political-economic changes.
- The high price of access to scholarly articles and books creates obstacles, preventing the fast circulation of knowledge, especially to developing countries.

When reflecting upon how the COVID-19 crisis affects research and knowledge transfer-related activities undertaken by HEIs, a point that deserves attention is how various factors such as their sources of funding, size, and missions/roles, would have affected their coping strategies on research/knowledge transfer activities. While some countries with stronger resources have invested more to capitalize on the crisis environment for conducting more research, some smaller colleges with limited funding have had their research projects halted. Hence, although we must be sensitive to regional differences, one common feature resulting from the present crisis is the deepening division across HED systems between the Global North and Global South (Wondwosen, 2021; Oleksiyenko, 2021)<sup>6</sup>.

6. When examining the impact of COVID-19 pandemic on research, we must acknowledge the significant differences across different higher education systems around the world. With reduced resources and financial constraints, we can easily imagine governments will concentrate funding support to the elite institutions in order to maintain their global competitiveness. Against this context, it is not difficult to imagine higher education institutions primarily reliant upon private funding support will encounter not only financial constraint but other forms of challenges when managing their institutions. In addition, we must realize different types of higher education institutions performing diverse roles and missions around the world. For those institutions face the reduction of student numbers and funding cuts, coupled with less support from the government, they have encountered difficulty in managing their research related activities.

# 03.

## **Impacts of the COVID-19 pandemic on higher education finance and governance**

## 3.1.

### Increasing disparity between universities

The pandemic challenges HEIs financially because of the drop in student intake and increased expenditure on online education infrastructure development and pandemic prevention measures. Emergency funds are channelled to support faculty and students in need, developing appropriate learning management systems and supporting increasing healthcare and welfare costs. Although expenditures have increased substantially, public budgets provided to HEIs declined sharply in response to external shocks and governments reviewing the prioritization of education in national budgets (IIEP-UNESCO, 2020; Schleicher, 2020). Although the pandemic was anticipated to bring financial challenges to universities around the world, there is increasing regional and intra-country inequality among HEIs. Universities face different financial situations depending on their source of income and status. Public HEIs are concerned about a potential reduction in public support, while private HEIs also express concerns about a significant drop of student numbers and reduction in tuition fee payment (Marinoni, Land and Jensen, 2020).

Universities that rely on student intake to generate revenue, including private universities and institutions in countries where government funding to HEIs is limited, are anticipated to suffer most from the downturn of enrolment and rising dropout rate. In Indonesia, for example, almost half of private universities have seen a decline of at least 50 per cent in the number of new students and smaller universities are the worst hit. Indonesia has witnessed a wider trend of private university closure all over the country since the outbreak of the pandemic (Yamin, 2021). Some countries managed to provide financial support to HEIs in need, but others may not be able to do so because of budget constraints.

In the UK, where universities also have a high dependence on international students, the government managed to provide some financial support for universities in need. It offered £280 million to sustain ongoing research projects, a blend of low-interest loans and grants that could subsidize as much as 80 per cent of international student fee income that had been lost, and emergency loans to those HEIs at risk of bankruptcy (THE, 2020). The Nordic countries are also funding research in the social sciences to study and mitigate the social consequences of the pandemic. In a global survey completed by educational institutions from 67 countries, respondents report that private sector employees have been dismissed, have lost their income because of not being able to work or have not had their contracts renewed. Some organizations point out that part-time teachers are unable to work during the campus

closures because schools have stopped hiring substitutes for teachers who are sick. For teachers employed on part-time basis, no work means no income or very low income from benefits based on a casual or part-time contract (El, 2020).

However, few governments in developing countries have been able to provide extra financial support to universities. More commonly, resources were relocated away from HED to fund the soaring health expenditures, as is the case in countries such as Kenya, Nigeria, and Pakistan. The financial difficulties experienced by families could also lead to the drop-out of students. In response, the Chilean government allowed students to defer their tuition fee payments during the pandemic. However, the measure received complaints because it precipitated the financial downfall of private universities, where tuition fees count for 60 per cent of income. The cut of public funding for HED also led to drop out of students in Kenya. Consultation with experts from different parts of the world has revealed the student loan problems further intensified during the COVID-19 crisis, while some student bodies requested a refund of tuition / course fees when they were forced to study online (Engalolo, 2021; Hong, 2021).

Universities that are likely to fare best are the rich and elite universities in developed countries. Despite government funding cuts and the dropping international student numbers as an overall trend, the elite universities still managed to attract international students during the pandemic. Although most universities in Anglophone systems suffered financially from losing international students, Oxford and Cambridge were found to be the least affected of all UK universities, despite a systemwide halving of the government share of university budgets between 2010 and 2020 (Dolton, 2020).

## 3.2. Energized knowledge system with challenges

The pandemic also creates serious issues of unemployment among university graduates across the world. In the UK, almost one in eight recent graduates was unemployed in the third quarter of 2020. In the US, the unemployment rate for those aged 16–24 was 27.4 per cent in April 2020. As many companies halted hiring plans during the pandemic, the entire generation of graduates is confronted with unemployment and underemployment. With more experienced candidates seeking employment during the pandemic, the competition for even entry-level jobs is crippling. The difficult job-seeking process can lead to deteriorating mental health issues among graduates and could lead to decreased optimism about the future. A gloomy job market can make young graduates a lost generation due to COVID-19. The reduced labour market opportunities, worse prospects for stable employment and social isolation during the pandemic are causing mental health issues among university graduates.

Although some measures were taken by governments to avoid soaring unemployment rates, most of the measures focus on keeping those already employed in work rather than boosting the hiring of recent graduates. Fresh graduates are forced to compete with more experienced workers for entry-level jobs. It is against this context that a growing number of students across different parts of the globe question the value of having HE, particularly when they confront uncertain labour markets and intensified competition for job placement (QS, 2021a; Wall Street Journal, 2021). Extensive review of literature suggests different ways in addressing the graduate unemployment issue during the pandemic are as follows:

- Support for entrepreneurship skills development with financial support to graduates should be increased.
- Governments should do more to boost the hiring of recent graduates.
- Expanded traineeship and internship opportunities should be provided for disadvantaged young people.
- Mental health support and career development advice to graduates in need should be provided through various channels easily accessible to students.

The loss of education during the pandemic may bring long-term economic costs to individuals and nations. The pandemic interrupts the normal operation of HED and online education inhibits the development of cognitive and interpersonal skills of students. Having lost one-third of the academic year because of institutional closures, students were estimated to suffer a 2.6 per cent loss in income across their entire career on average, with the highest loss reaching 5.6 per cent for students in Singapore (OECD, 2020). The potential deficits in students' educational attainment do not only impact individual incomes but also national incomes overall. Hanushek and Woessmann (2020) estimate the impact of learning loss on individual future income and national economic growth. Although given for students enrolled in grades 1-12, their study provides a general picture for the long-term impacts of campus and school closure. It shows that a learning loss of one-third of the year for the current student cohort is estimated to mean a 1.5 per cent lower GDP on average for the remainder of the century. As shown

in Tables 4 and 5, learning losses can lead to substantial economic losses at both the individual and national levels. Therefore, making up for such losses through re-opening of campuses or enhancing online education where possible is vital. Additional possible measures for improving the student learning experience can be found in Section 1<sup>7</sup>.

**Table 4. Long-term loss in individual income and national GDP due to the loss of education during the pandemic**

Learning loss (Academic-year equivalents)	Lost individual income (Pooled)	In % of discounted future GDP	GDP decrease in the year 2100
0.25	1.9%	1.1%	1.9%
0.33	2.6%	1.5%	2.6%
0.50	3.9%	2.2%	3.8%
0.67	5.2%	2.9%	5.1%
1.00	7.7%	4.3%	7.5%

Source: Author summary based on OECD, Hanushek and Woessmann (2020).

**Table 5. Aggregate lost GDP in G20 countries because of learning loss induced by the COVID-19 pandemic**

Country	GDP 2019 (billion USD)	Impact of lost learning (Billion USD)1/3-year learning
Argentina	990	-683
Australia	1,262	-871
Brazil	3,092	-2134
Canada	1,843	-1272
China	22,527	-15543
France	3,097	-2137
Germany	4,474	-3087
India	9,229	-6368
Indonesia	3,197	-2206
Italy	2,557	-1765
Japan	5,231	-3609
Republic of Korea	2,206	-1522
Mexico	2,519	-1738
Russian Federation	3,968	-2738
Saudi Arabia	1,609	-1110
South Africa	731	-504
Turkey	2,350	-1621
United Kingdom	3,121	-2154
United States	2,0575	-14197

Source: Author summary based on OECD, Hanushek and Woessmann (2020).

7. When examining the impact of COVID-19 pandemic on higher education finance, we should also note the impact of higher education finance and governance goes hand in hand. For details of the impact on university governance, please refer to another thematic report with emphasis in university governance presented in the Conference.

The impact of the pandemic on HE's finance discussed above should have affected HED governance. Without stable funding sources, many HED systems across the globe have closed academic programmes or units, withholding faculty recruitment, delaying capital projects and turning tenure positions in part-time or contract terms. Universities relying on private funding are adversely affected by the significant decrease in fee-paying students not only in the established economies in Global North but also in the global South (Welch, 2021; Mohamedbhai, 2021). We must also note that students are not entirely happy with online learning without attending in-person classes and demands for refunds of tuition fees are becoming a growing concern for students and parents (Brignall, 2021; Crown, 2021). Special crisis management measures should be put in place to address the finance and governance issues outlined above. More discussion on university governance can be found in another Theme Report on Governance.

# 04.

## Impacts of COVID-19 pandemic on international higher education

The pandemic, infodemic, and rising neoliberalism and nationalism have created a complex situation that intensifies geopolitical tensions in many regions, greatly influencing HE. International HED faces greater challenges as border closures and travel restrictions disrupted international mobility for education, networking, and collaborations (Oleksiyenko et al., 2020). The rising xenophobia against Chinese and Asian students and parochial nationalism create obstacles for the international HED system (Mok, 2021; Soria, 2021). Recent research suggests that international students face different forms of cultural, social, and psychological wellbeing issues during the pandemic (Mok, 2021; Li, et al. 2020; Haft and Zhou 2021). The wellbeing of international students was undermined by policies in some major host countries of international students.

In July 2020, the US Immigration and Customs Enforcement issued a guideline urging international students who were participating in online education to leave the US. Likewise, the Prime Minister of Australia made a comment calling international students to 'go home' unless they have critical skills needed by the government, neglecting the fact that border closures and visa regulations make going home impossible for many international students (Le 2021). Such measures may discourage prospective students from studying in these countries in the future while opening the possibility of new international HED destinations.

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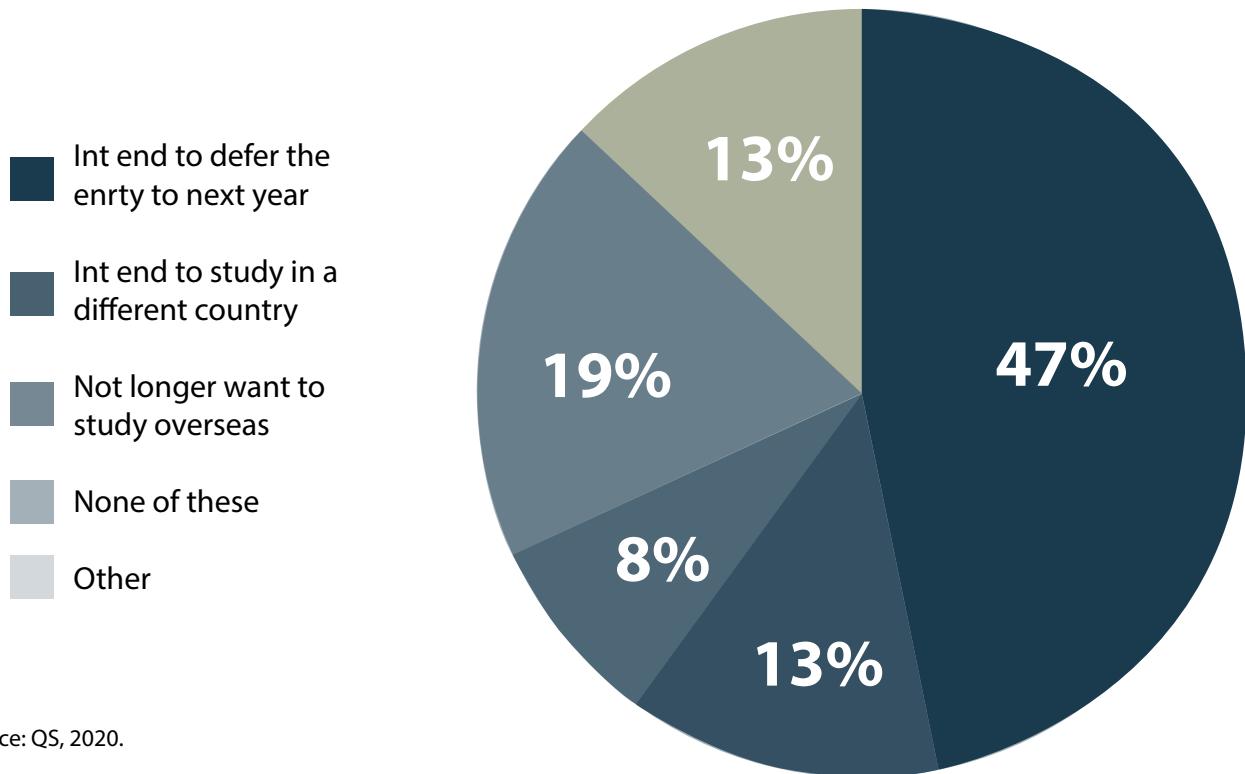
## 4.1. Changes to the international higher education landscape

The spread of the pandemic has dramatically changed the landscape of global HED featured by decreasing international mobility and fostering the emergence of new study abroad destinations. Although a sharp increase of internationally mobile students occurred over the past two decades, the overall percentage is rather low with only 2 per cent of the world's total students involved. Furthermore, mobility is largely in a single direction, mostly from the Global South to the Global North. The outbreak of COVID-19 has dramatically changed the landscape. International student mobility has been facing unprecedented challenges caused by the pandemic.

With travel restrictions and closed borders, many students cancelled or changed their overseas education plans, reshaping the landscape of international HE. Universities in Anglophone countries are more likely to be influenced because they are more financially dependent on fee-paying international students (Marginson, 2020b) and receive the lion's share of the world's internationally mobile students. The decrease in international student numbers means that HEIs will lose a large amount of income, and the financial crisis will further affect the implementation of teaching, learning, scientific research and other activities. Different stakeholders of global HED have conducted research on international student mobility and universities around the world are trying to adapt to the new situation. A summary of major challenges faced by different stakeholders is below:

- Universities that rely on international students to bring revenue have been particularly affected by the pandemic.
- The negative impact of the pandemic on student mobility will be more profound in countries where the pandemic is out of control.
- Countries with better pandemic control, such as some East Asian countries, may become potential major destinations for international students.
- Health and well-being concerns become major factors influencing the destination choice of international students.

**Figure 2. How the pandemic has influenced the study plan of potential international students**



Source: QS, 2020.

As shown in Figure 2, the survey conducted by QS in 2020 shows that approximately half of potential international students intend to defer their overseas learning plans until 2021, whereas over 20 per cent would either choose another country or cancel their overseas study plans. Factors preventing students from travel include border closure, visa restrictions, university campus lockdowns and worries about health and safety. In addition, detrimental policies issued by some popular destination countries also become an obstacle for international student mobility. In the US, although this policy was revoked by strong resistance from students and some leading universities, it has brought many negative impressions to international students who have plans to study in the country. The impact of the pandemic on international mobility may vary greatly across regions and institutions, with elite universities less likely to be influenced (Welch, 2021).

Although interest is decreasing in studying in traditional HED destinations like the US and UK, a growing number of students chose to study in their neighbouring countries, including developing countries, where the pandemic is more under control (Mok et al., 2021). With international students becoming scarce resources, competition for attracting them will increase. Government measures to control the pandemic and their side effects will become essential in influencing the destination choice of international students. The following are some suggestions that tertiary education institutions can follow in dealing with issues relating to international students during the pandemic:

- Establishing communication channels for in-time, transparent and consistent communication with international students regarding the COVID-19 preventative measures taken by the government and the university.
- Engaging different stakeholders in supporting students and creating a sense of community.
- Developing and implementing well-being programmes for international students who might face pressures in the host country.
- Conducting rapid technology assessments to support distance learning of international students.
- Engaging financial and logistic teams to understand the needs and constraints in meeting the distance learning requirements of students and staff.
- Developing strategies to engage and support students (online, in person or in some combination of these modes) in a holistic manner.

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## 4.2. Virtual student mobility

As a result of travel restrictions and social distancing measures, digital and online methods are being used to replace previous face-to-face events. Virtual student mobility uses technology to support cross-border communication, intercultural understanding and knowledge exchange during the pandemic. With the support of information and communication technology, virtual student mobility is increasingly being used to support international and intercultural learning during the pandemic. For example, a joint statement was signed by 33 universities worldwide to support student mobility during the pandemic, and over 60 per cent of HEIs around the world increased their virtual mobility during the pandemic (UNESCO, 2021a).

Compared with in-person events and fairs, virtual student mobility can reduce the transportation cost of international travel and can thus be more accessible for students with lower socioeconomic status. Virtual student mobility can also be accessed by students who are unable to undertake international travel for various reasons such as physical disability. However, equity concerns relating to access to such events remain because they still require certain infrastructure support. Barriers to virtual student mobility include:

- Infrastructure limitations
- Concerns relating to the quality of the programmes and the certificate if any
- Different administrative measures between home and host institutions
- Language barriers
- Access to information

The digital divide between developed and developing countries could influence access to such programmes and thus further worsen the educational stratification between rich and poor. Virtual student mobility is also viewed as inferior to physical mobility by some students and employers, calling into question the sustainability of such programmes after the crisis. To address these issues, universities should work together to set clear learning outcomes and goals for virtual exchange programmes and develop a transparent method for the evaluation and recognition of such programmes. Additional efforts are needed to support students from disadvantaged backgrounds in enrolling in various virtual mobility programmes. Other suggestions include:

- Clear goals and learning outcomes should be set for virtual student mobility programmes.
- Associations and universities should set clear guidelines on the implementation and recognition of virtual student exchange programmes.
- Aid should be given to at-risk students to access virtual student mobility programmes.

## 4.3.

### Emerging new forms of internationalization

The above discussions have highlighted the impact of the COVID-19 pandemic on international student mobility and emerging virtual mobility programmes. Other new forms of internationalization of HED have also emerged during the crisis time. With the disruption of physical mobility, a boost has been given to internationalization at home with the growing interest in the green agenda in relation to internationalization. The COVID-19 crisis has driven institutions to search for creative and innovative ways in enhancing student international learning experiences through on-line platforms, as opposed to conventional forms of internationalization, which would have caused damage to the environment because of the carbon footprint. Recent research has suggested that an 'identity crisis' for internationalization has occurred in some institutions as a result of the pandemic while a 'moment in the sun' has been afforded to internationalization at other institutions (Rumbley, 2021). Meanwhile, the disruption of physical mobility has also sparked a massive movement to lean on technology-enabled international learning and engagement. For example, universities engage in the form of collaborative online international learning (COIL). New or renewed attention to explore the possibilities of internationalization at home also resulted in many contexts from the widespread inability to undertake physical travel (Rumbley, 2021).

While we are celebrating that the growing popularity of technology-supported or digital-internationalization could enhance student learning at home, the intensified digital divide could also increase across different parts of the globe. For HED systems with strong technology-enabled international education and training, the adoption of technology-enabled internationalization would benefit student learning. We must search for ways to bridge the widening gap between the institutions with technology-mediated international education as good

practices and those without such infrastructure support. Having experienced the disruption of physical mobility for more than a year after the outbreak of the pandemic, the success in combating the COVID-19 crisis varies across the world though the vaccination has been stepped up among different parts of the globe. Nonetheless, new strains emerging from COVID-19 considerably delayed the resumption of physical student mobility. Recent research has suggested a potential paradigm shift of students traditionally choosing their overseas studies destinations in the West to institutions within their own regions because of personal safety and social security reasons (Mok, et al., 2021).

When health conditions are getting stabilized, we witness more student mobility programmes at work in Europe and Asia, showing the regionalization of education (Mok, et al., 2021). In a recent International Student Survey conducted by QS, the prospective international students were asked when they would feel conformable travelling overseas. Some 38 per cent of respondents chose when a vaccine is widely available and 34 per cent chose when there are few or no active coronavirus cases in the destination country (QS, 2021b). Given the varying approaches taken by countries to administrate the vaccine and the unequal distribution of the vaccine, Europe, North America, and East Asia have the higher percentage of citizens vaccinated with at least one dose (WHO, 2021). In view of the vaccination rates outlined above, we could conceive that international travelling may first resume from these regions. In addition, the survey conducted by QS suggests that how welcoming the country is to international students was ranked as the second most important factor influencing students choosing which country to study (QS, 2021c). For example, the isolation policies adopted by the Trump government left a lasting impression of the US as unwelcoming to prospective international students. Against the context when some regions across different parts of the globe are still experiencing the challenges in combatting the COVID-19 pandemic, HEIs must adopt a more creative / innovative approach in enhancing students' international learning.

# 05.

## Policy recommendations

## International and national level

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- Strengthening international and regional collaboration through university associations or international organizations. For example, the IAU and regional associations like the Association of African Universities could promote deep collaborations among member institutions in support of teaching, student learning and research and wider engagements.
- National governments across the globe should work closely with the UNESCO to co-develop policies and strategies in bridging the widening gap between the developed and less developed world during / after the COVID-19 crisis in co-promoting Education 2030 Agenda.
- Policies that are conducive to the mobility of scholars and students should be promulgated. The value of personnel mobility for academic development and national mutual trust should be a focus, and normal academic exchanges being restricted by political conflicts should be avoided. Virtual / technology-enabled platforms for promoting international / regional collaboration through working with international organizations like UNESCO or University Associations should be properly adopted.
- As HED is a priority for social construction, HEIs should be given sufficient funds for their operation and should be encouraged to carry out scientific research in response to public crises.
- Construction of information technology infrastructure should be strengthened, and connectivity for HEIs and students should be increased. HEIs should be helped to build their capacity to effectively deliver online education, and support should be provided for students to facilitate online learning especially in the less developed world.
- Concerted efforts should be put together to promote inter-regional cooperation. Appropriate adoption of technology-enabled systems should take place to support the less developed countries for teaching, student learning, research and internationalization.
- Different stakeholders, including NGOs and civil societies, should be encouraged to provide support to at-risk HEIs, teachers and students.

## Institutional level

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- The transformation and reinvention of HED should be promoted. University governance, teaching and learning, scientific research, student mobility and traditional school-running models should be re-examined, and corresponding optimizations and adjustments should be made.
- HEIs should strive to diversify funding sources and improve their ability to resist risks. Over-reliance on government funds and tuition fees for international students may have undesirable consequences and even lead to bankruptcy in times of crisis. Searching for appropriate support with a private-public-community funding mix to sustain HED development would be key.
- A high-quality and stable network platform should be built. Academic staff should carry out online teaching and research activities and build virtual laboratories. Students should be provided with diversified online courses, blended teaching should be implemented, and interest in learning should be stimulated.

- HEIs should participate deeply in building a society in the post-pandemic era. HEIs must find ways to effectively deal with public crises, especially when society has higher expectations for them. HEIs should also enhance the sense of responsibility for serving society, expand service channels and increase participation.
- The physical and mental health and well-being of students and staff should be a focus. Students who study online at home are more prone to symptoms such as obesity, depression, and anxiety. HEIs should meet the needs of students and provide necessary consulting services.
- A platform should be built for extracurricular activities to promote peer exchanges and social interaction. Online learning restricts students' activity space to the family, and the long-term lack of social interaction has an adverse effect on the development of students.
- HEIs should institutionalize crisis management measures, including transparent administrative processes and communication platforms with both students and staff.
- HEIs should adopt appropriate policies / strategies in supporting early career researchers, young PhD graduates and women researchers in pursuit of an academic / research career.
- Inter-regional and international collaboration among HEIs should be encouraged with strong support from national governments to advance the Education 2030 Agenda.

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# Annexes

## Annex 1. Hurdles for online learning

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- Availability of ICT infrastructure.
- Limited bandwidth and poor internet connection.
- High price for good internet access.
- Technical issues of the online platforms.
- Difficulty in finding a quiet place to follow classes at home.
- Financial difficulty caused by the pandemic.
- Limited class interaction, group discussion and after-class activities.
- Mental distress caused by lack of social activities.

## Annex 2. University closure and student dropout in Africa and Latin America

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Country	Case
Ethiopia	<p>The pandemic seriously affecting private HEIs by dwindling source of income and reducing the productivity of the employees.</p> <p>Source: <a href="https://www.tandfonline.com/doi/pdf/10.1080/03075079.2020.1859690?needAccess=true">Tamrat, 2021. <a href="https://www.tandfonline.com/doi/pdf/10.1080/03075079.2020.1859690?needAccess=true">https://www.tandfonline.com/doi/pdf/10.1080/03075079.2020.1859690?needAccess=true</a></a></p>
South Africa	<p>South Africa noted reductions in the employment of university administrative and maintenance staff due to budget reductions.</p> <p>Source: <a href="https://en.unesco.org/news/new-unesco-global-survey-reveals-impact-covid-19-higher-education">UNESCO, 2021b. <a href="https://en.unesco.org/news/new-unesco-global-survey-reveals-impact-covid-19-higher-education">https://en.unesco.org/news/new-unesco-global-survey-reveals-impact-covid-19-higher-education</a></a></p>
Uganda	<p>HEIs in Uganda struggle to pay teaching staff during the pandemic.</p> <p>Source: Agaba, 2020. <a href="https://www.universityworldnews.com/post.php?story=20200520125603438">https://www.universityworldnews.com/post.php?story=20200520125603438</a></p>
Ghana	<p>Close of campus causing about 50 percent of unpaid fees to private HEIs in Ghana.</p> <p>Source: Kokutse, 2020. <a href="https://www.universityworldnews.com/post.php?story=20200512090947247">https://www.universityworldnews.com/post.php?story=20200512090947247</a></p>
Rwanda	<p>The decline of revenue of universities causes the loss of experienced staff at a dropout rate of 20 per cent.</p> <p>Source: Mbonyinshuti, 2020. <a href="https://www.universityworldnews.com/post.php?story=20200519093256273">https://www.universityworldnews.com/post.php?story=20200519093256273</a></p>

Kenya	<p>Over 32,000 undergraduate and postgraduate students in Kenya are expected to be eventually deregistered because of funding cuts by the Kenyan government.</p> <p>Odhiambo, 2021. <a href="https://www.universityworldnews.com/post.php?story=20210407045342393">https://www.universityworldnews.com/post.php?story=20210407045342393</a></p>
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Bolivarian Republic of Venezuela	<p>Venezuela reported a decrease of 21 per cent-40 per cent in student enrolment to higher education and in the employment of university academic staff due to COVID-19.</p> <p>Source: UNESCO, 2021b. <a href="https://en.unesco.org/news/new-unesco-global-survey-reveals-impact-covid-19-higher-education">https://en.unesco.org/news/new-unesco-global-survey-reveals-impact-covid-19-higher-education</a></p>
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## Annex 3. Key challenges complicating online learning

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- Cut in university finance, turnover of staff and negative impact on teaching quality.
- Not all academics have adequate training for online teaching.
- Online teaching materials in different languages are unequally distributed.
- Existing infrastructure, such as websites and online platforms, cannot support mass online education.
- Disciplines requiring hands-on experience can find adjusting to online teaching difficult.
- Workload is increased due to deteriorating work conditions.
- Occupational precarity and insecurity are heightened.
- Career guidance and counselling services work less effectively in distance mode (Farnell et al., 2021; Zunguze and Tsamber, 2020).

## Annex 4. Challenges faced by students during the pandemic

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Recent international studies on student learning experiences during the COVID-19 pandemic have identified the following challenges faced by students:

- Challenges related to studying conditions (i.e., access to a quiet place to study, equipment, reliable internet connection and course study materials and confidence in using online platforms).
- Challenges related to funding (i.e., loss of employment/income, difficulty in meeting living costs and issues in receiving scholarships).
- Challenges related to well-being (i.e., lack of supportive social networks and pronounced feelings of frustration, anxiety, and boredom with academic activities) (Farnell, 2021, see also Doolan et al., 2021; Aristovnik et al., 2020; Amoah and Mok, 2020).

# Impact of COVID-19 on higher education

Organized by UNESCO in collaboration with the Government of Spain, the 3rd World Higher Education Conference (WHEC2022) aims at breaking away from the traditional models of higher education and opening doors to new, innovative, creative, and visionary conceptions that not only serve current agendas for sustainable development, but also pave the way for future learning communities that overcome barriers, speak to all and are inclusive of all lifelong learners.

The WHEC2022 promotes a global conversation nurtured by diverse narratives on higher education through various activities: generation and dissemination of knowledge; formulation of updated policy recommendations; identification and sharing of innovative practices; networking and strengthening of partnerships; broad participation of stakeholders at local and international levels (within and outside higher education systems: professors, researchers, youth, managers, authorities, policy makers, experts, entrepreneurs, social leaders, etc.); and development of renewed paths framed by the 2030 Agenda for Sustainable Development and looking at the Futures of Education.

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