Lessons Learned from Emergency Remote Teaching (ERT) during the COVID-19 Pandemic

Abstract

This article reveals lessons learned from emergency remote teaching (ERT) during the COVID-19 pandemic. The authors examine faculty's perspectives and insights during and after this time period that demonstrate the importance of using various forms of technology and methods of course design. The lessons learned during this study focus on: (1) design, (2) engagement, (3) accessibility, (4) flexibility, and (5) sanity. Additionally, the article explains how these takeaways can guide faculty during future emergency course preparation.

Keywords: emergency remote teaching (ERT), COVID-19, pandemic, higher education

Introduction

> Hopefully the COVID-19 threat will soon be a memory. When it is, we should not simply return to our teaching and learning practices prior to the virus, forgetting about ERT. . . the possible need for ERT must become part of a faculty member's skill set, as well as professional development programming for any personnel involved in the instructional mission of colleges and universities. (Hodges, Moore, Lockee, Trust, & Bond, 2020, para. 27)

What lessons were learned during this time period by higher education instructors? Did faculty acquire any new technical skills or insights on their students? Looking ahead, what instructional tools and strategies will they use once they return to the classroom? This article presents the takeaways that emerged as a result of the switch to emergency remote teaching (ERT) during the COVID-19 pandemic for higher education faculty.

Background of Problem

There is a difference between a well-designed online course and a course that resulted from a reactionary emergency response needed for remote teaching. ERT is defined as a temporary shift of instructional delivery to an alternate delivery mode, due to crisis circumstances, in which the primary objective "is not to re-create a robust educational ecosystem but rather to provide temporary access to instruction and instructional supports in a manner that is quick to set up and is reliably available during an emergency or crisis" (Hodges et al., 2020, para. 13). In essence, ERT involves the use of fully remote teaching solutions for instruction that would otherwise be delivered face-to-face or in a blended or hybrid format. ERT assumes that instruction will return to the previous format once the crisis or emergency has ended.

This article recounts what faculty found problematic in their pre-pandemic courses and how they remediated these issues both during and after the switch to ERT. Additionally, the authors present barriers and successes that faculty found during this critical time period specific to pedagogical concerns and digital technologies. They share future opportunities for advanced planning, design, and implementation of online and blended courses and course materials. The overall intention of this article is to start a conversation about the lessons that were learned during this period, as well as what future work needs to be accomplished to implement best teaching and learning practices in course design and delivery.

Literature Review

Past Emergencies and Disasters in Higher Education

Emergency response to teaching students during disasters is not a new phenomenon, yet research on this topic is limited, due mostly to regional concentrations. Institutions of higher education have risen to the challenge in several instances, such as during earthquakes, hurricanes, student protests, and university shutdowns. As a reaction to the 2010 and 2011 earthquakes in New Zealand, a university increased the use of its learning management system; it also implemented the use of audio- and visual-recorded lectures to continue the delivery of classes. According to Ayebi-Arthur (2017), “The case study reveals that the College became more resilient with e-learning in the aftermath of the seismic activities in 2010 and 2011” (p. 272). Czerniewicz, Trotter, and Haupt (2019) studied how some universities used blended and online delivery of classes to allow students to complete the academic year when campuses shut down as a result of student protests in South Africa. After the catastrophic Hurricane Katrina in 2005, the Sloan Semester financed an initiative that helped student victims of Hurricane Katrina

continue their education remotely (Lorenzo, 2008). These responses can be viewed as precursors to the sudden ERT switch that occurred around the world in March 2020.

The COVID-19 Emergency in Higher Education

In March 2020, the COVID-19 pandemic did not merely affect the educational world, but the entire global community. Since the initiation of ERT because of the COVID-19 pandemic, research (Blaylock et al., 2021; Colclasure et al., 2021; Johnson et al. 2020; Lazar, 2021; & Nachatar & Chowdhury, 2021) has been conducted related to faculty experiences and perceptions. These studies examined faculty who rapidly adjusted and transitioned to a fully remote teaching and learning environment.

Colclasure et al. (2021) found that nearly all faculty interviewed at Predominantly Undergraduate Institutions (PUIs) in the Midwest reported that they rapidly and significantly changed their pedagogical approach, identified and incorporated new technologies, and changed academic content to fit the revised calendar during this time period. During the early stages of the COVID-19 transition, Blaylock et al. (2021) solicited responses from faculty who reported that they made a wide variety of changes to their courses about expectations, learner engagement, and assessments. These changes included reducing the duration of synchronous meetings, using the discussion board more often, as well as altering or eliminating assessments. Some of the faculty discussed adding extra credit assignments, making their courses pass or fail, and using more frequent low-stakes assessments such as open book tests or end-of-chapter reflection questions.

Shortly after the onset of COVID-19 and the need to place all courses fully online, Johnson et al. (2020) conducted a broad investigation at colleges and universities across the United States, surveying 897 faculty and administrators. “Findings revealed that most of the

faculty changed the way they taught by changing their assessments. Nearly half of the respondents reported lowering the expected volume of work for students (including dropping assignments or exams) and/or shifting to a pass/fail model for this semester" (Johnson et al., p. 6). In addition, faculty emphasized a need to support their students in the fully online learning environment with greater access to online digital materials.

By conducting an autoethnography, Nachatar, Singh, and Chowdhury (2021) illustrated their personal experiences during this time by focusing on overall teaching successes of international early-career academics in Australia. This study merged the authors' autobiographical descriptions as international academics with analysis, clarification, and interpretation in addressing teaching-related barriers and strategies that were used during the COVID-19 pandemic. In their research, Nachatar, Singh, and Chowdhury identified several major challenges, including the transition to remote learning and teaching, relationship issues between students and academic staff, and language-related difficulties.

In 2021, Lazar interviewed those responsible for digital accessibility on different campuses, and the findings revealed common problems across three universities and a government agency related to procurement, document accessibility, accessibility training, and captioning. "From the interviews, there were common challenges that existed at universities, such as captioning, PDF files, the need for stronger control over procurement, more training, and limited funding for all of these" (Lazar, p. 17). The researcher concluded that there is a need to plan for future crises, specifically related to these common digital accessibility challenges.

For most universities and colleges, the period for the Spring 2020 semester was rather unremarkable. Educators knew what was expected of them; administrators were seemingly prepared for various emergencies, such as active shooters, snowstorms, and floods. Yet, no one

was ready for something called COVID-19. COVID-19, emerged in Wuhan, China in late 2019 (Kaqinari, Makarova, Audran, Döring, Göbel, & Kern, 2021). By January 2020, the World Health Organization (WHO) declared a global health emergency, and eventually the pandemic required drastic measures that affected the world's education system. Accordingly, brick and mortar PK-12 schools and higher education institutions were closed, and a rapid switch to remote teaching and learning was instituted. "For the first time in world history, all students were required to take all their classes online and all teachers were required to teach online" (Misirli & Ergulec, 2021, p. 6700).

As can be expected, many educators were unprepared for this transition. Online learning and distance education became the "panacea for this unprecedented global pandemic, despite the challenges posed to both educators and the learners" (Pokhrel, & Chhetri, 2021, p. 134). The quick transition from traditional face-to-face learning to remote learning was challenging for both the students and educators, especially since they were required to adopt a system that they were not prepared to use. Al-Naabi, Kelder, and Carr (2021) suggested that higher education institutions allocate additional resources and funding for professional development provisions during emergencies. "This may include subscriptions to online software, online teaching and learning tools, online collaboration and video conferencing tools that can scaffold teachers' learning and can help them collaborate and network with teachers in other institutions and other countries" (Al-Naabi, Kelder, & Carr, p. 15).

Yet, during the COVID-19 ERT switch, many schools simply did not have enough time to properly implement these professional development solutions. Shamburg, Amerman, Zieger, and Bahna (2021), in their research about the immediate effects of remote learning during the COVID-19 shutdown in New Jersey during Spring 2020, explained:

> Many school districts implemented alternative teaching approaches such as socially distanced classrooms, hybrid teaching, or complete remote instruction. Consequently, the demands on teachers, already overworked and stressed, grew exponentially. The sudden closure of schools during COVID-19 left many teachers uncertain about their role, unable to use technology effectively to communicate and teach, and unprepared for remote learning. (p. 5)

Cishe (as cited in Nachatar Singh & Chowdhury, 2021) stressed that ensuring quality teaching to produce appropriate learning outcomes involves numerous factors, such as designing effective course content as well as using constructive assessment and feedback. Before the COVID-19 pandemic, most practice depended on face-to-face delivery. Hence, during the switch to ERT these factors were displaced, and faculty were forced to make immediate and expeditious changes.

Method

This study assessed faculty experiences and perceptions about teaching and learning practices implemented because of the need to institute ERT due to the COVID-19 pandemic. The study used a quantitative survey research design (Best & Kahn, 1993; Creswell, & Plano Clark, 2010). This sample was chosen to be representative of the larger population of faculty who traditionally teach face to face, hybrid, and fully online courses both in the undergraduate and graduate environment from higher education institutions.

Participants

The sample for this study included 39 current full-time and part-time faculty members at a private, higher education institution in northern New Jersey. “Certain features of New Jersey made the state interesting and important to study” (Shamburg et al., 2021, p. 1). New Jersey was

dramatically affected by the COVID-19 outbreak during the Spring of 2020; most schools and universities made an abrupt shift to ERT with little to no preparation time. Most in-person courses were switched to remote versions, providing less than a week of notice to instructors and students. This sample was chosen to be representative of the larger population of instructors from higher education institutions in the United States of America. The chosen institution is a private university in northern New Jersey and offers over 60 undergraduate and graduate programs to more than 2,600 undergraduate students and 800 graduate students.

Procedure

Once the researchers received approval from the Dean of the School of Education, the Provost of the University and the Institutional Review Board, a sample was identified by obtaining a list of the names and email addresses of all current full-time and part-time instructors at the institution. Via email correspondence, the potential participants were informed of the study and asked to complete an online survey. The survey was available for several weeks; potential participants were regularly reminded via email to complete the survey.

Instruments

The researchers used two main instruments in this study: (1) an implied consent form that identified who gave consent to be involved in the study, and (2) an online survey that measured attitudes (Creswell, & Plano Clark, 2010). These forms were designed by the researchers to meet the needs of the current study.

The implied consent form invited the participants to participate in the research study. The recruitment of volunteers for an experiment should always involve the subjects (Best & Kahn, 1993). The subjects were provided with an explanation of complete understanding of

the procedures employed, the risks involved, and the demands that may be made upon them. The form used in this study explained that the individual was selected as a possible participant because he or she was a current instructor at the institution. The form explained that the project aimed to gather lessons learned about best teaching and learning practices during the pandemic.

The online survey was created using Google Forms and administered to all study participants. Participants were informed that the results of the survey were anonymous and confidential. The survey contained 14 multiple choice questions and six open-ended questions.

Results of Study

In this section, the authors present demographic data and the results of the study. The main results of this study identified best practices of design and delivery of online courses, and recognized areas in need of further support.

Demographics

Survey respondents ranged from 25 to 75+ years of age. There were 18 female respondents and 21 male respondents. Twenty-seven of the respondents indicated that their ethnicity was White, nine were Hispanic or Latino, two were Black or African American, two were Asian/Pacific Islander, and two chose not to disclose. The percentage of full-time faculty respondents was thirteen and twenty-six were part-time faculty. Most faculty respondents taught undergraduate courses representing 21 out of the 39 respondents. Eight of the respondents taught graduate courses. Ten respondents taught both. Prior to March 2020, 27 of the respondents indicated that they taught face to face; seven taught hybrid; and five taught fully online.

Most of the respondents favored teaching face-to-face including 25 out of the 39 respondents; 13 preferred teaching hybrid; and six preferred teaching fully online. In most cases, respondents approached designing and developing their courses on their own including 33 out of 39 of the respondents. However, six respondents explained that they designed and developed their courses with the help of a colleague or a professional instructional designer.

Lessons Learned

After analyzing the data, the researchers found common lessons learned, which were related to the following constructs: (1) design, (2) engagement, (3) accessibility, (4) flexibility, and (5) sanity.

Design

The first lesson learned was associated with the design of past, current, and future higher education courses. 35 of the respondents indicated that the design and delivery of their courses changed because of ERT and the COVID-19 pandemic. Four respondents indicated that there was no change.

Table 1 reveals specific techniques utilized by respondents when they suddenly switched to ERT at the onset of COVID-19.

Table 1

Techniques utilized because of the shift to ERT during COVID-19, n=39

I changed the kinds of assignments or exams I asked students to do.	22
I lowered my expectations about the amount of work that my students would be able to do.	9
I dropped some assignments or exams.	12
I lowered my expectations about the quality of work that my students would be able to do.	9
I dropped some of the readings that I was originally asking students to do.	2
I set up and used "virtual" office hours for students to communicate with me.	25
I incorporated collaborative assignments and assessments, such as Discussion Boards, Journals and Blogs, that I had not previously incorporated prior to the shift to online teaching.	14
I provided students with videos and multimedia resources that I had not previously incorporated prior to the shift to online teaching.	16
I changed some assessments from timed exams to papers or projects.	6

I incorporated synchronous lecture and discussion via a collaboration tool (Google Meet, Zoom, etc).	26
I facilitated class project/assignment presentations by students via a collaboration tool (Google Meet, Zoom, etc).	17
I held one or more "check-in" sessions with students via a collaboration tool (Google Meet, Zoom, etc).	14
I switched from a midterm exam composed of essays to five, timed, and objective tests on Bb. I accepted uploaded digital writing assignments rather than assignments printed on paper, which I would never, ever do, if it weren't a necessity of remote teaching.	1
Created a variety of techniques to use with the students to constantly capture their attention and keep them constantly tuned in to the lesson and each other. They would constantly call on each other as the lesson moved on. No time to zone out.	1
I revised discussions to fit a Zoom environment.	1
The only thing that really changed was no more in-class exercises and exams were taken online.	1

Thirty-five of the respondents provided specific techniques that they utilized because of the shift to ERT during COVID-19. Several participants reported that since they were already designing according to best practices their transition to ERT was seamless and they would continue to apply the same design methods going forward. One instructor reported, “I am glad I set up all my courses during the breaks on Blackboard...so if we need to change, my students

have all the content and know that there will be very little disruption. I think it is best for students to have certainty, transparency, and continuity."

There were some specific findings about instructional content, the design and delivery of courses, and assessments. Two respondents indicated that they kept lecture videos under ten minutes or pre-recorded their videos. Another key finding was the increased use of web conferencing tools, such as Zoom and Google Meet. One instructor affirmed that during this ERT period, "Students look forward to "Zooming"; it created a much-needed connection." In terms of assessment, individual respondents revealed a determination to use graded asynchronous discussions, incorporate more video-enhanced assignments, and administer electronic examinations. Others specified a desire to provide multiple versions of assignments such as quizzes, exams, and short answer essays to meet the needs of diverse learners. For example, one instructor explained, "I also include more of those mid-stakes assignments now. I used to have very low stakes assignments (full points for completing in class activities) and high stakes (exams & papers). Now I have weekly review assignments (multiple choice, matching, fill in the blank)." Another respondent used the learning management system's built-in analytics tool to gather data and make informed decisions about the future design and delivery of his courses.

Contrary to these planned actions, seven of the respondents indicated that they would not make any changes to their upcoming courses, since they will return to traditional, fully in-person classroom teaching. For example, one subject claimed, "Now that we are back to face-to-face classes, I have returned to the original design - the courses are no different from before the pandemic." Nevertheless, 12 of the respondents worried about safety when returning to the face-to-face classroom. There were concerns about ventilation, masks, and cleaning protocols. One

participant stressed the need for a coordinated strategy, that if indeed another emergency happens, would provide a seamless transition from face-to-face instruction to remote teaching and learning.

Engagement

Another key takeaway in this study was connected to engagement, which included promoting interaction, teamwork, and communication using virtual tools. Six respondents commented that it required more effort to engage in a timely manner with students in the fully online learning environment than in their face-to-face courses. Specific suggestions included instituting virtual office hours, developing team building exercises, and using the online discussion forum. The promotion of interaction, teamwork, and communication using virtual tools including Google Meet and Zoom were mentioned by six of the participants. One respondent stated that cameras should be turned on during synchronous sessions to foster student connections with one another and the professor. This respondent said, “Laughing at myself makes the student more likely to get on camera.”

Conversely, there were some instructors that felt that engagement levels during this time declined. One instructor indicated that cheating increased in his course and there was very little he could do to address it. Nonetheless, most respondents provided insight that supported the promotion of student engagement. In fact, one respondent stated the ERT *“*course that spring had just as much activity and discussion when we shifted online. Students would also comment in the chat box. During one class, we had over 100 comments of students discussing various points with each other while I lectured or screened a short video.”

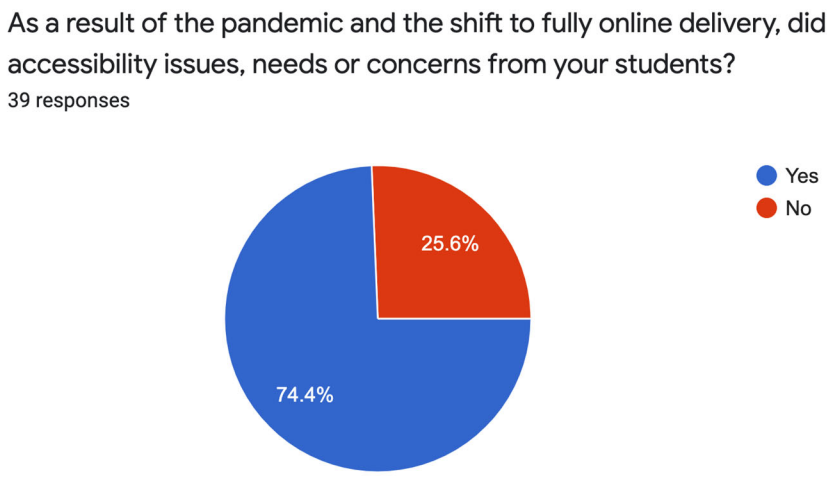
When asked about future course design plans, nine of the respondents indicated that they planned to impart more opportunities for student engagement with the content, themselves, and others. Two participants intended to provide more transparency and four of the respondents planned to include supplementary communication with students for ongoing progress checks.

Accessibility

During this study, many instructors mentioned accessibility in their responses. As is depicted in Figure 1, 29 participants indicated that they gained an awareness of new accessibility issues specific to the needs and concerns of their students.

Figure 1

Awareness of new accessibility issues and student concerns



Note: Percentage of change in awareness pre-pandemic to current

The most frequently mentioned accessibility concern was connectivity, such as no home access to Wi-Fi or a lack of bandwidth. In addition, participants reported that their students varied in access to computers and additional hardware and software capabilities. For example, not all the students' instructors' computers had built- in cameras, preventing them from being seen in a live virtual learning environment. Ten of the respondents indicated that their students struggled with balancing home and work life. One respondent specifically commented on his concern with time zone differences. One respondent indicated that they were concerned with their students' comfort levels being on camera, perhaps preventing them from participating in virtual sessions. Some respondents indicated that they were concerned with providing alternative forms of content that was digitally accessible including how to incorporate electronic textbooks, articles, and videos with closed captioning and transcripts into their courses. All these comments related to the importance of making courses and materials accessible for diverse learners.

When asked about plans to make courses accessible, five of the respondents indicated that they would pre-record lectures and make them available on YouTube with closed captioning. Several participants stressed the importance of making course materials more digitally accessible using digital textbooks, accessible .pdf files, and the use of additional multimedia resources. One instructor discussed open educational resources (OERs), "One of the key takeaways I expect to continue to use is a commitment to OER. I am searching for OER sources for all the courses I regularly teach. I think it makes it easier for students to access the material and saves on the expense of learning." To make their courses more accessible, about a third of the participants indicated that they would need additional help with the design of their future courses.

Flexibility

The next lesson learned related to flexibility during this time of ERT in higher education. The word "flexible" was mentioned many times in the open-ended responses, which indicated that this was a true lesson learned during ERT. In their open-ended responses, many of the faculty explained that the ERT situation led to them reevaluating their organizational skills as well as being flexible with students and themselves. One instructor explained, "My classes have already changed. I have a lot more flexibility built into my course now. Things like automatically dropping a certain amount of the participation part of their grade to account for all the unforeseen reasons students may miss class." Another professor claimed, "I found that my students liked knowing in advance what was expected. I now make sure the course is ready with deadlines before the start of each term."

Even though most of the participants reported that they learned impactful lessons from their experience with ERT during this time, 10 of the participants indicated that they found face-to-face teaching to be optimal for learning and they would not change the design of their courses in the future. One participant stated, “Something special about meeting in person and getting to know students was missing.” When asked to respond about future design plans specific to flexibility, one respondent said that he or she would “make my courses more flexible by using automation for assignment submissions and allow multiple attempts for assessments to incentivize them to submit on time.”

Sanity

The final lesson that was learned illustrated how faculty can remain sane and grounded during an emergency. One theme that emerged repeatedly throughout the responses to the survey indicated that faculty should treat themselves and others with patience, kindness, and compassion. The instructors recognized that their students were also facing the challenge of remaining stable during this period. One subject stated, “I realized that for many of my students, school is just a small part of their hectic day. Many have full time jobs, problems at home. low self-esteem, poor reading and speaking skills and unsure goals.”

Various respondents indicated the need to practice resiliency and versatility. The participants specified the importance of balancing the demands of home life with work responsibilities, especially when managing both in one location. This location switch was novel to most faculty who were used to a separation of classroom and home life. An instructor clarified, “I think I learned a lot about extending grace to myself as a teacher and that my

students were understanding when I had COVID-related care-taking responsibilities that shifted my normal response times for emails."

Limitations of Study

There were several limitations to this study. As discussed by Best and Kahn (1993), limitations can be defined as the conditions beyond the control of the researcher that place restrictions on the conclusions of the study. In this study, the limitations included sample size and technological limitations.

Sample size limitations

This study was conducted with a limited number of instructors at one higher education institution. A list of 324 possible study subjects (104 full-time faculty and 220 part-time faculty) was identified. The researchers contacted these individuals via email to complete the implied consent form and online survey. Twelve percent of the identified faculty members completed the survey; therefore, the final sample size was limited to 39 participants.

Technological limitations

Since this study was conducted exclusively using electronic mail correspondence and online survey methods, it was limited to higher education instructors who regularly used electronic mail and online tools. Another limitation was the researchers' ability to know if all the targeted subjects were reached. To communicate with the participants, the email communication was sent from the Office of Distance Learning, which could have skewed the results. Also, if an email was misdirected or not received, the individual may not have been able to respond. The online format of the survey may have excluded individuals who are not able to use technology; he or she may not have been able to complete the online survey or even use email to obtain the invitation.

Recommendations for Future Studies

Based on the findings of this study, the researchers concluded that there needs to be more research conducted on the importance of designing fully online and blended courses in preparation for future disasters. If courses are designed using research-based online course development methods, future transitions to ERT could be seamless and less troublesome. Hence, a study could be conducted regarding instructor preparedness combined with a course design needs assessment. An additional recommendation for future studies is surveying the students to gather data on their experiences transitioning to fully online courses during ERT.

Similarly, there is an overall need for more robust professional development initiatives to further educate faculty on the importance of designing quality online courses using best instructional design approaches and methodologies. These strategies should include hands-on practice with technology tools as well as exploration of exemplary online course designs and methodologies. Higher education instructors should be encouraged to develop and maintain strong instructional continuity plans that would help them during future emergencies.

The researchers strongly suggest that this study be extended to include other higher education institutions in different geographical locations with various groups of full-time and part-time faculty members as well as students. It could also be extended to include current and former higher education administrators and staff members (e. g., instructional technology, administrative, library). How did these higher education employees feel during the COVID-19 switch to ERT? Were they prepared to use technology in the higher education environment as administrative tools? Why or why not? What lessons did they take away from this time period of ERT? This study would help to further develop the lessons learned during the COVID-19 pandemic in higher education.

Conclusion

In conclusion, this study is not the end, but rather a beginning. Undoubtedly, ERT and the threat of COVID-19 presented many unique challenges for students, faculty, and staff. They were asked “to do extraordinary things regarding course delivery and learning that have not been seen on this scale in the lifetimes of anyone currently involved” (Hodges et al., 2020, para. 27). Everyone’s level of sanity was pushed to extreme limits. Hopefully, higher education instructors and staff can use the takeaways to focus on maintaining sanity during future times of distress.

As the lessons learned during this crisis continue to emerge and affect the current state of higher education, it is simply not enough to return to our pre-COVID teaching and learning practices. In fact, it must become an ongoing possibility that there will be a future emergency that requires ERT; therefore, ERT design and teaching methods should become part of any higher education faculty member's skill set. As this study revealed, many faculty members need and want new, innovative ways to design and deliver their course content. Faculty experiences during the COVID-19 pandemic revealed the importance of knowing about and using various forms of technology and methods of design to proactively develop effective online courses and remote lessons. Continuing on the road to the future, all higher education institutions should invest in ways to prepare for future emergencies and responses that embrace best practices in online learning and teaching.

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