ASYNCHRONOUS AND SYNCHRONOUS ONLINE LEARNING DURING A PANDEMIC

Anthony Piña
Illinois State University

Online education led to the survival of many colleges and universities devastated by Hurricane Katrina. However, despite the subsequent recommendations of scholars to institutionalize distance education, many institutions found themselves ill-prepared for the shift to remote or online teaching during the COVID-19 pandemic. One university's strategy of building distance education infrastructure and instructional design capacity for fully online master (template) courses allowed learning and teaching to proceed—without closure—throughout the pandemic. Faculty increasing their use of instructor video and synchronous sessions resulted in high student satisfaction—equivalent to that before COVID. Recommendations for asynchronous and synchronous instruction are provided

INTRODUCTION

Throughout the 21st century, distance learning—and online learning in particular—has been the most consistent growth area within US higher education. Consistent growth has remained true, even during recent years of overall enrollment declines (Allen et al., 2016). The National Center for Education Statistics (2021) reported that in the 2018–19 year, 79% of U.S. degree-granting institutions offered either standalone online courses or fully online programs, and 56% offered both. This increase was especially pronounced at public colleges and universities, where 97% of 2-year and 96% of 4-year institutions offered some form of distance learning.

The benefits afforded by online/distance education include "anytime, anywhere" access and flexibility for students whose employment, family, health, and other circumstances make adherence to traditional academic schedules and locations difficult or not possible. Higher education institutions can also benefit from increased enrollment by offering programs to students outside their traditional service areas (Clinefelter & Aslanian, 2015). Increased enrollment led to online/distance education becoming institutionalized within numerous colleges and universities and an

• **Anthony Piña**, Illinois State University, Center for Integrated Professional Development, Campus Box 6370, Normal, IL 61790. Phone 309-438-5848. Email: aapina@ilstu.edu

The Quarterly Review of Distance Education, Volume 23(3), 2022, pp. 27–34 ISSN 1528-3518

essential component of their strategic planning (Piña, 2008). A survey of chief academic officers at 2,807 postsecondary institutions indicated that more than 70% consider online education critical to their institution's long-term strategy, compared to less than 50% in 2002 (Allen & Seaman, 2015). Before the COVID-19 pandemic, it was estimated that more than one third of postsecondary students in the United States were enrolled in at least one online course (National Center for Education Statistics, 2019a, 2019b; Seaman et al., 2018).

Online as a Contingency for Campus Closures

In the aftermath of the devastation of Hurricane Katrina in 2005, more than 120 universities provided thousands of tuition-free online courses to students of over 20 colleges and universities that were forced to shut down (Meyer & Wilson, 2011; Schroeder, 2020). In addition to the threat of natural disasters, epidemics, and pandemics—including SARS, Ebola, Zika, avian flu, and swine flu—have led many institutions to adopt contingency plans for instances where campuses must close (Indiana State University, n. d.; McLennan, 2005; Meyer & Wilson, 2011). "Unlike many other disasters which have the potential for destroying or disrupting a large portion of the University's infrastructure, a pandemic's greatest impact will be on personnel and absenteeism, leaving our facilities largely untouched. Disruptions will result from insufficient personnel available to provide expected services" (Indiana State University, n.d., p. 1).

Higher Education Institutions Not Well-Prepared for a Pandemic

In their analysis of 50 flagship universities, Meyer and Wilson (2011) noted that none stated an explicit policy or plan for delivering online courses in case of an emergency, instead offering suggestions to faculty for different options they could consider. They concluded that these institutions were not well-prepared and stated—prophetically—"One can expect more stories … as online learning and related technologies come to the aid of higher education institutions hit by various disasters in the future. And there will be more disasters" (p. 7).

Despite Schroeder's (2020) observation that lessons from Hurricane Katrina could help colleges and universities navigate the difficulties of the worldwide COVID-19 pandemic, it became clear that numerous colleges and universities still needed to institutionalize fully online learning across all programs and disciplines. As Meyer and Wilson (2011) had predicted nearly a decade earlier, when higher education institutions were compelled to shut down campuses and move their courses to fully online delivery in March of 2020, many were ill-prepared for the challenge. Faculty training in online teaching and course development had primarily been optional, with many faculty members having opted out of the training (Garrett et al., 2020; Hodges et al., 2020).

Emergency Remote Teaching

Garrett et al. (2020) estimated that half of the faculty faced with converting their courses from on-campus to online in March 2020 had never previously taught an online course. Many of these faculty immediately began using online technologies (both synchronous and asynchronous) with little or no experience or training. Given that online and face-to-face course development and teaching require different skill sets, it is unsurprising that many students and faculty would find teaching and learning under these conditions less than desirable (Hodges et al., 2020; Newsome et al., 2022).

Scholars and practitioners of online learning and teaching have expressed concern that the "emergency remote teaching" experienced by faculty and students in response to the pandemic would be confused with legitimate well-designed, well-taught online courses (Garrett

et al., 2020; Hodges et al., 2020). As Hodges and his associates stated,

> Online learning carries a stigma of being lower quality than face-to-face learning, despite research showing otherwise. These hurried moves online by so many institutions at once could seal the perception of online learning as a weak option, when in truth, nobody making the transition to online teaching under these circumstances will truly be designed to take full advantage of the affordances and possibilities of the online format. (Hodges et al., 2020, p.1)

One University's Response

Sullivan University is a privately owned, regionally accredited, and doctoral-granting institution with its main campus in Louisville, Kentucky. Sullivan University was founded in 1962 as an institution to meet the educational needs of working professionals and nontraditional students. Sullivan University began offering online courses in 2000 to provide educational continuity for military students deployed to different parts of the country and the world.

In 2008, the university began to strategically build up its capacity and infrastructure for online learning by hiring instructional designers, establishing minimum quality standards and templates for master online courses, and evolving the process for online course development. Over time, the role of faculty developing online courses shifted from "putting their courses online" to being subject matter experts, working in partnership with instructional designers to create master online courses that multiple instructors could teach. By freeing faculty of the burden of having to do the configuration of assignments, discussion boards, tests, grade books, formatting, content chunking, and accessibility, course development time was reduced.

The shift in course development culture and emphasis on instructional design and standards-based course creation and evaluation included having most new courses and programs first developed online, then adapted to face-to-face and hybrid modalities (Piña & Moran, 2018). The result was that, by 2020, most of the university's courses and degrees were available entirely online. The increased demand for online course sections meant that most faculty had received training and experience teaching online courses.

In March 2020, when the state enacted COVID-19 pandemic restrictions, Sullivan University entered its final exam week of the winter 2020 quarter (the university is on a four-quarter rather than a two-semester annual calendar). Faculty teaching on-campus courses quickly shifted their final exams and papers to the university's Blackboard learning management system. University leadership then had 2 weeks to plan for the spring 2020 quarter.

Because the university had invested in a team of six experienced instructional designers and two instructional technologists, more than 100 course sections not previously taught online, were quickly developed by the instructional design team, with grade books and assignments ready for student submissions and faculty training support was provided by the instructional technologists. Most of the spring 2020 quarter courses were already available as fully online masters, with course content that could be taught *as is* or customized to instructor needs.

While nearly all courses could be taught entirely online or via synchronous web conferencing, a limited number of courses required student use of specialized equipment in laboratory or clinical in-person sessions. It was determined that these courses would have online didactic content for the first several weeks, with the lab/clinical on-campus sessions at the end of the quarter in classrooms with masks, social distancing, and staggered meeting times with no more than 10 occupants in a classroom or lab.

The Provost asked all faculty—including those teaching sections already slated to be online—to utilize the university's synchronous web conferencing platform to hold weekly virtual office hours and provide live virtual instructional sessions, recording the sessions for students who were unable to attend the live

session. Faculty received training in using the Collaborate web conferencing platform and Panopto for recording and editing asynchronous video announcements and instruction. A faculty development and resources website was established to house printed job aids and short tutorial videos on the Blackboard learning management system, Collaborate and Panopto.

The students completed their course and instructor evaluations at the end of the spring 2020 quarter (March–June 2020). The composite scores indicated an overall high level of student satisfaction and were nearly identical to those of the (pre-COVID) winter quarter. Students commented that the increased use of video and synchronous sessions by their instructors made a positive difference in their educational experience, despite the challenges of the pandemic. The high student satisfaction scores continued during summer 2020 (June–September), fall 2020 (September–December), and winter 2021 (January–March) quarters. Thanks to a dozen years of planning and building an infrastructure for online learning, strong leadership, and extra efforts by the faculty and instructional design team, Sullivan University could continue instruction uninterrupted throughout the pandemic crisis.

Lesson Learned From Past Crises

Ray Schroeder (2020) provided one of the earliest articles intended to guide institutions affected by COVID-19. He outlined strategies that institutions could use as a result of lessons learned during Hurricane Katrina:

A. Create the delivery framework

- Have a central communication site (campus webpage) for students, staff, and faculty.
- Create a course shell in the learning management system for every class offered on campus.
- Populate those classes with rosters when the decision to move forward is made.
- Move syllabi, discussion board, faculty announcements, and other *basics* online as soon as possible.

B. Triage priorities and ledgering

- Identify the first courses to be served (e.g., largest enrollment classes, senior seminars, and capstone classes).
- Establish a clear hierarchy for triage.
- Create an action priority spreadsheet and ledger of who is doing what, where they are in the process, and when each task is estimated to be complete.
- Keep the team in constant contact—this will require multiple communication paths for concurrent messaging and keeping communication records. Technologies include Slack, Microsoft Teams, Zoom, email, and text messaging.

C. Staffing and support

- Supplement instructional design staff with select faculty members who are online champions and mentors.
- Consider 12-hour shifts and scheduling conference call meetings with faculty between 6 A.M. and midnight.

D. Cooperate, collaborate, communicate!

- Do not let perfection become the enemy of good.
- Instructors must decide what they can reasonably do to advance learning to achieve the established learning outcomes for each class (e.g., reordering or organizing materials differently to accommodate the unexpected campus closure).
- Contact faculty and experts at other locations to share resources and virtual guest lectures.

Asynchronous Online Instructor Engagement

One of the most widely cited and recognized theories in online/distance education is

transactional distance, which states that in an online course, there is not just a physical distance between students and their instructor but also a psychological distance (Moore & Kearsley, 2012). There are *transactions* that instructors can do to increase instructor presence in the course and decrease the psychological distance (Lowenthal & Dunlap, 2014). In their study of how best to evaluate faculty teaching asynchronous online courses, Piña & Bohn (2016) identified seven indicators of engaged online instructors:

1. *Post a brief biography* to let students know the instructor better. While text-based announcements are still dominant, faculty are increasingly taking advantage of introductory videos that bring students into their offices, homes, or hobbies. This *humanizes* the instructor and can lessen transactional distance (Lowenthal et al., 2020).
2. *Posting course announcements at least weekly*. Gaudet (2016) suggested that instructors can use course announcements to maximize their presence by allowing themselves to be creative and personal—while still being professional—by using anecdotes and personal observations. Announcements also provide opportunities to highlight upcoming activities, assignments, student contributions, and current events relevant to that week's/lesson's topics.
3. *Logging into and monitoring the online course daily* allows instructors to monitor student progress, check for student questions and messages, and quickly identify technical issues with the course. It is also a tangible indicator of instructor presence.
4. Piña and Bohn (2016) found that *responding to student inquiries* was considered the most important indicator of online instructor quality and engagement (tied with instructor feedback below). Having an instructor respond within 1 day of the inquiry was deemed most desirable, with 2 days being acceptable.
5. *Providing helpful feedback to student assignments* was also a critical indicator of quality and engagement. Feedback is most helpful when it is timely and includes constructive guidance and explicit expectations (Getzlaf et al., 2009). Kelly (2014) recommended that instructors start with a positive message and employ rubrics to help students focus their work. Instructors should also take advantage of annotation tools within the learning management system and consider using audio and video feedback, which has increased instructor presence and the quantity of feedback provided to students (Olesova & Borup, 2016).
6. *Moderating and participating in discussion boards*. Many instructors mistakenly believe that online discussion boards are to be used exclusively for student-to-student interaction. Instructors' active participation in online class discussions is a powerful indicator of instructor presence. It allows the instructor to respond to students individually and collectively and to engage in teachable moments. Instructors can moderate discussions using "leading" questions (Piña et al., 2015).
7. *Grading assignments in a timely manner*. Grading and feedback are the most time-consuming tasks for the online instructor; however, students often require feedback from prior assignments to improve and prepare for future assignments properly. The University of Wisconsin-Stout (n.d.) provides several tips for managing online grading, including keeping comments and commonly used feedback from previous courses and adapting them to new students; using rubrics to make grading more accessible and to clarify expectations for the student; establishing peer feedback activities; scheduling self-graded or shorter assignments after a long, complex assignment, to allow time and energy for grading the longer assignments properly. Instructors should not schedule grading when they tend to be tired or fatigued.

Synchronous Online Instructor Engagement

The response to the COVID-19 pandemic included an unprecedented increase in synchronous desktop videoconferencing (also known as web conferencing). Daily meeting participants of Zoo—the most widely used platform—grew a staggering thirtyfold, from 10 million users to 300 million, between December 2019 and April 2020 (Kalmykov, 2020). Other major platforms, such as Microsoft Teams, WebEx, Go-To-Meeting, Google Meet, and Blackboard Collaborate, also saw huge increases. Many faculty members, intimidated by the time, effort, and expertise required to design and develop fully online courses, opted to hold their class sessions via videoconference and ramp up their use of virtual office hours. Videoconference became a primary component of the "nontraditional instruction" used by K–12 schools during the pandemic.

The College of Literature, Science, and the Arts at the University of Michigan (2020) provided many guidelines for instructors to engage in while delivering synchronous online instruction:

1. *Prerecord lectures, demonstrations, and presentations*. Instructors can best utilize their live synchronous videoconference time for activities that require students' active participation, such as question-and-answer sessions, one-on-one feedback, small group discussions, or collaborative work. Students can watch lectures, demonstrations, and presentations before the synchronous session.
2. *Create a detailed agenda and share it with students*. An agenda helps to keep instructors and students on task, reduces wasted or irrelevant time, and helps to ensure that all intended topics are addressed.
3. *Make transitions explicit*. In the absence of physical transitions of moving into groups or coming back together, instructors can provide transitional pauses between different learning activities or discussion topics, allowing students to process the previous activity or task and prepare for the next one.
4. Just as with on-campus classes, synchronous instructional sessions should include *taking regular breaks* (e.g., 5 minutes for every 30 minutes of instruction) to allow students to get up, stretch, or use the restroom. Breaks will help reduce students' cognitive load and fatigue and increase endurance.
5. *Provide active learning opportunities*. In addition to instruct-to-student interaction, synchronous class sessions should be when students engage in peer-to-peer interaction. These activities may include peer-taught class segments, minicase studies, simulations, role plays, weekly collaborative journal entries, small group discussions in breakout rooms, or paired analysis of a lab or demonstration video. Active learning will not only help to maintain student interest but will also foster a community of learning.
6. *Be more flexible on attendance requirements*. If students have connectivity issues or other circumstances that cause them to miss a synchronous session, plan for a research assignment or another alternative to the live assignment. Sessions can also be recorded, with assignments based on attending or viewing the recorded sessions.

Resources for Asynchronous and Synchronous Online Teaching

Soon after the COVID-19 pandemic began affecting schools, colleges, and universities around the world, The Association for Educational Communications and Technology, the leading international professional association for instructional design and educational technology, asked its members to provide resources that it could share freely with educators. The result is a 20-page document with

links to more than 70 different asynchronous and synchronous teaching resources organized under the topics listed below. The document can be accessed at: https://www.aect.org/docs/HigherEd_Resources_Commentaries.pdf.

A. Communicating with students
- Communication tools
- Providing feedback and feedback tools
- Strategies and best practices for communicating with students

B. Delivering Content online
- Digital tools for delivering online content
- Digital platforms for delivering online courses
- Guidance and resources for teaching Online
- Examples of online courses
- Resources and support during the COVID-19 Crisis

C. Ensuring accessibility
- Introduction to online accessibility
- Comprehensive online accessibility resources
- Disability Inclusion

D. Meaningful discussions
- Strategies for facilitating meaningful discussions—getting started
- Strategies for facilitating meaningful discussions—learning more
- Digital tools for discussion

E. Online tests and assessments
- Strategies for online assessment
- Open book exams
- Digital tools for assessment

CONCLUSION

As with natural disasters and health crises in the past, advances in technology have been utilized to mitigate some of their adverse effects. In the case of the COVID-19 pandemic, many colleges and universities that had previously rejected online learning found that asynchronous and synchronous online learning was key to institutional survival. It remains to be seen if higher education will take the lessons from Katrina and COVID-19 and better prepare itself for the next hurricane, tornado, earthquake, or pandemic.

REFERENCES

Allen, I. E., & Seaman, J. (2015). *Grade level: Tracking online education in the United States*. Babson Survey Research Group and Quahog Research Group.

Allen, I. E., Seaman, J., Poulin, R., & Straut, T. T. (2016). *Online report card: Tracking online education in the United States*. Babson Survey Research Group and Quahog Research Group.

Clinefelter, D. L., & Aslanian, C. B. (2015). *Online college students 2015: Comprehensive data on demands and preferences.* The Learning House and Wiley.

Garrett, R., Legon, R., Fredericksen, E. E., & Simunich, B. (2020). *CHLOE 5: The pivot to remote teaching in spring 2020 and its impact, the changing landscape of online education, 2020*. Quality Matters. https://qualitymatters.org/qa-resources/resource-center/articles-resources/CHLOE-project

Gaudet, M. (2016). *Using course announcements to maximize instructor presence*. University of New England. https://online.une.edu/blog/using-course-announcements-maximize-instructor-presence

Getzlaf, B., Perry, B., Toffner, G., Lamarche, K., & Edwards, M. (2009). Effective instructor feedback: Perceptions of online graduate students. *Journal of Educators Online, 6*(2).

Hodges, C. B., Moore, S., Lockee, B. B., Trust, T., & Bond, M. A. (2020, March 27). The difference between emergency remote teaching and online learning. *EDUCAUSE Review*. https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning

Indiana State University. (n.d.). *Indiana State University pandemic operations plan*. https://www2.indstate.edu/pubsafety/docs/Final%20Pandemic%20Plan.pdf

Kalmykov, M. (2020). *Web conferencing boom: COVID-19's effect on the video call market*. https://medium.com/swlh/web-conferencing-boom-covid-19s-effect-on-the-video-call-market-153adc2f9d1

Lowenthal, P. R., & Dunlap, J.C. (2014). Problems measuring social presence in a community of inquiry. *E-Learning and Digital Media, 11*(1), 20–31.

Lowenthal, P. R., Borup, J., West, R. E., & Archambault, L. (2020). Thinking beyond Zoom: Using asynchronous video to maintain connection and engagement during the COVID-19 pandemic. *Journal of Technology and Teacher Education, 28*(2), 1–9.

McLennan, K. L. (2006). Selected distance education disaster planning lessons learned from Hurricane Katrina. *Online Journal of Distance Learning Administration 9*(4). https://www.westga.edu/~distance/ojdla/winter94/mclennan94.pdf

Meyer, K. A., & Wilson J. L. (2011). The role of online learning in the emergency plans of flagship institutions. *Online Journal of Distance Learning Administration 14*(1).

National Center for Education Statistics. (2019a). *Fast facts: How many students take distance learning courses at the postsecondary level?* U.S. Department of Education. https://nces.ed.gov/fastfacts/display.asp?id=80

National Center for Education Statistics (2019b). *Trend generator*. U.S. Department of Education. https://nces.ed.gov/ipeds/TrendGenerator/app/trend-table/2/42

National Center for Education Statistics (2021). *Distance education in college: What do we know from IPEDS?* U.S. Department of Education. https://nces.ed.gov/blogs/nces/post/distance-education-in-college-what-do-we-know-from-ipeds

Newsome, M. L., Piña, A. A., & Mollazehi, M. (2021). One year on: A national study of undergraduates' satisfaction with forced online learning in Qatar. *Electronic Journal of e-Learning 20*(4).

Olesova, L., & Borup, J. (2016). Using audio and video feedback to increase instructor presence in asynchronous online courses. In S. D'Agustino (Ed.), *Creating teacher immediacy in online learning environments* (pp. 235–251). IGI Global.

Piña, A. A. (2008). Factors influencing the institutionalization of distance learning in higher education. *Quarterly Review of Distance Education 9*(4), 427–438.

Piña, A. A. & Bohn, L. (2016). Assessing online faculty. In A. A. Piña & J. B. Huett (Eds.), *Beyond the online course: Leadership perspectives on e-learning* (pp. 317–330). Information Age.

Piña, A. A., Merrifield, H, & Curry, J. (2015, November). *Strategies for improving the quality of online discussions* [Paper presentation]. Kentucky Convergence Conference, Bowling Green, KY.

Piña, A. A., & Moran, K. A. (2018, October). *Changing course development culture to improve learning for all* [Paper presentation]. Association for Educational Communications and Technology, Kansas City, MO.

Schroeder, R. (2020, March 11). What Katrina taught us about online delivery. *Insider Higher Ed.* https://www.insidehighered.com/digital-learning/blogs/online-trending-now/what-katrina-taught-us-about-online-delivery

Seaman, J. E., Allen, I. E., & Seaman, J. (2018). *Grade increase: Tracking distance education in the United States*. Babson Survey Research Group. https://onlinelearningsurvey.com/reports/gradeincrease.pdf

University of Michigan (2020). *Best practices for synchronous remote learning*. https://lsa.umich.edu/technology-services/news-events/all-news/teaching-tip-of-the-week/best-practices-for-synchronous-remote-learning.html

University of Wisconsin-Stout (n.d.). *Time management strategies for online instructors.* https://www2.uwstout.edu/content/profdev/rubrics/time_management.html