

The COVID-19 Crisis Response: Supporting tertiary education for continuity, adaptation, and innovation

1. GLOBAL CONTEXT

Tertiary education is vital for producing the caliber and diversity of graduates needed both for the economy that exists today and for economy to which a nation aspires. It fuels competitiveness and growth by preparing professionals, like managers and engineers, medical personal and teachers. Universities are also centers of research and innovation and – working with small and medium size enterprises – support regional development. Tertiary education is both the aspiration of more and more young people around the globe and a fundamental requirement for employment in the industries that drive the global knowledge economy. As such, tertiary education provides unique opportunities for individual development and equality of opportunity as well as promoting shared prosperity. A failure to sustain effective tertiary systems can lead to perilous social upheavals, as youth fall outside the education system, unable to engage in active learning and uncertain about the future of their education and prospects. Societies are, then, confronted with a massive challenge of youth disengagement and deprived of the graduate professionals needed to keep countries on track for social cohesion and growth.

As of April 8, 2020, universities and other tertiary education institutions are closed in 175 countries and communities, and over 220 million post-secondary students—13% of the total number of students affected globally—have had their studies ended or significantly disrupted due to COVID-19. Table 1 depicts the current state of disruption and proportion of tertiary education students affected out of the regional total tertiary student populations. What we are seeing globally is impact in every region and a notably pronounced effect on upper- and lower-middle income countries. In general, this distributed effect reflects the spread patterns of coronavirus from the upper-middle income countries of East Asia to Europe and, to a lesser extent, Latin America. As the virus spreads into the Africa and South Asia regions, we are likely to see the numbers from lower-middle and low-income countries rise. The figures and analysis herein will be continually updated as they change.

Table 1. Total affected tertiary education students, by region and income level¹

Disaggregated by Region and as proportion of total disrupted tertiary education students				Disaggregated by Income Level and as proportion of total disrupted tertiary education students			
Region	Out-of-school tertiary ed students	Total tertiary ed students	%	Income Level	Out-of-school tertiary ed students	Total tertiary ed students	%
East Asia and Pacific	72,391,442	73,538,139	98%	High income	53,479,089	54,103,566	99%
Europe and Central Asia	36,948,926	38,030,033	97%	Upper middle income	97,493,490	97,934,594	96%
Latin America and Caribbean	27,007,997	27,111,868	100%	Lower middle income	65,358,490	66,421,264	98%
Middle East and North Africa	14,282,666	14,282,666	100%	Low income	3,808,691	4,146,072	100%
North America	20,640,820	20,640,820	100%	Grand Total	220,139,760	222,605,496	99%
South Asia	40,468,782	40,468,782	100%				
Sub-Saharan Africa	8,399,127	8,533,188	98%				
Grand Total	220,139,760	222,605,496	99%				

¹ As of 8 April 2020, based on World Bank calculations

Few, if any, countries, regardless of region or income level, had rapid response plans in place to coordinate such a massive effort as closing entire education systems. The ad hoc nature of institutional closures continues to plague systems globally, as students, academic staff, and government officials grapple with the implications of these closures for their learning, teaching, research, innovation and education outcomes, and financial stability. The road from here to resumption of operations will be long and difficult, and some of the changes that this crisis will bring to tertiary education systems around the world will not go away. We expect that most systems will be sorely challenged to quickly return to the state they were in before the pandemic.

In many countries, the immediate response to the need to close the physical campuses of post-secondary institutions was to pivot as much as possible into distance learning. In many regions, this has resulted in online delivery, though issues of equity, infrastructure, broadband capacity, and pedagogic capacity immediately emerged as challenges in remote delivery. Other forms of distance learning—from email delivery/return of assignments, to utilizing mail, TV, radio, phones and mobile applications where broadband is limited, to independent study—are being tried and tested in this massive global experiment with off-site learning potential and modalities.

A rapid assessment of the experiences of COVID-19 disruption to tertiary education globally exposed many significant short- and long-term challenges facing tertiary education systems and institutions, including: diminished resources for institutions, personal and academic challenges for institutions and students, demand for improved infrastructure to support continued distance and blended learning models, reduced mobility placing pressures to improve regional and local tertiary institutions, and much more. A comprehensive list of immediate and long-term challenges and interventions follows, and together those inform an assessment of the potential for some positive outcomes from these unprecedented times.

PANDEMIC RESPONSE IMPLICATIONS FOR INSTITUTIONS AND SYSTEMS

Immediate challenges to confront:

- ✓ Broadscale **institutional disruption**
- ✓ Staff and student **illnesses**—provision of appropriate support
- ✓ **Mass student displacements** and/or loss of vital campus services and support
- ✓ Technical ‘debt’—even advanced, wealthy countries find themselves hampered by the use of **outdated technology platforms**
- ✓ Maintaining **instructional operations**, including coursework, exams, and awarding of degrees – modification of assessment modalities
- ✓ Maintaining or closing **research operations**, including on campus laboratories and facilities, field work, conferences, and external research collaborations

The ‘Great Pivot Online’

Many universities and colleges have, in the space of days or weeks, moved their operations online. Below are five major actions by institutions:

1. Acting on the **short-term** (e.g. using video-conferencing and creating helpdesks) **and the medium-term** (strengthening national and institutional capacity).
2. Mobilizing widely used (**mobile first**) and readily available and scalable resources (e.g. **cloud to scale**).
3. Setting up a **one-stop shop of resources and a 24/7 helpdesk** for administration, faculty and students.
4. **Curating existing content** and gather feedback on its usefulness as it rolls out.
5. **Communicating** with faculty, students and others, providing comfort and guidance.

This note includes a detailed section below, with guidance on online instruction.

- ✓ Curtailing of **international mobility**, including logistical implications for repatriation or locally housing international students and staff
- ✓ Staff and faculty **furloughs**
- ✓ Student loan maintenance (including deferrals/repayment freezes)
- ✓ **Equity implications**—academic, social, financial, physical—for low-income/at-risk students (potentially those with covid-19 health vulnerabilities)

Long-term challenges:

- ✓ Increased inequity/inequality in access and retention, as at-risk students return at lower levels due to increased financial and situational constraints (family obligations, changes in personal circumstances, support networks diminished or dismantled by campus closures, etc.)
- ✓ Reduced public funding for higher education
- ✓ Reduced private funding for higher education in terms of household, firms and other third-party funding
- ✓ Permanent closures of programs and institutions—resulting in permanent loss of skills and human capital in academic and administrative positions
- ✓ Permanent movement of more programs to online/remote platforms—requiring support for doing this effectively
- ✓ Reduced internal mobility, leading to increased local demand for higher education but also increased quality issues
- ✓ Reduced global mobility (and related reduced income-generation)
- ✓ Socio-emotional impacts on students (and academic staff) of remote teaching and learning—attention must be paid to both student welfare and the development of interpersonal skills in contexts lacking direct interpersonal experiences
- ✓ Loss of higher education’s contributions to the local and national civic communities and culture, including provision of continuing education, community meeting spaces, centers for performance and visual arts, etc.
- ✓ Loss of research, including research collaborations across institutions, borders, and disciplines

Implications for Private Higher Education

Private universities are closing their physical campuses and moving to online learning along with their public counterparts. With one in every three students enrolled in private institutions, they have a huge responsibility in responding to the immediate challenges posed by the closure of campuses. There is a wide range in the concentration of private enrollments across developing countries. Brazil has one of the highest footprints with 75% of private enrollments, other countries like the Dominican Republic have a more balanced distribution with 57%, and in China with approximately 25%.

Depending on how long campuses remain closed, private universities face the possibility of seeing enrollment declines, reduced revenue streams and lower operating margins. A further risk to private institutions is the loss/lay-offs of part-time faculty members who have been recruited because of their practitioner experience and may seek alternative part-time employment as they deal with the economic effects of being laid off.

The experimentation at scale of adoption of online education triggered by the pandemic will speed up the learning curve of universities and provide them with perspective to enrich campus-based programs with online elements in a way that aligns with demands from new generations of students and a world of work increasingly penetrated by technology.

2. REQUIRED ACTIONS/CONSIDERATIONS

Recognizing the need for just-in-time support in the day-to-day adaptation of tertiary education delivery to the impact of the pandemic, the following information depicts a series of considerations and actions institutions can follow as they work through the immediate and long-term adaptation to the changed environment for tertiary education.

Immediate Actions/Considerations:

Institutional Closures:

- ✓ Establishing protocols for transparent, timely, and consistent communication with the community (students, staff, stakeholders) regarding imminent closure needs and the steps being taken to ensure smooth transitions
- ✓ Deliver messages to create a sense of shared urgency—allow the community (academic and administrative staff, students, local community government) access to the information and decision-making underpinning actions being taken
- ✓ Delegate procedural decision making to Faculty Deans and Academic Chairs as early as possible: they know the complexities of their day-to-day operations best and are best positioned to support their staff in adapting and suspending their teaching and research, as needed
- ✓ If not done yet, conduct rapid technology assessment—how great is the technical ‘debt’ and what would it take to sustain continued teaching and learning (including infrastructure/equipment, connectivity, etc.)?
- ✓ If not done yet, conduct rapid student welfare assessments—how to evacuate and transport students safely away from residential facilities (where relevant), how to ensure students have the requisite supports and services when remaining in place (where relevant), and that institutions have the information required to address student needs
- ✓ Identify weaknesses in infrastructure—including power and broadband – and equipment to strengthen when possible or work around when not (e.g. through providing access to hotspots, tablets, etc.)
- ✓ Engage financial management and procurement teams as early as possible, to understand the opportunities and constraints related to purchasing of technology, licensing, hardware and software for students and academic staff, etc.
- ✓ Reach out to suitable private sector and other partners (e.g. foundations) who can help addressing the technical ‘debt’
- ✓ Assess and plan for security issues related to empty buildings filled with expensive technology and laboratories
- ✓ Account for all staff and students, particularly those who were engaged in any mobility programs away from their home institution; work to bring or return staff and students to their home countries

Course Delivery:

- ✓ Train instructors on how to teach remotely: tailoring the training to allow each academic staff member to define their own plan for content, goals, and learning assessment within the new modality
- ✓ Seek and adapt existing online/remote platforms where creation of new online courses out of traditional in-person instruction is not feasible
- ✓ Survey students on their capacity to engage in remote learning—equipment, family responsibilities, home environment, etc.—to understand how realistic it for students to adapt to instructors’ plans for delivery and to work with instructors to adapt according to student capacity to partake in distance learning
- ✓ Coach and support students on how to learn remotely

- ✓ Provide hardware to students and instructors where feasible
- ✓ Determine an institutional policy for assessing current term student performance (as relates to progression and grading, e.g. making all courses pass/fail)
- ✓ Determine an institutional policy for teaching assessments and course evaluations
- ✓ Review and determine graduation requirement for this academic year (2019-20)
- ✓ Assess adequacy of provision of financial and material support for at-risk students and institutions
- ✓ Develop and implement program to keep at-risk students engaged, including through dedicated tutors/point persons and customized work programs/schedules

Research (where relevant):

- ✓ Support to academic staff to transition, where possible, their research to remote platforms/contexts
- ✓ Provide support to allow research fellows and staff to maintain access to networks, materials, technology, and any virtual laboratories and simulators, to provide some level of research continuity
- ✓ Consider shared maintenance programs across institutions and centers for equipment and facilities, to limit exposure during pandemic-related closures
- ✓ Create plans for animal and human subjects, for safest and most humane options in a context where their safety may be impossible to ensure/maintain.
- ✓ Maintain lists of essential research spaces and materials to develop a rapid response and minimal maintenance plan in case of emergency.
- ✓ Consider options like virtual reality for conducting experiments and research

Preparing for the Next Academic Year:

- ✓ Develop action plans for two scenarios: one prepared for an extended period of distance provision and one focused on re-opening and resuming normal operation
- ✓ Determine adaptations of admission and examination protocols for the incoming class (Fall 2020)—what alternative admission practices can be adopted in lieu of exams?
- ✓ Constantly assess the effectiveness of remote course delivery and adapt and resolve challenges

Maintaining Organizational Operations:

- ✓ Seek suspension of required payments or delay non-essential expenditures
- ✓ Adjust stipends and other funding schemes as needed
- ✓ Seek suspension of compliance deadlines for quality assurance requirements of existing programs, including accreditation and re-accreditation requirements
- ✓ Establish regular and consistent meeting times with essential staff, to ensure engagement in the management of the institution is ongoing and evolving according to current circumstances
- ✓ Liaise regularly with key operational staff to monitor and address regular and crisis-related operational challenges at all levels of the organization—academic and administrative departments, facilities, etc.

3. LONG-TERM SYSTEM-LEVEL CONSIDERATIONS FOR GOVERNMENTS:

- ✓ Closures/mergers of institutions, particularly likely to be acute among tuition-dependent private, small institutions around the world – consider network implications
- ✓ Graduate unemployment levels will likely increase—both due to economic contraction and to labor market distrust of the quality of remote learning; consider expanding short course options and certification programs to provide rapid skills-oriented options for affected tertiary students

- ✓ Continued capacity building for online/remote delivery of coursework
- ✓ Any opportunities to consider/seek diversification of financing sources, including working with private sector partners, foundations, multilaterals and international organizations
- ✓ Assessment of terms, conditions, and scale of student loan and grants programs, in particular with a view to equity implications
- ✓ Expansion of domestic internationalization efforts, (“internationalization at home”) and online options for (potential) international students, where global engagement is reduced
- ✓ Greater provision of no-cost educational resources for institutions serving disadvantaged post-secondary student populations
- ✓ Adaptation of quality assurance regulations for a more flexible approach to address of the online and blended delivery of academic programs and ongoing challenges of various institutions as they revamp their operations
- ✓ Assess risks of long-term erosion of institutional/system capacity relative to funding modalities—delay cuts at system and institutional level until potential impacts can be understood
- ✓ Revise bureaucratic and regulatory barriers to rapid adaptation of TEIs to new realities of teaching, learning, and research
- ✓ Recommitment to capacity and skills development in STEM teaching and research, especially in low-income countries
- ✓ Strategic allocation of incentive funding for institutions, dedicated to expanding and updating technological infrastructure for digital pedagogy, investments in learning science, and for adequate training of faculty members
- ✓ Consider dedicated (financial, logistical, pedagogical) support programs for at-risk students

THE WORLD BANK’S KEY PRINCIPLES FOR EDTECH IN TERTIARY EDUCATION:

- ✓ **ASK WHY?** For today’s crisis response, the use of EdTech is to support remote learning at home for students during closure of school due to COVID 19.
- ✓ **DESIGN FOR SCALE:** EdTech interventions must be designed for scale for all students. For most low- and middle-income countries, adopting a *mobile first* approach is critical.
- ✓ **EMPOWER TEACHERS:** Technology should enhance teachers’ capacity and capabilities for teaching and learning. In remote learning, the parent is now also a “teacher” but less so for higher ed.
- ✓ **ENGAGE THE ECOSYSTEM:** Universities should consider a **multi-stakeholder approach**- engaging actors both inside and outside the university e.g. Govt, NREN, telecom companies, local/global IT companies, publishers, local EdTech startups.
- ✓ **BE DATA-DRIVEN:** Set up feedback mechanisms to be able to **collect, analyze and respond to feedback**, provide appropriate Quality Assurance.

4. ENABLING DISTANCE EDUCATION AND ONLINE LEARNING FOR TERTIARY EDUCATION

Converting Traditional Delivery to Online:

Responding to the COVID-19 crisis, many countries and tertiary education institutions have been able to transform their operations online relatively quickly. There are a few key reasons for some have adapted more quickly than others. First, many countries have made investments in digital connectivity for decades now. These include (fiber-optic) infrastructure, such as collaborations known as National Research and Education Networks (NRENs). NRENs are particularly important as mediators between higher education and the market and have increased services offered beyond connectivity, providing digital libraries, subsidized or free software, cloud services (e.g.

video conferencing or storage), capacity building and learning management solutions. NRENs are globally connected through networks such as GEANT (Europe), AfricaConnect, and APAN (Asia-Pacific), and they also sustain local communities of experts on connectivity and online learning.

- ✓ **NRENs have led the development of international standards and systems to support learning.** The most well-known system is eduroam, which allows students and faculty to connect to Wi-Fi, anywhere in the world. Another key service is EduGAIN, which is a identity and access management system. This allows higher education institutions to provide users with credentials that can, in turn, be used to seamlessly access any services being provided online. Within the COVID-19 crisis, a community of NRENs has launched a new initiative called Up2U, which is a bundling of several open-source systems, including Moodle LMS, cloud storage (CERNBox), video-conferencing solution (EduMEET), and online notebook (SWAN).
- ✓ **Universities have found robust private sector options and platforms to migrate their operations online.** At minimum, migration requires a Learning Management System and a Video-conferencing solution. The market for Learning Management Solutions is dominated by Moodle (open-source), Blackboard, Canvas, and a few smaller players. Global MOOC platforms like Coursera and EdX are scalable learning management systems. These LMS companies are supported by networks of companies providing tech and faculty support (such as helpdesks) to move operations online. Private sector video-conferencing solutions complement LMSs and include Zoom, D2L, Webex, Adobe Connect, Skype for Business, as well as open source solutions like Big Blue Button and EduMeet. The market for these

TECHNOLOGY BOTTLENECKS TO ANTICIPATE:

- ✓ **Inequality in connectivity:** Students (and faculty) do not have enough connectivity and devices at home, and this is particularly so for the most remote and the poorest. The digital divide remains strong, between countries and within countries. International bandwidth and local server (and hosting/data storage) capacity are not designed for the massive load that is coming.
- ✓ **Academic staff capacity to deliver remote courses:** Faculty are often underprepared to deploy content. While most faculty members are active online, many have not taught in online mode before this crisis. While there is a lot of material online, there is little 24/7 technical and pedagogical support available for them. On the medium-term, academic staff will need digital skills training.
- ✓ **Students' capacity to adapt:** Many, if not most, students are not experienced as online learners. While they may be quick to adapt, students face challenges that lead to dissatisfaction with their academic experience. Feedback from students can be leveraged to strengthen teaching, but feedback can also risk exposing frustrations that are challenging to address.
- ✓ **Mistakes:** In an emergency, we need to learn by doing, but we also need to make sure that we can minimize their impact and correct mistakes as they are identified. For instance, contracting with service providers must be developed very carefully, particularly with regards to contract length, exclusivity, security and privacy questions, to limit the impact should pilots prove unsuccessful.
- ✓ **Regulation:** The regulatory environment is not (yet) aligned to online learning. A key issue is the competitiveness of the Telecoms market, which often favor a monopoly, and does not provide cheap options that work for the poor. In many countries, quality and assurance systems are not helpful to improve online delivery. Finally, while regulation on privacy and data has been increasing,

solutions is supported by cloud-providers such as Amazon Web Services, Microsoft, Google as well as NRENs themselves.

Actions for leaders in the short- and medium term:

- ✓ **Develop both a short-term and medium-long term plan:** The short-term plan focuses on emergency response to keep students learning. The medium-long term plan should prepare for university-reopening, building resilience and transformation using EdTech where relevant/viable.
- ✓ **Use the most widely used and existing technology & resources** available locally: Mobile first, public cloud to scale quickly, international content to fill in.
- ✓ **Set up a one-stop space as an entry to various resources:** Most universities using their LMS as central platform- for advice, comms, teaching, learning, support etc integrating other technologies in the LMS e.g. video conferencing.
- ✓ **Focus on curating existing (open) content rather than developing content:** Developing good content takes time and expertise. Instead, focus on existing local and international (open education resources) content and align these to your curriculum.
- ✓ **Provide regular guidance and support to students and teachers** is fundamental: Set up virtual help-desk and providing pro-active tips and regular communications.

5. SUSTAINING OUR VALUES DURING THE CRISIS

(H)ealthy higher education communities matter enormously. They are engines of knowledge production, discovery, innovation, skills development, cultural preservation, and national progress. But to be healthy, higher education communities must be grounded in core values—*equitable access, accountability, academic freedom, institutional autonomy, and social responsibility*. Where these values are respected and flourish, higher education communities not only contribute necessary skills and services to society but also maximize the capacity of individuals to think for themselves and make informed, creative contributions to their own lives as well as to the lives of others.²

Scholars at Risk, 2017

In the rush to respond to the immediate change—eliminating pathways for spreading disease by the closing of institutions, impacting core efforts in teaching, learning, and research—it is easy to focus on delivery. How do we teach to those meant to learn? How do we support research continuity where possible? This is logical and important in the first flush of change. It is imperative, however, that those in a position to think beyond immediate survival keep an eye on core values in any tertiary education sector, so that when the crisis abates, values remain within the mission of all tertiary education systems.

Online and distance learning have forced massive adaptation in how information is delivered and how students must learn. *Students without access or the resources to afford the technology are being left behind. Student with learning challenges are being left behind. Students with disabilities are being left*

² Scholars at Risk (2018). Promoting Higher Education Values: A Guide for Discussion. Retrieved 25 March 2020 from https://www.scholarsatrisk.org/wp-content/uploads/2018/08/SAR_Promoting-Higher-Education-Values-Guide.pdf

behind. Institutions away from urban centers and robust infrastructure are being left behind. Institutions with missions to teach those most likely to fall out of the education pipeline are being left behind. This was true before the pandemic, which is exacerbating the speed at which disparities are affecting student persistence and institutional survival.

Education leaders and stakeholders must seek and produce evidence from the learning sciences while embracing technological innovations, to ensure this push to change the delivery of teaching to online platforms delivers on the promise of learning and skills development. Such changes must be studied for efficacy and to understand best what works and does not and for whom. To date, most online learning approaches do not have comparable evidence-based foundations, and this should be concerning enough to drive investments in the science of teaching and learning.

In doing so and while leading their tertiary education systems into the post-crisis world, policy makers and practitioners alike will need to focus their efforts on the most vulnerable students and ensure that teaching and learning solutions, technological set-up, infrastructure investments and funding modalities are geared towards keeping these students engaged and connected and support their learning process and outcomes.

The World Bank is committed to supporting its clients in the development of immediate and long-term intervention to address the challenges and bridge the gaps created by this pandemic and support all of our clients' tertiary education sectors in adapting to the new situation in the short, medium and long term.
