Peer-Reviewed Article
COVID-19 and higher education: Changing adoption rates of online learning

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Abstract: The landscape of higher education is dramatically changing as a result of COVID-19. No other incident has had as great of an impact on the implementation of online learning as the pandemic. Prior to 2020, approximately 15% of learners in higher education took courses online. In March 2020, 100% of students in higher education were taking courses online. The COVID-19 pandemic changed online learning from being a convenient form of learning to an essential form of learning. Instead of focusing solely on a method of keeping students on track to course completion and graduation, online learning became a method of keeping students and faculty safe while continuing with their respective responsibilities within the higher educational system. Components of online learning, while traditionally not designed nor structured for the entire higher educational system, is proving adaptive to massive groups. The purpose of this paper is to examine the changing adoption rate of online learning in higher education during COVID-19 and the present and future challenges of online learning.
Keywords: online learning, COVID-19, higher education

Introduction

Higher education is a service industry. Students pay for intangible knowledge in the form of a survey lecture. Other times they may experience a lab, receive PowerPoint notes, or participate in a community learning activity. The result is still a form of a service: learning about a subject matter at the higher education level. The main limitation with any service industry is that it is typically heavily reliant on human capital. Higher education possesses an additional limitation: traditional higher education is space bound in terms of classrooms. Once the classroom is booked, another class cannot be scheduled regardless of the demand—that is, until technology and online learning came to higher education.

Online learning is considered a creative approach for the delivery of curricula content and has been adopted by institutions higher education both public and private (Glazier et al., 2019). Because all interactions with the instructor and course materials happens online, this delivery method can provide learners with access to higher education while accommodating temporal and/or geographic limitations. Reasons students often cite for enrolling in online courses include being physically unable to attend college due to finances, work responsibilities, and/or geographic restrictions (Goodman et al., 2019).

In theory, online learning would provide everyone who has a computer and the Internet with access to knowledge, but practically any form of course delivery—face-to-face, online, or hybrid—can be highly effective, ineffective, or somewhere in between. Most courses offered in higher education are face-to-face. Face-to-face courses are primarily preferred by traditional students (i.e., the 18-21-year-old demographic) and occur on a physical campus. Another option is a hybrid course, which is partially taught face-to-face and partially taught online (Sellnow-Richmond et al., 2019). For example, a Monday-Wednesday-Friday face-to-face course could be transformed into a hybrid course by including face-to-face components on Monday and Wednesday, while giving students assignments to complete through the online component on Friday. The measure of effectiveness of a particular learning format will depend on how effectively the instructor can use it to communicate with their learners (Rogers-Shaw et al., 2017).

The percentage of students enrolling in online courses has grown in recent years. In 2017, 15.4% of students in higher education were taking all courses online, an increase from 14.7% the previous year (Lederman, 2018). During this same year, 17.6% of students in higher

education enrolled in a combination of online and face-to-face courses, an increase from 16.4% in 2016. The largest student population attracted to online courses consists of non-traditional students who held full-time job, had families, and/or had other responsibilities preferred online courses (Dutton, et al., 2002). Normally, an increase in online course enrollment would be viewed as positive: the courses benefit students while also serving to assist institutions by offering additional courses without the need to expand physical space capacity. It was far from ideal, however, when what was once an optional form of learning suddenly became mandatory.

Moving All Courses to an Online Platform

Think back to January 1, 2020. The stock market was robust and politics was the main topic of conversation throughout the U.S. There was some talk about a virus, but it was in China. For many people, the possibility of it impacting other nations seemed implausible. By March 2020, the U.S. and the rest of the world was rocked by the realization that the virus was pandemic. The method in which higher education would function needed to change immediately in order to protect its faculty, staff, and students. Campuses were evacuated, face-to-face and hybrid course delivery ceased to be offered, and courses were immediately transferred into an online learning environment. Almost overnight, faculty members were required to transform face-to-face and hybrid courses into a purely online format.

The COVID-19 pandemic and the rapid transformation of all higher education courses did not allow for careful deliberation in converting face-to-face courses to online delivery. Instead, faculty members worldwide were faced with placing as much information online as possible in the fastest manner, with some campuses getting a week-long hiatus for faculty to prepare course materials while others requiring literally a weekend turnaround process. These efforts gave students the opportunity to complete the Spring 2020 semester. While changes in students' plans for earning credits toward graduation remained intact, the method of delivery for most of the faculty changed dramatically. Perhaps no other circumstance could have driven higher education to provide online teaching experience (albeit forced) to all higher education faculty members. Where once a faculty member may have said "I will never teach online," or "it would be easy to transfer a course to online delivery," educators worldwide received firsthand experience with the challenges of teaching asynchronously.

Technology advances, online pedagogy, course content, and the changing nature of student learning all influence the development of an online course. These issues result in the

need for a group of professionals throughout the university to provide input rather than relying on only the instructor. These professionals may be comprised of a variety of members ranging from the instructor, an instructional designer that specializes in building online content, a graduate student who may review the course from a student's perspective, or other instructors in the same discipline. The amount of time the school's technology professionals are able to assist instructors in the online course development is dependent upon the size of the university and the amount of time available prior to the time the course is to be delivered (e.g., one week vs. ten weeks). For example, most large universities have a separate unit devoted specifically to online education. This unit would help instructors, over the course of 10–13 weeks, build an entire course.

The COVID-19 crisis, however, did not allow instructors the luxury of building courses over a multi-week time frame. Instructors may have contacted the various technology professionals across campus, but most of the work was done quickly by the instructor in a very short amount of time. Not all instructors are best suited and/or comfortable in teaching in an online format. Faculty members who were unexpectedly thrown into the world of online learning quickly learned that the development of an online course is far more complex than initially perceived. There wasn't time to become familiar with the various instructional nuances that make online courses excellent (Blythe, 2001). Many faculty members needed to focus only the essential online learning tasks, such as how to record and transcribe lectures and develop online examinations and assignments. Once the semester ended, instructors would be able revise and improve these newly and hastily designed online courses.

Looking to the Future

Historically, online courses have been expensive to implement due to the technology and time required to build, monitor, and maintain the course. They require attention to detail and are often best served when the instructor continually revises the course (Maddux, 2004). Now that online courses have been built, it is important to revise the content for quality learning and student satisfaction. Student learning and their level of satisfaction in an online course are shown to be influenced by the perceived level of difficulty in technology usage. The frequency and clarity of communication from the instructor regarding how to access assignments, information and other students will influence (positively or negatively) students' willingness to engage and satisfaction with components of the course (Lee, 2014).

Innovative aspects of online learning can be embedded in the interactive methods of collaboration, active learning, video sharing, and communication forums available (Al-Samarraie et al., 2018). While technology significantly enhances the ability of e-learning, it is the instructor's role to ensure that the course satisfies the core competencies, level of quality, and completion of learning outcomes (Blanc, 2018). The rapid transition of courses to an online delivery because of the COVID-19 pandemic did not provide educators with time to think of and/or incorporate active learning tools—the primary focus was upload assignments. As social distancing continues, many courses will continue to be offered online. Faculty are encouraged to examine available technology and tools that promote social interaction among students, between the students and instructor, and methods of collaboration (Lee, 2014).

One important consideration for revising online courses is complying with the requirements of the American with Disabilities Act (ADA). Headings, fonts, colors, and other facets of course media need to be considered from a disabilities perspective when designing the course (Maddux, 2004). While it is logical to understand the courses developed as a result of the pandemic may have been unable to implement ADA features, modifications should be made at the conclusion of the semester. After all, the "new normal" of higher education will probably feature a higher number of online courses than previously offered.

Conclusions and Implications

Higher education's first hurdle during COVID-19 during spring 2020 was to get all courses online and finish out the spring semester. As time passed, a realization dawned that a "new normal" is setting upon the landscape of higher education. Effective Fall 2020, some colleges will resume offering face-to-face or hybrid classes, while others will offer only an online option (The Chronicle of Higher Education, 2020). Supplementary online or hybrid courses play an important role in providing curricula delivery options and offering a combination of face-to-face, online, and hybrid courses may assist some institutions in reaching their goals. Until the COVID-19 virus is sufficiently under control, any institutions that offer courses with a face-to-face component must do so within safe distancing guidelines (e.g., six feet between each student).

The diligent work initiated at the start of the pandemic is just the beginning. If the COVID-19 pandemic has taught higher education anything, it's that we cannot always predict the future landscape of the higher education classroom (Miller, 2020). We are also learning that

higher education may not go back to operating the way it did prior to the 21st century—we are in uncharted territory. While higher education is a place of learning for students, administrators are learning every day how to pivot, plan, and be proactive. They are also learning that the plan made the prior week may have been sound, but changes during the current week may ultimately be obsolete in future weeks. Administrators in the COVID-19 era need to remain calm, flexible, open minded, and optimistic as they guide their institution through the pandemic.

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