EARLY RESEARCH AND REPORTING COMING OUT OF THE LITERATURE ABOUT THE FUTURE OF HIGHER EDUCATION

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Abstract. This is a discussion of the review of current literature surrounding the future of higher education in light of COVID-19, globally. A scan of about 550 scholarly and trade articles yielded some predominant themes by scholars, leaders and industry experts. Major themes centred around the acceleration and relative permanence of online learning, what is the purpose of the university, a re-examination of the role of brick and mortar, a re-envisioning of the traditional university campus spaces and emerging skills for the post-pandemic world.
Keywords: higher education, online learning, traditional university, post-pandemic university, campus spaces

Introduction

The literature around the impacts of COVID-19 and the future of higher education is growing and evolving rapidly. While it is necessarily quite speculative at this time; nevertheless, the topics of these conversations can give clues as to the major emerging considerations and possible likelihoods about the university of tomorrow, post-pandemic. While, to date, much of the pandemic literature in higher education has focused on student impacts (such as mental health), changing educational protocols (particularly in medical schools), and evolving pedagogical practices/educational processes, there is a body of literature focused specifically around discussions related to the future of the university, arising out of many definitive, global changes [1].

This is a thematic analysis and discussion of the review of 550 scholarly and trade articles about the future of the university, revealing some key themes. There is agreement that, like other industries, higher education has been significantly impacted during the pandemic. There is a general consensus that, as part of our crisis planning, administrators must be prepared for future crises in terms of emergency learning. And very emergently, the pandemic has necessitated a re-thinking of higher education at every level, from policies and administration, to revenue streams and also about curriculum and delivery. As part of these broader themes, more specifically, there has been focused discussion about the acceleration and relative permanence of online learning, the role of the university in an emerging society, and a re-envisioning of campus spaces.

Results and Discussion

The acceleration and relative permanence of online learning. The most obvious and direct impact of the pandemic has been the necessary pivot to online learning (also called e-learning or distance education), where courses are taken largely, or entirely, in the online environment. While online learning has formally existed in the US since 1976 with the inception of the University of Phoenix, it has generally been viewed as an option or add-on to traditional face-to-face higher education. Online learning has been a growing worldwide phenomenon, however, often surpassing face-to-face education in some parts of the world [2]. It has been historically trending toward greater acceptance, satisfaction and positive learning outcomes [3] and pandemic conditions have propelled elearning to the forefront of teaching and learning. This shift has become, in essence, a forced global experiment in online learning which has brought about new revelations about the role and practice. One major discovery is the positive potential of online learning as a stronger, more prevalent and available option in the suite of course offerings. "A growing number of colleges are now evaluating which courses can be taught successfully through online learning and this trend may lead to long lasting and/or permanent changes with improved online learning platforms and ways of teaching" [4].

While champions of elearning point to the fact that it is cost effective, innovative, convenient and efficient, many concerns are emerging. Some feel it is perpetuating divisions of race, class and levels of support [5], and many students, particularly those in developing countries, are not as amenable to it and/or do not seem to perform as well [6]. One antidote for this, according to discussions, is the hybrid model of elearning, which is a combination of synchronous and asynchronous learning; there is a greater acceptance of elearning when synchronous elements (such as online interaction such as discussions, break rooms, gamification, etc.) are added to an online course [7].

The impacts of a significant shift to online learning can precipitate many tangential developments and implications for the marketplace. For example, jobs for online tutors can develop, we can see greater software options with better educational and interactive features (e.g., virtual reality, video conferencing, interactive tools like polling and breakouts, etc.), and there will be need for greater instructor training and other supports. Entire industries can potentially develop around this global shift toward more online learning. Challenges, however, are likely to persist, such as how best to deal with labs (some remote labs and video-based labs are developing) and issues of the digital divide persist (lack of computers, no wi-fi, weak wi-fi). In the case of remote labs, issues of quality of training can cast a cloud on graduates; questions about the quality of education and assessment done in virtual labs versus face-to-face would need to be addressed and clarified [8]. In the case of the digital divide, access to education becomes a key issue, but, already, the digital divide is gradually shrinking and pressures for the need for online education (so that education *can* be more accessible to more people) are likely to accelerate the closing of this gap.

Re-thinking the role of brick and mortar. The rapid shifts into online learning have led many to examine the role of brick and mortar in higher education. If more learning occurs online, what of the need for brick and mortar? This issue is a strong theme in discussions. "This shift to distance education could also reduce some of the need for lecture space at college campuses with a shift to a non-classroom setting such as the library or testing center" [4]. Historically, campuses have felt the growing pains of lack of space. This problem may prove to be somewhat moot with the option for online course offerings. Campuses may find themselves developing into community hubs with student services, community services and research groups as centres of activity versus just a gathering place for students to go to their classrooms [9]. Many of the pressures that have been put on universities to grow their institutions, to acquire land, to create more classrooms, to develop intricate supports and services on campus for both students and instructors, to facilitate parking and accommodate mass transit, etc., have created cities within cities, ecosystems within ecosystems, competing for ever scarcer resources. Many universities have been reaching breaking points juggling these needs under the traditional sprawling campus model, the efforts of which have not been supported by appropriate financing, and with university budgets continually shrinking. Much of this model of the sprawling campus may need to be stripped away and the essential role of the university in society, along with the purpose of its varied spaces, are having to be re-thought. Therefore, many discussions have focused on more slimmed-down campuses, campus mergers [10], the leasing out of excess space, campuses becoming multi-purpose, campuses blending more into the community and being community hubs, and a shift toward hybrid campuses with flexible options for residency and online [9]. Brick and mortar, at is most basic, would be reduced to essential spaces only, such as libraries, testing centres, research hubs, certain student services, etc.

The special role of libraries. In the review of the literature, an interesting discussion about the special role of libraries bears some emphasis. There is recognition that that libraries, and librarians, can play a more active role in student online success such as guiding with research, providing documents and resources, instructing students in how to better use the digital environment, and providing specific supports through embedded librarians (librarians who are subject matter experts) to respective disciplines [11]. Libraries, therefore, as the centres of learning, have great potential to fill gaps in terms of connectivity with students (e.g., through library chat lines) and provide some instructional support (e.g., through embedded librarians). These types of critical supports could emerge as prominent, and place the library in a more central role in student success in the online world.

Changing research agendas. Large shifts in society tend to generate shifts in research agendas. Not only are research agendas impacted in terms of discussion of the pandemic directly from a medical or health or economic perspective, but there are many ancillary impacts on research agendas as well [12]. Research agendas become wide open in almost all fields to address the many effects of the pandemic. Research around gender, work, family, essential workers, and the virtual worker are all key areas [13]. Issues around national and international collaborations and the acceleration of innovation also come to the forefront [12].

The challenges of transition. Discussions, industry reports and legislative decisions all point to the reality of ongoing cuts in higher education. One study of 250 universities in the US, for example, shows they are just beginning to look at cuts through redundancies, furloughs or paid leaves, and pay cuts, with more cuts coming [14]. More cuts are undoubtedly coming. As budgets are being slashed, how will higher education respond and adjust, since the path forward is only one of heightened belt-tightening? This is a major question faced by all institutions and resolutions and responses will depend on the size of campuses, the regional environment and emerging government policies.

Another major challenge of transition is how to effectively interject the "social" in online learning; this will pose significant challenges as educators struggle to retain, and even increase, connectivity in a digital environment [9]. Instructors who are more technologically-inclined are able to adapt more quickly; however, there is pressure on instructors who are not as skilled. There is likely to be more technological supports available for the lesser-skilled instructor. Additionally, technology, in response to this new market demand, is responding with more and more software programs and tools that are designed to engage learners and which are relatively easy to use. It will be important to address this question about how to ensure social connection and "maintain the sense of vibrancy and energy, reminiscent of campus life" [9].

The opportunities of the emerging new environment. In a new economy, and with global shifts, the university could be one of the most important institutions to serve a changing world. There will be need for re-training, and there may also be need for upgrading and filling in of knowledge gaps as a result of the pandemic. Additionally, non-credit offerings, to provide connection and personal growth, may be needed not only for upgrading, but for life enrichment. "There are millions of people around the world who are excited about learning advanced subjects that higher education institutions are able to teach" and which are not necessarily credentialed [15].

Obviously, there will need to be a tighter alignment by universities to new market realities, particularly focused on regional needs. Some project that 50 per cent of employees will need re-skilling by 2025, mostly around rising technology needs [16]. Universities may find themselves as part of the lifeline to their local and regional communities to meet local needs with respect to skill-building and job-training in a changed economy. The skills for the future are still being researched; however, in addition to the traditional list of skills for the 21st century (learning and innovation; information and media and technology; and life and career skills) there will be a heightened and specific need for technological skills such as cloud computing, artificial intelligence, cybersecurity, data science and IoT (internet of things) [16].

Summary

Higher education, like many other industries, has been greatly impacted by COVID-19 the world over. New fiscal realities are destined to necessitate re-evaluation of how education is delivered. This delivery is most likely to include an increased amount of online education options with special attention to decreasing the digital divide and the incorporation of hybrid learning. This education will need to focus on how best to facilitate human connection and connectivity. Higher education will need to adjust to new market realities, identify educational gaps and be closely aligned to emerging market realities. Administrators should be prepared for the possibility of the decreased need for brick-and-mortar and that campuses may need to evaluate what are the essential on-campus offices that need to remain brick and mortar, and which can go online. Campuses will likely need to

be more creative in terms of creating revenue out of their overflow spaces such as leasing space, or becoming community centres and research hubs. Skills of the future will include heightened development in technological and cyber skills.

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