Reimagining and redesigning teaching and learning in the post-pandemic world

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Abstract
The pandemic has provided a unique window of opportunity for higher education institutions to change because of the disruptions in normal ways of operating. The pandemic crisis has created opportunities to revise our strategies, internal and external partnerships, teaching methods, student pathways and recruitment approaches, incentive systems, faculty expertise, assessment approaches, and overarching goals of higher education. This article discusses a proactive stance suggesting that higher education must respond not only to the past, not even to the present, but to future needs.

INTRODUCTION

It is normal to hear how much the world has changed and how much it is going to be different in the future. In contrast, when we talk about higher education, we hear people saying that nothing will change once the crisis of the pandemic becomes more manageable, and that, in the end, we will return to “business as usual.” We argue that it is both: on the one hand, many institutions of higher education in the world are just waiting for the thunderstorm to be over, and on the other hand, that because of what has happened during the pandemic, some have recognized the need to combine what has worked in the face-to-face educational experience with what has worked with “Zoomified” teaching. The shutdowns and paralysis resulting from the pandemic has also helped higher education review and even question the validity of a variety of assumptions and dogmas in what we thought were the unchangeable foundations, central assumptions, and building blocks of higher education.

Now, because of the pandemic, we are learning that not all these core beliefs are essential and that even if some of those foundations are removed the structure of higher education will not collapse. In fact, if we remove some of those core assumptions, the higher education building may be stronger than ever. For that matter, we genuinely believe that this is the kind of thinking and attitude that administrators and practitioners must have as we think about the future of the teaching–learning experience in higher education.
When we were younger, we read something that we have not been able to accurately attribute (possibly from the Quotable Quotes section of Reader’s Digest), that said "When I think about the future, I become concerned about the present." After all these years, this quote remains very meaningful, especially during the pandemic. In today’s world, if we think about the future of higher education, we should be concerned about the present, because the crisis has shown that colleges and universities were not prepared to address a crisis of such magnitude. Consequently, there are many signs in the present that need to be taken into consideration when reimagining the future higher education landscape. The good news is that the world in which we are living is increasingly interconnected, educated, and integrated, providing increased opportunities for creating more and better colleges and universities. However, it appears to us that little sustained and coordinated effort has been made in systematically analyzing expected impacts that rapidly changing economic, social, technological, and political context will have in reshaping higher education.

Of course, we should be mindful that the external environments influencing higher education are constantly changing and challenging and not easy to assess. We should not forget that there were critical challenges, distortions, inadequacies, and shortcomings facing higher education before the pandemic, which have become exacerbated during the pandemic, and will remain extremely critical in the future.

DEMOGRAPHICS AND ACCESS TO HIGHER EDUCATION

Soon higher education is poised to grow. However, there are factors beyond the mere measuring of enrollment that must be considered to see a much larger picture. In fact, the disparity in access to higher education has been problematic in the past and continues to be a tremendous challenge, even considering the magnitude of growth that, despite the pandemic, higher education will continue experiencing globally. According to a recent study developed by UNESCO IESALC entitled Towards Universal Access to Higher Education: International Trends (Vieira et al., 2020), in the last 20 years, the higher education (HE) gross enrollment rate worldwide almost doubled, going from 19% to 38% between 2000 and 2018. Additionally, the number of students currently enrolled in tertiary education (university and non-university) is 38% of the total population in the 5-year age group span immediately following secondary school graduation.

This dramatic growth is evidenced by what has happened in India over the past two decades. According to a 2019 Brookings Institute report entitled Reviving Higher Education in India, India’s higher education system has grown to be one of the largest in the world, with close to 52,000 institutions and enrollment now four times of what it was in 2001 (Ravi et al., 2019). As a point of comparison, in the United States, during the same period, higher education increased only 7% in terms of student enrollment and 9% in terms of the number of higher education institutions. At the close of the second decade of the 21st century, there were 35.7 million students (about twice the population of New York) enrolled in India’s universities and colleges. The gross enrolment ratio (GER) in India was 26.3% as of 2016 and represents more than double the GER of a decade earlier (which was 11.5% in 2006). The GER is the number of students enrolled in each level of education, regardless of age, expressed as a percentage of the official school-age population corresponding to the same level of education. For the tertiary education level, the population used is the 5-year age group starting from the official secondary school graduation age (UNESCO Institute for Statistics, http://uis.unesco.org/en/glossary-term/gross-enrolment-ratio).

According to the Statista Research Department (2020), the number of higher education institutions in India has increased to almost 52,000 by 2019. Put another way, over the past
10 years, there have been more than five new higher education institutions established per day, including weekends and holidays, but even despite such spectacular growth, it is estimated that over the next 5 years, India’s youth population will continue to increase meaning that the current education system will prove inadequate in accommodating the age group of 18–22 considering that 3 out of every 10 persons in India’s estimated population in 2018 of 1.3 billion will be in the age group of 18–22 by 2023 (ACEI-Global, 2020).

These data raise important questions such as “How many more colleges and universities would be needed to provide access to higher education?” “Is the current operational and delivery model of those institutions adequate to cope with such demand for access?” And this is just the case of India; the challenge of access to higher education at a global scale is quite significant, especially in most countries and regions of the world with large youth segments and limited resources, such as the case of the Sub-Saharan region.

An analysis of the higher education situation in China confirms the rapid growth and changes in world-wide higher education. In 2020, around 33 million undergraduate students were enrolled in degree programs at public colleges and universities in China and in that same year, a record number of around eight million students graduated from undergraduate programs at public colleges and universities in China (Statista Research Department, 2021a). That number was twice as high as the number of degrees earned at all levels of higher education in the United States (Statista Research Department, 2021b). Despite the enrolment challenges created by the pandemic (as described later in this article), these numbers are daunting.

In summary, it is impossible to disassociate the significant demographic shift being experienced at a global level from the shape and dynamics of higher education. Let us be mindful of the fact that in many parts of the world, especially in North America and Europe, these demographic shifts have taken place in graying societies with aging populations which, if sound migration policies are not in place, will create significant higher education hurdles resulting from the impact of decreasing student enrollments. This decline in European population is humorously illustrated by an article describing the celebration that occurred in a small Italian town of the first child born there in 28 years: https://www.bbc.com/news/blogs-news-from-elsewhere-35418101.

While Asia has the highest percentage of the world’s population, the highest growth in population is happening in Africa. Africa, which has traditionally not been given a prominent level of attention by established higher education, is projected to demand the greatest need for expanded access to, and quality of higher education, in the coming decades. Just to give an idea of the implications of this, by 2030, just eight years from now, 42% of the youth globally will be in Africa (United Nations Department of Economic and Social Affairs Population Division, 2015) and by 2050 the World Bank (2015) estimates that while the total population of Europe will decrease by 5%, Africa’s population will increase by 40%. Compounding the importance of this number, the World Bank (2015) estimates that more than 70% of the youth in Africa still live on a family income of less than two dollars per day.

These and other related significant demographic changes in the world will have significant ramifications at international, national, and local levels. We no longer can view the higher education agenda from a purely local standpoint (i.e., United States), but, as the world is increasingly interconnected and interdependent, we must consider a more holistic perspective: What happens in one part of the world, no matter how distant is, will be impactful here and what happens here is going to impact what happens there. It matters because education, at the end of the day, is the best formula for creating better life conditions.
THE VALUE OF HIGHER EDUCATION

Research conducted at the World Bank clearly correlates education with increased lifetime income for individuals, although it is at the higher education level where the largest economic returns are experienced when compared to primary and secondary education (Montenegro & Patrinos, 2014). Rates of return to investments in schooling have been estimated since the late 1950s. Montenegro & Patrinos’ report presents comparable estimates, as well as a database, that use the same specification, estimation procedure, and similar data for 139 economies and 819 harmonized household surveys. Among the findings are data that relate directly to this article and reveal the impact on the rate of return on investment in education, namely: the returns to schooling are higher for women than for men; returns to schooling and labor market experience are strongly and positively associated; and, most importantly, the returns from investments to tertiary education are highest.

Additionally, higher education is important for much more than just economic returns on investment. Let us consider, for instance, some evidence on the impact of higher education on health: Increased levels of education enable students to live longer lives (Lawrence, 2017); education is the single most important modifiable social determinant of health (McGill, 2016), and income and education are the two factors that correlate most strongly with life expectancy and most health status measures. Also, according to the American Public Health Association’s report entitled Education Attainment Linked to Health Throughout Lifespan: Exploring Social Determinants of Health (McGill, 2016), the social determinants of health are the social, economic, and physical environment factors that impact well-being, such as housing, access to health care, and employment. However, the length and quality of education cuts across each of these factors—it predicts employment and income, which influences where someone can live and the level of health care they can afford. Education is not just about what is learned in the classroom; it is also about the doors it opens to future well-being (McGill, 2016).

Also, higher education impacts citizenship and civic engagement. Different studies show that people with higher education tend to have better appreciation for democracy (Chzhen, 2013; World Bank, 2018).

Increased education also helps individuals challenge stereotypes, misperceptions, and misunderstandings about the world, about themselves and others, and develop the capacity to form deeper understandings of the world (Borgonovi & Burns, 2015). Addressing and confronting stereotypes is important as more frequently higher education graduates are increasingly mobile and work in multicultural environments requiring “otherness” capacity and awareness.

TECHNOLOGICAL CHANGE

A key challenge facing higher education is how to balance equality of opportunities and access, and at the same time make sure that the educational opportunities our institutions provide are of high quality and, more importantly, highly relevant. In other words, education is not only about providing students credentials but more importantly about assuring the relevance of their learning for success, preparing them for the uncertainties of the future. Do not forget that what we think today is so revolutionary, so innovative, is going to be seen by following generations as something outdated, out of touch with the reality of the time. The Slide Rule is a good example of how fast knowledge and learning changes. Only the older readers of this article remember the slide rule, a mechanical device widely used as a calculation tool in science and engineering up to the 1970s, becoming obsolete with
the arrival of handheld electronic scientific calculators. Today, a slide rule is confined to a dusty place in some museums. Similarly, many of today’s highly sophisticated electronic devices eventually will become antiques, or even worse, garbage.

Yet, at the same time, technology will reshape our understanding of the value of higher education. We live in a world that is increasingly robotized and automatized, a world of significant technological and scientific advancements; we also need to be mindful of the fact that, beyond the fascination for these new technological advances, we need to provide a social perspective to students as we teach them about the present and future world. Students must recognize the non-universal status of these technological advances, that for many people in the world, those for whom education is not an option, accessibility of this technology for a better life for those at the bottom rungs of the economy is not as certain as it is for those more economically privileged.

THE NEED FOR HIGHER EDUCATION CHANGE

It is often easy to generalize higher education based on our own individual experiences and perspectives making it difficult to realize inequities in higher education from one context to another, from one institution to another, from one generation to another, from one country to another. However, we must be mindful of contextual differences as we try to initiate changes for the future. These differences can create walls and distance between us that prevent us from recognizing new forms of knowledge and technology that are needed in the ever-changing world of tomorrow.

The need for change is something that has been haunting higher education for many years. As reported in a Forbes Magazine article in 1997, Peter Drucker said that universities were condemned to disappear because they were not responding to the needs of the future (https://www.forbes.com/forbes/1997/0310/5905122a.html?sh=712c672824b9). We may argue that he was exaggerating since universities are still around, but at the same time, he was stressing the need for change in higher education. The current pandemic has triggered some of those changes and has reinforced much of what Drucker was predicting. The pandemic caused the lockdown and closing of university buildings and the idea of the university as a brick-and-mortar institution was challenged as never before. During the spring of 2021, suddenly, the world’s educational systems became paralyzed, something never imagined by most international higher education experts.

The pandemic forced higher education institutions to cope with the urgent, rather than the important. A survey conducted in April and May of 2020, the middle of the lockdown, of presidents of higher education institutions in the United States by the American Council on Education (Taylor et al., 2020) clearly indicates that priorities identified by survey participants focused on issues related to survival of the institution, in terms of deciding to continue in some way the immediate delivery of teaching and indicated less focus on other strategic priorities.

In the April survey, presidents were asked to select up to five issues from a list of 14 they deemed most pressing. The top three issues to presidents at that time were “summer or fall enrollment,” “long-term financial viability,” and “sustaining an online learning environment.” In the May survey, presidents were asked to choose from the same list, with three additional issues and as in the April survey, “summer or fall enrollment” was the most pressing issue facing presidents in May. The next most pressing issue facing presidents was “deciding on fall term plans,” followed by “long-term financial viability of the institution,” “furloughing or reducing salaries for faculty and/or staff,” and “short-term financial viability of the institution.” The top three most pressing issues were the same for presidents
at public four-year institutions, private four-year institutions, and public two-year institutions. Concerns related to the mental health of students and faculty, international student enrollment, managing senior staff, addressing auxiliary staff, and responding to governing board concerns were low on their priority listing. Short-term survival overshadowed (understandably) long-term planning.

According to United Nations Educational, Scientific, and Cultural Organization (UNESCO) (n.d.) (https://en.unesco.org/covid19/educationresponse), more than 888 million children worldwide (across primary, secondary, and tertiary levels) continue to face disruptions to their education due to full and partial school closures and “Since its outbreak two years ago, the COVID-19 pandemic has disrupted education systems globally, affecting the most vulnerable learners the hardest. It has increased inequalities and exacerbated a pre-existing education crisis. School closures have ranged from no closures in a handful of countries to up to more than a full school year. Lack of connectivity and devices excluded at least one third of students from pursuing learning remotely” (No page number).

Compared to fall 2020, total undergraduate enrollment in the United States declined by 3.1% or 465,300 students (about half the population of Montana), for a total two-year decline during the COVID-19 pandemic of 6.6%, or 1,025,600 students since fall 2019, according to a report released by the National Student Clearinghouse Research Center (2021). Globally, more than 200 million students suddenly were unable to go to university, about 70% of international students had to return to their countries of origin, a sudden but unplanned transition to online teaching was implemented although about 40% of students were unable to continue education during the pandemic due to the digital divide (Salmi, 2020).

While this article focuses on higher education, expanding the discussion of the negative impact of the digital divide on learning, it is imperative to also discuss the pandemic’s impact on K-12 students, who will be tomorrow’s higher education population. The loss of learning because of the lack of access to technology has not happened just in countries in the developing world, but even in the United States where issues of connectivity and technology access have affected significant segments of the population. A report by Common Sense and the Boston Consulting Group (Chandra et al., 2020) of the digital divide for America’s K-12 public school students and teachers finds that the negative impacts are larger than estimated. Approximately 15 million to 16 million K-12 public school students in the United States, or 30% of all public K-12 students, live in households either without an internet connection or device adequate for distance learning at home, and of these students, approximately 9 million students live in households with neither an adequate connection nor an adequate device for distance learning.

Lack of access to the internet and a distance learning device during the pandemic school closures puts these students at risk of significant learning loss.

This report goes on to indicate that the digital divide is a major problem for students in all 50 states and all types of communities but is most pronounced in rural communities and households with Black, Latinx, and Native American students. Additionally, data that are surprising to us indicate that 300,000 to 400,000 K-12 teachers live in households without adequate internet connectivity, roughly 10% of all public-school teachers, and 100,000 teachers lack adequate home computing devices.

**IMPACT ON INTERNATIONALIZATION OF HIGHER EDUCATION**

For example, on matters of internationalization, prior to the pandemic, universities devoted too much attention to student mobility issues. As the lockdown became a reality,
however, it became apparent that universities would have to find alternate ways to foster an international dimension to facilitate a global student experience. This was especially true for institutions heavily impacted financially and operationally by the sudden absence of international students. This was the case for Australian universities, for whom almost 50% of their enrollment comprised international students and represented a significant financial problem and in terms of lost research that depended on international graduate students (Statista Research Department, 2021c.)

Another example of how problems in higher education brought on by the pandemic exacerbated challenges faced by colleges and universities before COVID is the case of international students in the United States. Fewer international students chose to study at US colleges and universities in recent years, according to a report by Boundless (2021). Even before the pandemic, international student enrollment had dropped, and in 2020, US schools saw a 72% decrease in new student enrollment compared to the previous year. Although the COVID-19 pandemic has been cited as a major factor in the decline, Boundless pointed out that international student enrolment in the United States had been decreasing even before the health crisis began. This trend accelerated in the fall of 2020 due to the coronavirus pandemic. The American Council on Education (2020) predicts that overall international enrollment for the next academic year will decline by as much as 25%. That means there could be 220,000 fewer international students in the United States than the approximately 870,000 there are now. One reason stated by potential international students for this decline is that the United States has more COVID-19 cases than any other country. Other reasons include disapproval among international students regarding the United States’ response to COVID-19 compared to other nations. A survey of US officials found that the top reasons for the decline were visa delays and denials, competition from colleges in other countries, and restrictive immigration policies under the former Trump administration (Study International, 2020). This report highlights the monetary impact of the decline of international students, labeling them as huge economic drivers who contributed $38.7 billion (about $120 per person in the United States) to the economy and supported 416,000 jobs during the 2019–2020 academic year. 

David DiMaria (2020) foresees six ways that the expected decline in international enrollment will change US higher education and economy:

1. Higher tuition: International students often pay full tuition and that matters because the tuition from foreign students provides extra funds to subsidize the costs of enrolling more students from the United States. At public colleges and universities, the revenue generated from international enrollment also helps to make up for cuts in state funding for higher education.

2. Weaker economy: International students contribute an estimated $41 billion (about $130 per person in the United States) to the US economy. However, the actual figure is surely much higher considering these students also pay various taxes to federal, state, and local governments. While a decline in international enrollment will financially hurt American colleges and universities, it will also decrease the profits of local businesses and the tax revenues of state and local governments.

3. Less innovation: One of the strongest factors that influence future international scientific cooperation is having students study in different countries. The pandemic has restricted student mobility and hinders the cross-pollination of ideas that serve to address global challenges such as combating climate change to eliminating future world-wide health crises. Additionally, economists at the World Bank estimate that a 10% increase in the number of international graduate students in the United States
raises patent applications in the United States by 4.5% and university patent grants by 6.8%.

4. Job losses: One analysis found that international students support 455,000 US jobs (NAFSA, 2021). International students who participate in Optional Practical Training, the program that allows these students to gain practical experience in their field of study by working temporarily in the United States, help employers fill critical positions when they are unable to locate qualified US workers. This is particularly true in certain science and engineering fields. As international enrollment declines, US employers will have a harder time filling job vacancies. This may lead companies to look for talent in other countries or relocate jobs abroad.

5. Less exposure to diversity: When students interact with people from cultures other than their own, it enhances their ability to think more critically. It also reduces prejudice. Since only 10% of US students study abroad prior to earning their bachelor’s degree, international students play a significant role in exposing US students who never go abroad to international perspectives. International students bring the world to campus and increase access to global learning for all. The result is a more globally competent workforce, which is important considering that one in five jobs in the United States is tied to international trade, and 93% of employers value employees who can work effectively across national and cultural boundaries.

6. Declining US influence: While more than 300 current and former world leaders were at one time international students in the United States, other nations are making concerted efforts to catch up. If there are fewer students from other countries studying in the United States, it will lessen the ability of the United States to influence future world leaders.

INSTITUTIONAL SURVIVAL

Globally, the pandemic induced economic contraction across the world, providing, as a result, fewer economic resources for governments as well as for students and their families. There is no doubt that higher education globally is experiencing higher dropout rates. Additionally, an increasing number of students are postponing their studies resulting in shrinking university enrollments worldwide.

There is also no doubt that the pandemic is impacting the viability of many institutions, a statement that is supported by the fact that in the United States, almost 600,000 higher education employees lost their jobs since 2020 (Bauman, 2021). Scott Galloway in 2020 developed an interesting (and we are sure, controversial) approach to determining which US higher education institutions will thrive, survive, struggle, or perish after the coronavirus pandemic. Galloway states that this dataset should not be taken as peer-reviewed or final; he considers it a working document that seeks to analyze and understand the US college and university landscape and to help universities craft solutions moving on from the pandemic. To view the data and listing of institutions see:

https://docs.google.com/spreadsheets/d/1CU3HrqstC2oV3CF3_di4yW6Y4K_CIrUJNEHCCKo7A/edit#gid=0

Galloway plotted 436 universities from the US News & World Report’s Best Colleges rankings across two axes (four quadrants): Value: (Credential × Experience × Education) / Tuition, and Vulnerability: Endowment / Students and Percentage of International Students. Low endowment and dependence on full-tuition international students make a university vulnerable to COVID-19 shock, as those students may choose or must sit out a
semester or year. (We find the role of international students in this analysis particularly germane to this article and volume.) Institutions were then placed into four quadrants:

1. Institutions that will thrive: Elite schools and those that offer strong value have an opportunity to emerge stronger as they consolidate the market, double down on exclusivity, and/or embrace big and small technology to increase the value via a decrease in cost per student.

2. Institutions that will survive: Schools that will see weakened demand and lower revenue but will be fine, as they have brand equity, credential-to-cost ratio, and/or endowments to weather the storm.

3. Institutions that will struggle: Tier 2 schools with one or more problems, such as high admission rates, anemic waiting lists, high tuition, or low endowments.

4. Institutions that will perish: Schools that combine high admission rates, high tuition, low endowments, dependence on international students, and weak brand equity.

While we can bicker about the reliability and validity of how Galloway has chosen where the institutions are placed within this chart, his work presents a novel way to consider the impact of the pandemic on long-term institutional survival and could be used to provide a roadmap for future institutional success and survival.

IMPACT ON TEACHERS AND PARENTS

The pandemic has had an unplanned and profound impact on higher education teachers. Most had to modify how, where, and when they work, forcing teachers to become multi-tasking experts, not only needing to be exceptionally good in his or her academic field, but also competent in other domains (such as designing courses for, and teaching with, technology—functions that usually were not part of their professional portfolio), and as some readers with school age and university children can attest, managing home-based teaching and learning has become a significant challenge, often resulting in an increased appreciation for the vital role of teachers.

CHALLENGES AHEAD FOR HIGHER EDUCATION

As we review moving forward to a post-pandemic higher education reality, we propose four major questions that call for scrutiny and a search for answers. First, how are institutions going to minimize student learning deficits that have resulted from the transition to on-line teaching and learning, given the access, financial, pedagogical, and digital divide issues previously discussed? Second, how will we keep students and teachers engaged, motivated, and in good mental health as we deal with unexpected and unplanned interruptions in traditional teaching and learning practices resulting from unrelenting pandemic-induced pressures? A third question that must be addressed is how to guarantee the integrity of testing and learning assessment that manifests itself because of off-site, non-monitored learning activities? Fourth, how do we mitigate the long-term academic impact of the worldwide economic crisis?

A recent article by Ted Sun (2020) highlights student disconnects and lack of engagement with remote learning. Among the common responses when asked on student feedback forms “What did you do during your recent online course?” students responded with comments such as: “I fell asleep.” “I was playing an online game.” “I was watching TV.” “I was
chatting with friends on social media.” “I haven’t seen the last three lectures.” While admittedly anecdotal and unscientific, we believe that such responses are close to the truth and reveal a troubling lack of in-depth learning engagement. Results from a survey of students at the Autonomous University of Queretaro in Mexico also revealed negative perceptions of students taking online courses (Flores Crespo et al., 2020). Only 20% students in this survey expressed having positive perceptions of online courses related to issues of ease of and satisfaction with learning. Based on this small sample of student responses, one must wonder: were the students learning anything in the online classes? Many students are not even connected, and study after study, such as the one cited here, show clearly that students are not excited about online, remote teaching-learning methods. Adding to this negative picture is the fact that much distance learning is primarily lecture based, but unfortunately as Stephen Kosslyn (2015) indicates, “lectures are a wonderful way to teach, but a terrible way to learn” (p. 16).

LIMITATIONS OF ONLINE LEARNING

Limited student motivation, difficulties in assessing learning, technical difficulties that faculty and students face, and the time needed to prepare materials in diverse ways have been discussed as limits of online learning. Faculty members are human beings and they have also expressed feelings of isolation as a byproduct of limited face-to-face student contact during online teaching. The Yale Center for Emotional Intelligence, along with the Collaborative for Social Emotional and Academic Learning (Brackett & Cipriano, 2020) to unpack the emotional lives of teachers during the COVID-19 crisis surveyed over 5000 US teachers to describe the most frequent emotions they felt each day. The five most-mentioned feelings among all teachers were: anxious, fearful, worried, overwhelmed, and sad. Anxiety, by far, was the most frequently mentioned emotion. The reasons given for these stress-related feelings could be divided into two categories. The first is mostly personal, including a general fear that they or someone in their family would contract COVID-19. The second pertains to their stress around managing their own and their families’ needs while simultaneously working full-time from home and adapting to modern technologies for teaching. The authors point out that while prior to the pandemic teachers were already burning out, adding in new expectations of becoming distance learning experts to support uninterrupted learning for all their students and caring for the increased demands of their children requiring parental attention during their own home-based learning, it is no surprise that 95% of the feelings they reported are rooted in anxiety. These data are compounded in significance when we reflect to data previously shared from university presidents on how little attention was paid to student and faculty mental health during the pandemic.

Sun (2020) summarizes keys to engagement and learning in the online environment. He suggests that actual didactic teaching time should be reduced and recommends that lectures should last no more than 18 min at a time (this is also about the time that most teaching and learning experts suggest is appropriate to lecture in face-to-face classes). To engage students to actively respond to what is being taught and reduce boredom, Sun highlights the need for more meaningful engaged learning experiences that use digital pedagogies to support teaching and learning. Additionally, he recommends the use of the Socratic method to help students create cognitive building blocks for further learning and further application. Most importantly, he suggests that because of dealing with pandemic realities, we have learned that as faculty members we should continue our own learning and become students as well. Our experiences during the pandemic have revealed that there are many unknown and unexpected elements in the future of higher education, and educators must
recognize the need to use current and developing pedagogical techniques to make sure that the teaching–learning experience is meaningful, and at the same time, exciting and relevant to students.

THE PANDEMIC AS A SOCIAL/EDUCATIONAL EXPERIMENT

As Sophie Black (2020) points out, at the end of day, we are living in the largest social and educational experiment that we ever could have imagined. In this article, Pasi Sahlberg, a professor of education policy at the Gonski Institute, University of New South Wales, Sydney says “One good outcome out of this [COVID-19 experience], the largest social experiment on children globally that we have ever done, including 1.6 billion children, would be that parents would begin to think about how teaching and learning should happen, and what it means to be prepared to learn, and how to learn” (no page number). As faculty members and researchers, we need to observe what has happened over the past 2 years, what has and has not worked, and as a result translate this knowledge into new teaching–learning paradigms for the post-pandemic higher education world. We need to question traditional pre-pandemic teaching approaches and challenge the view that we are the all-knowing experts and students are empty vessels to be filled by our knowledge. We need to change our view that our role as faculty members is just to classify, mark, and rank students based on their performance and that this teaching interaction should be impersonal. This is, whether we like it or not, the new higher education normal.

Prior to the pandemic, it would have been unimaginable that athletic stadiums would have cardboard cutout pictures of fans, or that restaurants would ensure social distance with dividers between customers, or that classrooms would require masks and six-feet space between students, or that churches would replace worshipers with pictures of faces, or holy places such as Mecca in Saudi Arabia or the Vatican in Rome would become completely empty. Before the pandemic who would have imagined a world where one would not be able to hug your loved ones lying critically ill in hospital or that schools would go back to the basics of using instructional TV, or that crowded universities suddenly would become completely empty with virtual commencement ceremonies, and in some cases creatively using robots as human stand-ins? Moving on in today’s world, uncertainty and anxiety are the rules of the game for faculty members shattering the perceived safety and isolation from real world problems that sheltered many higher education institutions.

In summary, we are living in a new reality that we must learn to see with different, COVID-tinted lenses. The big question is: Will the COVID pandemic forever change the modus operandi of higher education institutions, or will institutions revert to the old status quo once this pandemic ends? We know that many institutions are changing, making permanent some of the pandemic generated modifications such as expanded use of instructional technology and hybrid teaching methods. However, financial access and learning outcome implications of remote teaching may increase the pressure to go back to past normalcy.

As a result of 2 years of functioning in a pandemic mode, moving forward may provide a good opportunity to question our dogmas and assumptions about all aspects of higher education and especially about internationalization (e.g., the common belief that internationalization is mainly about the financial benefits of attracting students), institutional rankings, the role of teachers and students in the learning process (does learning happen independently by the learner, dependently on knowledge provided by the teacher, or interdependently as a result of what we teach them and what students do to create knowledge), and the goals of education (knowledge, job preparation, or informed citizenship)?
WHAT ARE STUDENTS LEARNING?

It is time to question what our students are learning. Are we instructing students just to remember, to memorize, to pass the test, or are we really trying to provide meaningful, deep learning experiences? Loyalka et al. (2019) conducted a study at the World Bank comparing the academic performance of students in India, China, and Russia trying to determine what students learned about mathematics at the beginning and end of their academic studies. In the case of China, students learned and know more about mathematics when they entered than when they graduate from college. This disturbing finding suggests that something is not functioning very well during these students’ educational experiences.

LEARNING NEEDS TO BE INTERDISCIPLINARY

Higher education has traditionally compartmentalized knowledge, teaching, and learning into distinct disciplinary departments. However, moving forward, higher education needs to recognize that that is not the way the world outside of universities works. If we think about the skills that are going to be required for the future, the type of blended learning advanced by the pandemic needs to be more interdisciplinary, integrating traditional classroom approaches and authentic, applied real world learning.

NEW HIGHER EDUCATION MODELS MAY BE REQUIRED

Let us invite you to think if higher education institutions in today’s world are just reacting to crisis, emulating what others do, or are proactively engaging in fostering change. There is the world before the pandemic and there is the one after the pandemic. As Dzulkifli Razak (2020) suggests, before the pandemic, higher education’s attention was much more on what he refers as the four M’s: Manpower, Mind, Machine, and Money. While this is not bad, he adds that we should also focus on the four H’s: Humanity, Heart, High-touch, and Humanizing our educational experience. So, there are significant areas of opportunity to move forward. We need to do a better job articulating what higher education is all about, both to people within and outside the academy. In addition, we can do more to recognize the value of learning acquired outside of the classroom and outside of our institutions. Higher education will benefit from exercising and strengthening flexibility in our teaching–learning facilitated by the pandemic in ways that bring the community to the university and the university to the community. Moving forward also may require building on the self-motivational emphasis stimulated by online teaching thereby making sure that students are seen as drivers of their own learning, flipping the responsibility and even control of learning onto the students.

A study commissioned by the Qatar Foundation that is available for download (https://www.qf.org.qa/eiu) focused on innovative models of educational institutions that blend hybrid education with more experiential learning and develop strong partnerships with other on- and off-campus providers. Five innovative higher education models are described including:

1. Fully online university that is Internet based with flexible offerings such as the UK’s Open University.
2. Cluster university such as the Qatar Foundation’s Education City which combines multiple universities together sharing infrastructure and resources.

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1. Fully online university that is Internet based with flexible offerings such as the UK’s Open University.
2. Cluster university such as the Qatar Foundation’s Education City which combines multiple universities together sharing infrastructure and resources.
3. Experiential university that utilizes traditional learning but with an emphasis on hands-on learning.
4. Partnerships between universities that maintain their separate organizational identity.
5. Liberal arts university focusing on interdisciplinary learning.

The pandemic has also opened institutions to the possibility (necessity?) of virtual mobility to connect with students all over the world, thereby facilitating internationalization efforts and ensuring that education is not only for a few students but for all students. The digital, online format can help provide meaningful, globally engaged perspectives to all our students, even though they are not able to go abroad.

CONFRONTING THE HIGHER EDUCATION PARADOX

Moving forward from the pandemic requires that we confront the paradox that is higher education: On the one hand, institutions are the best laboratory for social change, but on the other, are tradition bound organizations that inhibit the capacity for change and innovation. We must confront the latter and capitalize on the former, recognizing the need for change and learning to learn from the past for a better future. As H. L. Mencken (1917) famously said "There is always an easy solution to every human problem–neat, plausible, and wrong." A quotation that is mistakenly attributed to Charles Darwin but is by Leon C. Megginson, Professor of Management and Marketing at Louisiana State University at Baton Rouge also highlights the importance of the ability to respond to change. Paraphrasing Darwin, Megginson wrote in 1963 “According to Darwin’s Origin of Species, it is not the most intellectual of the species that survives; it is not the strongest that survives; but the species that survives is the one that is able best to adapt and adjust to the changing environment in which it finds itself.” (p. 4). A final quote that illustrates the need in today’s and tomorrow’s world to adapt to new realities is from Paul Valéry, who in 1937 said, "The trouble with our times is that the future is no longer what it used to be." The future is not something that we extrapolate from the past or that we guess by using a crystal ball; the future is what we build today.

AN EXAMPLE OF A FUTURE FOR HIGHER EDUCATION

Over the last 25 years, the Qatar Foundation (QF) in Doha, Qatar has established the largest multi-campus institution in the world. Education City brings together eight universities: Carnegie Mellon University (Computer Sciences and Business), Texas A&M University (Engineering), Georgetown University (Government and Diplomacy), Northwestern University (Journalism and Communications), Cornell University (Medicine), Virginia Commonwealth University (Arts), HEC in Paris (MBA), and a homegrown institution Hamad bin Khalifa University offering a variety of graduate programs. This unique ecosystem brings together well-known institutions and at the same time connects with schools from kindergarten to high school, also located at Education City, thereby encompassing the entire educational pipeline in one place. In addition, Education City includes the National Library and the National Science and Technology Park, and other educational organizations creating an ecosystem of more than 45 different entities is a unique laboratory for educational change. A key challenge faced by complex ecosystems like QF’s Education City is how to engage these autonomous institutions in achieving higher levels of collaboration.
When those universities were invited to be part of the Qatar Foundation, the request for each was clear: the same quality of education offered at the home campus should be offered at Education City. However, it was clear that, at the same time, having institutions that traditionally compete in one single place would create a unique opportunity to engage them in a collaborative mindset. A distinction is drawn here between cooperation and collaboration: During cooperation, one continues to do their own things and just interact and connect with others. Collaboration, however, means building something new together.

The pandemic provided a unique opportunity to transition from mere cooperation to collaboration, and importantly, to enable further collaboration. Increased communication emerged among institutions to deal with the unexpected closures and the need for continuity of teaching–learning, establishing new joint initiatives became more natural, and the lockdown even allowed institutional leaders, engaged by QF, to collectively reflect on achievements, shortcomings, and prospects. The result of these deliberations was a new comprehensive Qatar Foundation’s higher education strategic plan, and the selection of six innovative flagship initiatives.

We will briefly describe three of these initiatives (a detailed description of each of the six can be found at the Qatar Foundation website (https://www.qf.org.qa/education/higher-education). The first flagship initiative is known as “Next Gen Ed,” where all eight universities work together to find ways to complement their traditional General Education programs by supporting educational interventions allowing students to have experiential learning on those skills usually not covered in the traditional curriculum. For example, in addition to the basic Gen Ed courses such as Mathematics, or US History, students can acquire experiential knowledge in areas such as critical thinking, entrepreneurship, and multi-cultural awareness that employers have indicated are necessary for success post-graduation. The second flagship initiative is called the “Universal Skills Passport.” This credential documents learning in a way that allows students, once they graduate, to have not only a university graduation credential with their own grade point average and transcript, but also an assessment of skills and awareness of topics that go beyond traditional knowledge of the profession.

The third flagship initiative is what we refer to as “Path For You.” This is a concerted attempt to ensure that students have a personalized, flexible educational experience. Path For You allows each student enrolled in the Education City ecosystem of eight universities to register for courses in each of the universities without additional hurdles. They can cross register without having to go through the bureaucracies of transfer credits or paying extra fees.

MOVING ON FROM REACTIVE TO PROACTIVE

Moving higher education from a reactive perspective to a proactive perspective is difficult, but hopefully we can learn from and build upon our reactive response to the pandemic to develop more proactive approaches moving forward. There are no magic formulas; there are no recipes for this journey. However, given the complexities of our higher education institutions, the weight of tradition, the mandates of accreditation, the influence of internal segmentation of our institutions, the internal and external political battles, and of course, the funding schemes, proactive change is difficult to accomplish but possible. While these obstacles are real, we genuinely believe that, if we do not do anything now, it is going to be exceedingly difficult later.
LESSONS LEARNED AND FINAL THOUGHTS

The pandemic has taught us some interesting and painful lessons. We learned that we were not properly prepared for such drastic changes, despite countless efforts in planning. We quickly realized that the operational environment of higher education is much more fragile than assumed. We learned that online education, while in some ways easy to implement, may not be the long-term solution to the delivery of teaching and learning due to digital divide and financial issues. And painfully, we learned that the kind and quality of leadership required in our higher education institutions and classrooms is different during such world-wide crises from the leadership exercised during normal times. We learned that many of the inadequacies, deficiencies, and shortcomings that plagued higher education prior to the pandemic did not disappear. In fact, they became more critical during the crisis, will become more critical in the future, and will continue to be challenged, providing hope that we can change and improve higher education as we move to a post-pandemic world.

In summary, the ideal scenario for higher education systems, no matter where they are located, is to make sure that more students benefit from the opportunity of education, that their learning journey equips them with relevant education, and that graduation will be seen as just the starting point for lifelong learning experiences. Also, higher education needs to make sure that more students come and stay. This requires challenging the misconception that quality is synonymous with selectivity. In addition, those of us in higher education must concentrate efforts in providing tools for students to become not only qualified professionals, but more importantly, engaged and committed community citizens. Finally, the world-wide higher education community needs to make sure that student’s educational experiences are meaningful and relevant for today and tomorrow’s world. All the above makes it imperative for colleges and universities to seriously challenge traditional assumptions, and truly adopt a sound culture of evidence and of institutional effectiveness.

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