Policy Changes in Global Higher Education: What Lessons Do We Learn from the COVID-19 Pandemic?

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Abstract

Universities around the world are facing unprecedented challenges as a result of the corona virus. There has been global devastation of the entire education sector with long-term closure of schools. The health crisis and the accompanying education crisis continue, and the end of the crisis is not certain. The immediate response everywhere to the outbreak of the virus was closure of university campuses, disrupting almost all academic activities everywhere. After the immediate reaction, as a short-term response, universities began offering some core programmes in education and research by adopting digital technology. While some feel that online methods have improved overall access, many argue that they exacerbate existing inequalities in access to higher education and research among several groups of population. As the global health emergency is still continuing, it is widely noted that we need to develop, after initial immediate responses, short-term, medium- and long-term plans for developing robust higher education and research systems that contribute to knowledge development, reducing inequalities, and which can face future uncertain emergencies. The paper reviews some of the important developments that have taken place, and different perspectives that are emerging on the responses needed for the transformation of higher education in the post-COVID era.

Keywords COVID and higher education · Education crisis · Inequalities in education · International students · Online learning · Pandemic · Remote teaching · Research · Technology

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The COVID-19 pandemic has devastated the whole world for several months. … it can make another wave of devastating reoccurrence. …, there is no indication that it is abating.

Amidst the ongoing havoc and uncertainty, there have been raging debates about many existential issues and one of them has been the education of the youth.

N’Dri T. Assié-Lumumba (2020).

The Global Health and Education Crisis

The Corona virus disease, known as COVID-19, has shaken the socio-economic order of the world drastically. Despite the discovery of vaccines, the second and even third waves are sweeping through many countries. The second wave is considered much more deadly than the first wave. Some countries are already experiencing the third wave and fear a fourth wave. Warnings that there will be yet another wave remain a nightmare for many nations. New strains of the virus are emerging in certain parts of the world, and spreading quickly across the world. The pandemic has dismantled the very structure of many social, economic and cultural institutions. Though a feeling of confidence is gradually percolating, it cannot be denied that there is still uncertainty as to how long it will take to return to complete normality, or it is possible at least to dream a normal world as we lived earlier. The pandemic heralded a period, after the World War II, of fear and twitchy discussions on the existential crisis mankind faces. Human society has a long history of epidemics such as plague, bird flu and Spanish flu. Over the past century, we have experienced the impact they have had on human lives and the transformations that have taken place in all spheres. But the COVID-19 pandemic seems to be different in nature and in various dimensions. In about two years, that is by mid-March 2022 more than half the world population -- 4.7 billion people have been inflicted with it and and more than six million have died (covid19.who.int). The numbers are still rising, though at a reduced rate. The period has been traumatic for the whole of mankind.

Many have made bold attempts at analysing long term impacts of COVID-19, even before we fully understand its nature. What is it? How is it caused and spread? Is it human-engineered or does it have a natural origin? How to control it? How long will it take? We know nothing so far! Will it be a short-term virus like the majority of the earlier viruses with just short-term implications for society, or is the virus here to stay that cannot be controlled in the near future? Nothing is clear. All predictions and even scientific projections by medical experts, statisticians and econometricians have gone awry. Topsy-turvyiness is palpable. Hopes are often being clouded by despair. Scientists are yet to come to definitive conclusions about the virus, the ways in which it spreads among humans, and its impact. There are still a lot of doubts and gaps to fill. One example is the on-going debate over whether or not the virus is airborne. This kind of uncertainty shadows our battle with it. Nearly two years of pitched battle with the virus and even with the advent of vaccines, mankind
continues to struggle with similar questions. Even in this age of advances in science and technology, the whole world is on the defensive with the novel Corona virus subsiding and resurging in the form of different variants and remaining obstreperous in spite of herculean attempts to contain it. Different opinions have been put forward regarding its origin (Maxmen and Mallapaty, 2021), spread and effectiveness of vaccines. Given this context of global chaos, debates on the impact of the epidemic on our social structure and institutions cannot but be based on speculation and ambiguity. Obviously, speculation and ambiguity push intellectuals to grope in the darkness to find means and ends in their encounter with the pandemic. Optimistic expectations are that mankind will put an end to the pandemic soon; therefore, many of the changes that it brings to society, especially to education system, may not survive, though some fear that the virus itself along with its caustic effects may last long. It is also feared at the same time that it may cause a major global brutal economic recession with serious long-term implications for human development.

The institutionalised education system faces the greatest challenges posed by the pandemic. As the United Nations (2020) noted, the COVID-19 pandemic has created the largest disruption of education systems in history. It has affected nearly 1.6 billion learners, and 63 million teachers, affecting all levels of education and training in more than 190 countries in all continents of the globe (United Nations, 2020). (Figure 1). There were national closures that included shutting down schools from pre-primary level to higher education institutions, including technical and vocational education and training institutions in a majority of countries; only a few countries could afford to close in certain locations only, and a tiny fraction has reopened partially; some of them have already been closed again, with no certainty of being opened even during the third academic year. In fact, the second wave signalled trouble for the second and third consecutive years. During the third wave, cautious

![Figure 1](https://en.unesco.org/covid19/educationresponse)

**Fig. 1** Impact of COVID-19 on School Children: Global Statistics, 2020. Source: https://en.unesco.org/covid19/educationresponse
attempts are being made to reopen the universities and colleges in many, but not all, countries, lest the third academic year is also affected.

Closures of schools and other learning spaces have impacted 94% of the world’s student population (UNESCO-UNICEF-World Bank, 2021) and it is widely feared that the education crisis may lead to a generational catastrophe. Permanent loss in learning opportunities among millions of youths is a real fear, which may amount to a loss of trillions of dollars to the world economy. Even during the pre-COVID-19 period, there was a large number of students around the world who were deprived of school education for many reasons. Children in Sub-Saharan countries, and many countries in Asia are major victims. Almost 47% of the world’s 258 million out-of-school children are in Sub-Saharan Africa (United Nations, 2020). Similarly, in Asia, more than 800 million children—across South, East and Southeast Asia—have been affected by the closure of schools due to COVID-19 (UNICEF, 2021). Almost 35 million children from South Asian countries, mainly from Afghanistan, Pakistan and Bangladesh and Sri Lanka, were unable to go to school even during the pre-COVID-19 period due to civil unrest, insecurity, poverty and other reasons (UNICEF, 2021). As high as 320 million students have been affected in various forms in India (Tilak, 2021). Now with the emergence of the pandemic, activities to bring education to these areas have been completely hampered. Further, in developing countries and elsewhere, a large number of financially disadvantaged students remain in schools only with the support and assistance of schools, such as the free midday meal and financial aid. Now the pandemic has derailed all these types of programmes.

It is important to underline that the closure of schools will have a devastating effect on the future of higher education also. Ensuring school education for all students is critical for the expansion of higher education. Moreover, quality school education is essential for quality higher education. Therefore, any change in school education will also resonate in higher education. It is to be feared that the closure of schools and depriving a large number of students of the school experience would become a colossal disinvestment in the future of higher education.

In this overall context, this article seeks to discuss the implications of COVID-19 for higher education. The experiences of dealing with the new crisis, the changes in society and personal lives caused by it, and the irresistible penetration of digital devices—all these changes mark the beginning of a new world education crisis. How nations respond to these changes, brought about by the pandemic, will play a major role in determining the destiny of nations. The experiences will remain historical lessons for future generations. The present generation will learn valuable but hard lessons from this experience, and from which future society will learn even more. Hence, discussions about the present are very relevant. What has been the immediate reaction of the higher education system to the outbreak of the pandemic? What are the changes that have taken place in various aspects of higher education? How is the pandemic going to change the future of higher education and research? It is hoped that by reflecting on these questions it will be possible to get a comprehensive picture of the changes that the pandemic has brought to the higher education system. To deal with such questions, steadfast neutrality and commitment to facts and realities are essential.
The Global Lockdown and a Period of Hibernation and Uncertainty in Higher Education

Although the pandemic has affected the entire education sector, the effects on higher education seem to be severely devastating. Higher education is considered to be the gateway to employment; therefore, it is primarily the responsibility of higher education to develop necessary skills and job readiness among graduates and provide these graduates with ability to adapt to the changing needs of the labour market and the future society at large. However, the entire higher education throughout the world is either inactive or unable to prepare students in its fullest sense, with as many as 220 million students globally having been affected by the crisis. It is feared that the pandemic will cause a global loss of US $10–17 trillion in terms of life-time earnings, or about 14% of global GDP of 2021 (World Bank, 2020a, b; UNESCO-UNICEF-World Bank, 2021). According to Psacharopoulos et al (2021), the loss could reach as high as $30.7 trillion. It is widely felt that economic recovery will take time, the likely consequences being more serious than the ‘great recession’ the world experienced during 2007-09 (Altbach and de Wit, 2021).

COVID-19 appeared as a bolt out of the blue and has obliged universities and institutes of higher learning to traverse an unprecedented crisis. The ever-buzzing university campuses have suddenly become deserted places. There has never been a time in global history when formal education has undergone such a whopping crisis. The most notable epidemics we have seen in recent times are the Black-death or bubonic plague that ravaged Europe in the 14th century, and the Spanish flu that caused mass deaths in the early twentieth century. The Black-death engulfed half the population of the European continent. About 40 million people were affected by the Spanish flu, which was declared as ‘non-notifiable disease’ (Killingray, 2003), meaning no action could be taken. During the bubonic, plague schools and higher education institutions were all completely closed. The University of Oxford in England and others were shut and its students and faculty barred from the campus. But by the time of the Spanish flu in the twentieth century, though schools and colleges were closed, alternatives were attempted. For instance, “[m]any colleges such as the University of Montana held classes outside, while Elon College in North Carolina moved its infected students to the gymnasium that had been converted into an informal [place] to isolate and care for those who had fallen ill” (Atterberry, 2020). Another important development during this period was the use of correspondence classes as a way of sending study materials to students’ homes through the postal system; use of telephones to deliver education failed and, of course, e-learning and online learning did not exist at that time. During the period of the Spanish flu, medical teams visited classrooms and regularly inspected school and university students and arranged for them to be taken to their homes for care when needed (Stern et al., 2009).

But the challenges faced by institutions during the present COVID period are quite different. The immediate response of higher education institutions to lock down was a set of reflex actions. In almost every country, universities
and colleges were closed and immediately all their day-to-day operations were suspended; classroom teaching was terminated; examinations were cancelled; entrance tests and admissions procedures were kept on hold; students were evacuated from hostels and were asked to go home. No access was provided to research infrastructure—libraries, laboratories, archives, and museums or to auditoria, parks, canteens, etc.; field work for research was stopped; conferences, seminars and meetings were cancelled or postponed indefinitely; internships were cancelled; recruitment activities were suspended; job-offers were withdrawn; and so on. At the time of the announcement of lockdown, researchers who were on field work collecting information suffered a major setback. They all had to abruptly stop the data collection process and return home. Students and other researchers who rely on libraries and laboratories for their research were in big trouble. In some places, universities saw themselves used as isolation centres for those infected with the virus. In short, all scheduled academic activities covering planning, funding, management, admissions, recruitment, teaching-learning, laboratory based practical work, seminars, evaluations, examinations, research and support services were either indefinitely deferred or cancelled.

All traditional, conventional development plans and strategies of institutions were displaced; the 2019–2020, 2020–2021 and even 2021–2022 university calendars and plans along with students’ plans including any planned study overseas have been jeopardised. In fact, as per a QS (2021) survey, many student (and institutional) plans have been completely abandoned. Those students who got admission to international universities could not join academic programmes due to travel restrictions and global lockdowns, causing great emotional distress to students and parents. At the same time, the inability of foreign universities to admit international students has not only affected the income of those reputed universities but also campus diversity which has a decisive impact on the intellectual emotional and multicultural milieu they enjoyed. Already a significant drop has been reported in the number of students seeking admissions abroad. For example, there was a drop of 43% in foreign student enrolments in American universities in 2020 (Marklein, 2020). In Germany, there was a 20% drop in international students in 2020–2021; and in Australia, applications for student visa have dropped by 80–90% (Farnell et al., 2021). In China and Hong Kong, as many as 84% of the students has withdrawn their interest in studying abroad (Mok et al., 2021). Overall international student mobility has come down very significantly. The universities which had attracted many students from abroad and which are dependent upon student tuition (e.g. those in USA, UK, Canada, Australia and New Zealand) have had a very tough time when it came to managing resources. Economic activities of many of those countries were also affected, as foreign students also spend money on many activities outside their education. COVID has caused a sudden awareness among all the dangers of overdependence on international students. International higher education, after all, is already a major industry, and with COVID this gets further commercialised (Altbach and de Wit, 2021).

It is clear that the catastrophe instigated by the COVID-19 pandemic has affected educational institutions indiscriminately. The impact has been global, affecting both rich and poor nations alike; surprisingly, the effect is marginally higher in richer regions of the world (Table 1). The economic sustainability of nations did not help
during the pandemic. Figures given by Arnhold and Bassett (2021), based on the calculations of the World Bank, indicate that low-income countries as well as high-income countries, whether in Sub-Saharan Africa, South Asia, North America or Europe, had to close their institutions, affecting the entire socio-economic spectrum of students. Needless to say, a situation arose where all basic characteristics that determine higher education vanished. Higher education systems across the world went completely into hibernation as entire educational and research processes came to a standstill, with the dark shade of uncertainty over how long it would last looming overhead.

Teachers and students responded to the first phase of COVID lockdown as a period of hibernation—many teachers saw this as a windfall of leisure time to spend in their homes. In those early days, teachers were immersed in their hobbies and academic activities for which they did not find time earlier. There was a little respite from preparation for classes and long hours of lectures. The students too enjoyed relief from academic pressures, enjoying their time on social media and so on. Teachers and students who were tested positive for the virus engaged themselves in sharing their experiences during illness with others through social media. But the teachers working in private education institutions, as well as teachers working in guest, contract and non-tenure vacancies, were subjected to agony arising from fears about their future. This was exacerbated by delayed payment of salaries and other service benefits to such teachers. In some, or many, cases, salaries of non-tenured/contract teachers were cut down considerably. Even tenured teachers were affected (Greenfield, 2021). This trend confirms the view that teachers in the higher education sector align closely to the idea of labourers in factories in a neoliberal market economy, so are treated as a dispensable commodity.

The impact of the pandemic on the economy was most clearly reflected in the finances of universities. Unemployment and loss of income adversely affected

| Countries by regions/economic levels of development | Affected students | Total no. of students | % |
|-----------------------------------------------------|------------------|----------------------|---|
| High-income countries                              | 53.5             | 54.1                 | 99|
| Upper middle-income countries                      | 97.5             | 97.9                 | 96|
| Lower middle-income countries                       | 65.4             | 66.4                 | 98|
| Low-income countries                               | 3.8              | 4.1                  | 93|
| East Asia and Pacific                              | 72.4             | 73.5                 | 98|
| Europe and Central Asia                            | 36.9             | 38.0                 | 97|
| Latin America and Caribbean                        | 27.0             | 27.1                 | 100|
| Middle East and North Africa                       | 14.3             | 14.3                 | 100|
| North America                                      | 20.6             | 20.6                 | 100|
| South Asia                                         | 40.5             | 40.5                 | 100|
| Sub-Saharan Africa                                 | 8.4              | 8.5                  | 98|
| Grand total                                        | 220.1            | 222.6                | 99|
enrolment in higher education. In a study based on 68 private colleges in USA, Whiteford (2020) found that 85% of institutions experienced a fall in their tuition and fee revenue, 87% of institutions lost revenue in auxiliary services, and 90% lost revenue from summer programmes. As many universities rely heavily on student fees and other sources of income generated through services provided to students, closures of campuses for medium to long periods were a big blow to higher education institutions. In many countries, students did not pay fees, or rather were unable to pay fees, as personal incomes plummeted. In some countries like India, the universities were required to refund the fees if students opted to cancel their admissions after joining new courses. Public universities and colleges in developing as well as advanced countries seem to be facing severe financial crisis due to the sudden fall in revenue. Many private universities have reduced the number of their employees or stopped recruitment to the new positions. The financial position has become so weak that the credit ratings of many private and public universities have fallen (Radecki and Schonfeld, 2020). The pandemic has a shattering effect on the revenues of universities across the globe, with a 10% fall in the share of the budget allocated to education (World Bank 2020a, b). As Schleicher (2021) observed, spending on education may be compromised in the coming years. Education is not a priority area in the COVID-19 stimulus packages that governments have offered; it accounted for only 2.9% of the total, which varied between 2.92% in Europe & North America and 0.41% in Asia and the Pacific (UNESCO-UNICEF-World Bank, 2021). The share of higher education is not known, but it could only be insignificant. According to Altbach and de Wit (2020), “It seems impossible that higher education will have a high priority in national recovery plans” and in case of poor countries the outlook is indeed very bleak and in the poorest countries the “bleakest”.

The expectation at the time of the lockdown was that any closures would only be for a short period of time and that the normal offline classes would be soon resumed after the lifting of the lockdown, which was global, initially announced for a short period of time but which was repeatedly extended.

The Second Phase of Lockdown and the Beginning of ‘Emergency Remote Teaching/Learning’

When institutions were closed abruptly in the middle of the semester in early 2020, many were hopeful that they would reopen soon. But in a short period of time, their hopes were shattered. As the chances of reopening campuses and resuming regular classes remained slim, the need to revive educational activities was recognised and the idea of living with the Corona virus slowly emerged. Institutions entered into detailed discussions about the paths to follow in order to revive learning and teaching activities, and to manage continuity in learning, without breaking the education cycle. It marked the beginning of a new educational process relying predominantly on digital, remote learning systems. During this period, academic activities were gradually resumed with the help of digital technology. Meetings, seminars and classes were held online in virtual mode. Teachers started adapting to the new culture of ‘teach-from-home’ and students ‘learning-from-home’. All higher education institutions set their own timetable
for remote teaching and learning programmes. The continuity of the teaching-learning process in higher education was thus restored, in an unprecedented manner never before seen in the history of the formal education system. Advancements in information technology enabled the smooth transition from offline to online education.

Thus, after the initial sudden closure of the institutions, many countries entered the second phase and quickly adopted methods of remote teaching/learning. The idea of starting classes through online/remote learning was not there in the early stages of the pandemic, but soon the practice became widely used throughout the world not only in higher education and research, but also in school education. Google Classroom, Google Meet, Zoom, Crisco Webex, Microsoft Teams, Syncpad, etc., have become common digital platforms in many universities. Technology helped with the organisation not only of classroom teaching, but also of discussion meetings, viva-voce examinations, national and international seminars, conferences, training programmes, interviews for recruitment, and even graduation ceremonies. As organising webinars became relatively easier, university faculty interested in gaining additional scores on their performance scale began organising them in increasing numbers. The number of webinars has risen to such levels that serious scholars began facing ‘webinar fatigue’. However, on the whole, digital technology is seen as the saviour from the present crisis, and as the modern pillar of education, as teachers, students and administrators have slowly gained expertise in handling the digital gadgets.

Higher education institutions have been among the very few organisations that restored operations, though alternative modes, to a considerable extent. A good number of higher education institutions did not have to struggle much to continue their work through this alternative mode, as even during the pre-COVID era, they were using digital technology though on a limited scale for teaching, laboratory-based activities, project work and special lectures, besides for administration. As the first wave of the COVID began to wane, some countries and universities have attempted reopening their campuses. But this could not continue, as many of the countries were to once again close their institutions with the beginning of the second wave of the pandemic. So, the use of remote teaching/learning has been recognised as the only alternative in higher education. On the whole, relative to school education sector and many other sectors in a country, higher education institutions have used and continue to exploit, with some ease the potential of remote methods with no serious hindrance. Teachers have somewhat easily adapted to online teaching and research and online meetings and webinars. With the on-set of the third wave, the effects of which have been expected to be serious, though not very serious, universities and colleges have cautiously began to partially reopen; yet, the virtual system is viewed as a very important way of teaching-learning in higher education and is here to stay.

**Effects on Research**

The field of research also underwent major changes during this short period. The delay in conducting and completing planned research projects has adversely affected research cycles, mental health of the researchers and their career
prospects. Most of the research projects based on field level data suffered the most and some such projects were discontinued. Students pursuing research degrees at universities and those nearing the end of funded projects faced a major crisis in the final stages of completing their research. This has given birth to a new perspective on the practicalities of the procedure of carrying out research while submitting new research proposals. To note briefly, researchers have been reluctant to propose research projects that would require collection of data from humans and human-inhabited areas. Alternatively, armchair research became the preferred method during this period. E-books, e-journals and digital libraries became useful. There is thus a new shift from face-to-face data collection, through empirical mode to telephonic and virtual modes of data collection and also through online experiments, prompted not by any change in perspective on research but due to change in circumstances (Christia and Chappell, 2020). Amazon’s Mechanical Turk and Harvard’s Digital Lab for the Social Sciences are new trends in this direction.

Another important trend seen in the field of research is the proliferation of research studies related to COVID. Research publications on COVID-related issues increased exponentially during this period (Palayew et al., 2020). The massive influx of publications on COVID obliged the editors/publishers of research journals to speed up the publication process. Charges for publication in journals have been waived for research papers on various dimensions of the pandemic and they are published without being subjected to rigorous normal peer review processes. This would make these studies (whether scientific or sociological or humanistic) vulnerable to criticisms about objectivity, insight, and research honesty. Financial support has grown for research on the pandemic. For example, the Social Science Research Council in USA began to offer ‘rapid-response research grants’ and launched a series of initiatives devoted to understanding from a social science perspective, the pandemic’s immediate impact, as well as its lasting consequences. On the whole, funding for COVID-related research has increased in many European countries as well as in a few outside Europe (EUA, 2021). At the same time, the pandemic heavily curtailed most clinical and other biomedical research and redirected research to focus on COVID. Research in other areas has also been severely affected. But this trend of additional focus on COVID-related research may, however, not continue once the pandemic comes under control; and other areas may not regain the priority they received in the past in funding, which was anyhow not especially high in many countries.

At the same time, there were also some more unexpected benefits to academic research. There has been a lot of research collaboration at the international level in the field of medical and pharmaceutical sciences. Discussions and presentations on very serious topics related to COVID have taken place through e-mails and online platforms across borders (Xu, 2020). This has been a positive development. Although the emergence of research collaboration was thought to be the beginning of promising international collaboration, this period has also witnessed the intrusion of unhealthy competitive and market-focused features into research, particularly relating to vaccine development. Research initiatives related to the COVID vaccine have become a platform for covert and overt competition for a number of reasons,
including personal achievements, institutional achievements, commercial competition, and geopolitical factors.

The fall in number of international students and reduced international mobility of research faculty are also feared to have a major adverse effect on the quality and quantum of research. It is well established that students researching in other countries are more likely to experience an intellectually advanced atmosphere, and broadening of their minds, vision and approach (Carlson and Widaman, 1988; Drews and Meyer, 1996; King and Young, 1994). Hence, the decline in the number of students going abroad for graduate studies may adversely affect the quality of research. Research across borders also takes place normally through cultural exchange programmes, which were severely affected due to the pandemic. Academic debates can take place online, but true cultural exchange does not.

**Emergency On-Line Teaching and Learning**

To what extent has online teaching and learning introduced on an emergency basis been effective and a reliable method in higher education?

A section of academics are enthusiastic about the remote mode of teaching and learning, and are optimistic that this is here to stay. Potential advantages of online programmes in education have been highlighted in the literature by many scholars (Bartolic-Zlomislic and Bates, 1999; Jackman and Rosenberg, 2000; Taylor, 2002; Curtis and Lawson, 2001). They include the ability of virtual programmes to reach remote corners of the world and become accessible to all without discrimination, thus assuring a high degree of inclusiveness; secondly, flexibility and the convenience of studying from any location by students, along with the possibility of expressing their thoughts through open book examinations, are important advantage that the students value; thirdly, online programmes are highly cost-effective, reducing costs of maintenance of physical campuses, saving on additional staff recruitment and their salaries, and reducing students’ expenditure on travel, and on living outside homes; and fourthly, they are environmentally friendly, as travel is reduced on commuting to universities, and travelling to attend seminars, conferences and meetings along with savings on paper and printing. Some (Bettinger and Loeb, 2017) also claim the potential of online programmes to offer high quality education.

The weaknesses of remote teaching and learning are indeed too many. Before these weaknesses are examined, first the practical problems that nations across the globe have been experiencing during the pandemic are worth looking at. There are serious empirical problems in the present online teaching and learning methodology, as this is a crisis-driven ‘emergency remote teaching’ programme ( Hodges et al., 2020), and it started all of a sudden without any preparation and without ensuring any basic pre-requisites, which is thus different from well-planned online programmes, though online programmes *per se* are also associated with some major weaknesses.

Remote learning during the pandemic has been a major setback for students who were deprived of the necessary digital tools. Due to spatial, economic and social reasons, a large section of students across the world has been unable able
to participate in the remote learning process. The availability of Internet and online resources created many challenges for teachers and researchers in higher education to advancing their work. While over 95% of students report having a computer to use for working at home in Denmark, Slovenia, Norway, Poland, Lithuania, Iceland, Austria, Switzerland and the Netherlands, in Indonesia only 34% do (OECD, 2020). The majority of Asian and African countries have faced a grave learning crisis in the absence of digital devices to continue education through remote learning systems. The Internet penetration in the Middle East and North Africa is reported to be less than 70% in many countries, with Sudan and Yemen facing dire impacts with less than 30% (UNICEF, 2021). Global figures indicate that as many as 25% of the students struggle to become a part of the learning process in the absence of digital tools. The inadequacy of digital learning tools and connectivity became a serious hurdle for many students at tertiary level. Even in rich countries, it is understandable that students face serious challenges and struggle due to a lack of digital connectivity. Economic background of both the institutions and students was an important precondition that determined resumption of classes in a professional manner through remote learning systems. This has opened up a whole new level of inequality among teachers, students and researchers in higher education. Any digital gap cannot be narrowed to the definition of a mere ‘lack of equipment’. It is much more: it includes capacity to handle the devices and the ability to effectively use them for learning, which is also not a privilege for everyone. Unequal digital access creates a major crisis that is likely to alienate our youth from education institutions and adversely affect quality in a way that has never been seen before. The pandemic has thus put forward another dark side of educational inequality overarching spatial and economic diversities.

As discussed earlier the remote learning initiative, including live streaming of lectures in real time, has been taken up as an emergency programme, as an ad hoc provision of online education. The universities, colleges, administrators and higher education agencies in many countries started remote learning initiatives without any proper planning of curricula, time schedule, guidelines, etc., on one hand, and training and professional support to teachers and students to make the teaching as well as learning effective on the other hand. A good number of teachers might not have had any experience on online teaching. For example, as per the Irish National Digital Experience (INDEx) Survey, 70% of academics had never taught online in the pre-COVID period in Ireland, with similar figures in the UK, which may also be not much different in other European countries (IAU [International Association of Universities], 2020). No training was provided to teachers or students on digital pedagogy, online class management, online social skills, technological skills, skill of quick fixing the technical hitches, conducting online examinations and so on. Remote teaching/learning has been found to be more difficult in fields such as clinical medicine, veterinary sciences, and even arts and some social sciences, some of which have heavy components of practical work and fieldwork. But all students and teachers were expected to become adept at using gadgets and online platforms overnight. As many universities did not consider remote learning to be long-lasting, they have not attempted even subsequently, to make sustainable effective curricula and pedagogy.
Students were already depressed due to lockdowns, institutional closures, uncertainty about further education and bleak job prospects. The pandemic has changed everyone’s lifestyle and no one is comfortable with these changes, least of all college youth. Added to all this, unplanned remote learning, poor digital connectivity, inadequate equipment, the inability to interact directly with teachers and peers have created serious psychological and health-related strain leading to severe emotional turmoil among students. As a result, a large proportion of students have found the experience with online learning so frustrating that they risk losing interest in education and decide to drop out of college; and for teachers it has also been a challenging time to work under such conditions, and for them, the experience has been so depressing that many have left the academic profession and are looking for alternative jobs to make a living, though among the teachers one has not witnessed the phenomenon of ‘great resignation’ of the kind that has been experienced in other sectors of the economy. All this causing boredom, anxiety, frustration, anger and even despair, seems to be forcing some students to the extreme measure of committing suicides. Available evidence confirms that the suicide rate among students has increased during the pandemic period (Philip, 2021). Globally, the number of students who committed suicide during the pandemic period is staggering. For example, in a study in China (Hou et al., 2020), it was reported that 31.3% of high school students thought of committing suicide and 7.5 percent of students attempted suicide during this period. In the prestigious institution of the Indian Institute of Sciences, India, four students were reported to have committed suicide in seven months due to mental health issues caused by COVID (The Print, 21 Sept. 2021). The inability of institutions to pay salaries to teachers has also led teachers in some places to resort to the same extreme measure of ending lives. These socio-psychological dimensions are too serious to ignore.

Due to the severe financial crisis across the world caused by COVID, a large section of students who have to enter college education would think twice about proceeding to higher education and those who are already enrolled in higher education would have a rethink on continuing their studies. Many students were forced to go for jobs during institutional closures and digital instruction. The unwillingness of these students to re-join their educational institutions and plummeting numbers in new admissions are indeed major concerns. In some countries, early marriages and early pregnancies, partly stimulated by world-wide lockdown, can also have an adverse effect on enrolments. The global economic downturn triggered by the pandemic may be largely resolved once the pandemic has calmed down; but the number of dropouts falls in enrolments and other effects will have serious implications for the future of higher education.

Now, let us look at the inherent weaknesses that characterise online programmes. In fact, the very technology in education has certain inherent deficiencies leading to serious compromises in the teaching-learning processes. First, it is widely acknowledged that students do not learn in remote learning as much as they do in regular face-to-face learning environment (Clark, 1983; Coates et al., 2004; Brown and Liedholm, 2002; Alpert, et al., 2016; Wakil et al., 2019). Online classes are not as effective as face-to-face classes for most students. This holds not only in the case of school education, but also in higher education, and even in case of advanced
European countries (Farnell et al., 2021). Being in physical classrooms with teachers and other students automatically creates a kind of social pressure that motivates students to engage more seriously with studies. In addition, one important area that students miss in remote learning mode is learning from peer groups, which educationists believe to constitute nearly one-third of total learning that takes place in formal learning systems. ‘Learning to live together’ that the Delors Commission (1996) suggested as an important pillar of higher education remains a chimera in virtual learning systems.

Second, an important limitation of remote learning is the lack of opportunities for peer learning, personal interaction between teacher and student and among students, which is essential for socialisation, an important function of education. Students miss the valuable social atmosphere and treasured campus experience in remote learning methods. The social system of higher education institutions has an important role in character-building for youth. The remote learning system suspends all possibilities of a social system. This deprivation of social elements in the learning process heavily impairs the intellectual, emotional and social growth and overall personality development of students. Hence, students are unlikely to commit large amounts of time and money to consume online content (Schleicher, 2021).

Third, the educational practices adopted during the COVID period—particularly online programmes—create a situation where the academic habitat and the relationships between its various components are being redefined. The relationships between work and home, between the teacher and the student, between the student and digital devices, and among teachers and among students have gone through a significant change. In the process, the very nature and concept of higher education are subject to distorted definitions, causing irreparable cracks in the higher education edifice. Digitally disseminating education will place man away from the cultural framework of indigenousness. This will undo all the progressive advances that the global community has built up so far.

Remote learning has, to a large extent, led teachers to change their outlook on their work. Job security and possible future changes in the nature of work, including outsourcing of teaching and online programme management, may contribute to the casualisation of academic activities, demoralising the teaching profession. “De-professionalisation and fragmentation of academic labour, casualising higher education work and creating more low-paid insecure jobs” may become standard features of higher education (Ivancheva et al., 2020).

Despite the awareness of some these weaknesses, remote teaching and learning is viewed by many as an enduring system. The possibility of the new concept of ‘wholesale distribution of education’ through digital technological tools being incorporated into the education system cannot be ruled out in future. Curriculum, teaching methods, assessment systems, and other areas related to education, including education administration, are being revised. As the need for the digital experience has increased tenfold for teachers, students, researchers and administrators, the use of digital tools and online resources have been popularised on a commercial basis. As a result, one also notices a sporadic growth of private commercial online coaching enterprises and digital start-ups with the ostensible objective of supplementing, but actually of replacing, public efforts, and making money. In fact, private
commercial players have been quite active in taking advantage of the situation. They are also confident that the demand for the role they play will increase in the near future.

**Planning for the Uncertain Future**

The COVID pandemic has been a huge academic shock to the entire higher education community and has sown the seeds for many structural changes that could profoundly influence the future of higher education everywhere. Posing formidable challenges to existing organisational cultures and societal roles, it has already reshaped higher education in an unprecedented way. An important question is, will adaptations made during the crisis as temporary transitory mechanisms become part of higher education forever? Or can we switch back to the old-fashioned way of teaching, learning and research after the pandemic? While there are no definite answers, it appears that virtual teaching/learning is here to stay. “The technology can be leveraged as an effective instrument for enhancing the quality, but it is too simplistic to deduce that future education shall be all virtual with no place for the brick-and-mortar universities” (Qamar, 2021). Realising that both modes will coexist, the concept of blended learning is becoming more frequent and it seems that it is possible that this will become the norm in the medium to long term.

Even for the hybrid model to succeed, there are two basic pre-requisites that need to be fulfilled on a priority basis. First and foremost is the provision of digital facilities across the entire system of education, in addition to normal physical infrastructure and quality teachers. Educational institutions, as well as students, need to be equipped with these facilities. The pandemic has brought a greater focus on educational and social inequality. This needs to be addressed. Second is empowering all the players in the system—teachers, students, researchers, administrators, planners and policy-makers with extensive training facilities to effectively use these facilities for the delivery of quality higher education. In the absence of these two, digitally supported learning activities pose major challenges in normal circumstances and grave problems during times such as the pandemic. At the same time, it has to be clearly noted that digital, remote education cannot and should not substitute the conventional system; it needs to be planned in such a way that it will support the face-to-face mode of teaching and learning, safeguarding all its positive features. Both require heavy investment in education, which means the tendencies to cut public investment in higher education and research partly because of the effects of the pandemic need to be significantly reversed. Thirdly, the relative composition of the blended model has to be carefully decided, so that the online method does not dominate, and the conventional model is not shunted to the periphery. Ideally, it should be the other way.

The present situation can also be viewed as an important opportunity to bring in revolutionary reforms in higher education and research that are widely recognised as long overdue for transforming higher education systems in a big way. The need to reform higher education in line with the labour market and industrial interests has been debated around the world for quite some time. A large number of educational
institutions have undergone transformation in this direction. Re-imagining higher education as the architect of not just the world economic order, but also of the entire global society, instead of society or industry shaping education, can be possible only when education is understood in its true sense. Higher educational shall have to be ready to dream of its role as the architect of culture, society, economy and polity. For that to happen, the university system needs to be structurally reformed. While doing so, we need to develop, immediate, short term, medium- and long-term plans for developing robust higher education and research systems that contribute to knowledge development, providing excellence and reducing inequalities, and which can face future emergencies.

One of the fundamental lessons that the pandemic has underlined is the need to equip education systems to face unforeseen catastrophes. In the human capital theory, Theodore Schultz (1975) argued that strong dynamic human capital stocks have to be built in such a way that it not only helps restore equilibrium from a state of disequilibrium, but also that it helps avoiding disequilibria altogether. After all, “the ability of individuals and families to restore equilibrium in their private economic domain is enhanced by quantity and quality of their human capital” (Schultz, 1990, p. 219). Obviously, higher education has an important role in avoiding not only economic disequilibria, but also a system-wide disequilibrium of the kind the world experienced during the pandemic. This is indeed a challenge, requiring imaginary thinking and innovative ideas on revitalisation of higher education systems.

Finally, one may note the imperative of the policy reforms. As the World Bank (2020c, p. 1) warned,

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.

Declarations

Conflict of Interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

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