
Why IT Matters to Higher Education

EDUCAUSE
REVIEW

One Year Later . . . and Counting: Reflections on Emergency Remote Teaching and Online Learning

Stephanie Moore, Torrey Trust, Barb Lockee, Aaron Bond and Charles Hodges

Wednesday, November 10, 2021 **Teaching and Learning**

★ Editors' Pick

20 min read

The authors of the seminal article pointing out the distinctions between emergency remote teaching and online learning at the beginning of the COVID-19 pandemic reflect on the past year-plus and where we are now.



Credit: fran_kie / Shutterstock.com © 2021

During the initial surge of the COVID-19 pandemic and the mass migration to online learning environments in the spring of 2020, we observed some concerning aspects in the dialogue about *online learning*. In March 2020, we wrote an article, "The Difference Between Emergency Remote Teaching and Online Learning," as a way to infuse this discourse with the current research on online learning.¹ This quickly became the most read/accessed *EDUCAUSE Review* article, and one year after its publication, EDUCAUSE staff suggested we consider a "one year later" piece. It has taken us longer to write this follow-up article. For one thing, "one year later" connotes that things have changed, lessons have been learned, and the precipitating event is mostly in the past. Instead we seem to be in a version of the movie *Groundhog Day*—as each day repeats the previous day, in a recurring loop—but without all the charm of Bill Murray, Andie MacDowell, and a redeeming love story.

Eighteen months later, a new variant of COVID-19 is surging in the United States and globally, with infection rates reaching similar levels to this time last year. As of early October, the number of US deaths from COVID-19 in 2021 surpassed the number in 2020.²

Of Systems, Feedback Loops, and Institutional Planning

One-plus year later, we seem not to be in a place of lessons learned but, rather, in a study of feedback loops. Donella H. Meadows described two types of feedback loops: stabilizing (or balancing) and runaway (or reinforcing).³ The first type of feedback loop keeps a system in a steady state, maintaining a state within a range. The second type of feedback loop can be imagined as more of a spiral, with an amplifying or snowballing effect. This can be good, as in the case of compound interest, or it can be destructive, as in the case of carbon dioxide in the environment.

Responses to the COVID-19 pandemic by higher education leaders appear to fall into three general classes, two of which look like reinforcing feedback loops and one that looks like a feedback loop that has stabilized. In the first case, some institutional leaders had invested in online learning before the pandemic, and these institutions appear to be weathering the pandemic well and iterating in a reinforcing feedback loop toward a clear future where face-to-face, online, and blended are all intentionally part of their learning ecosystem. As Phil Hill wrote in July: "No single variable can explain which colleges thrived during the pandemic. . . . Colleges with

significant previous investments in online education, and ones that have worked to embed that experience into the campus's mainstream, have seen the biggest jumps in enrollment." In asking the question "When should a college invest heavily in online education?," Hill concluded: "It seems increasingly clear that the answer is: at least a decade ago."⁴ A view from "one year later" must include consideration of what college and university leaders chose to do years ago, when the decisions that created this reinforcing feedback loop were made.

Some college and university leaders who invested in online infrastructure before the pandemic not only weathered the pandemic but are continuing to evolve this strategy. These institutions appear to be in a reinforcing feedback loop that is amplifying. One example is the Arizona State University (ASU) Mary Lou Fulton Teachers College, which was already testing innovative approaches to teacher preparation before the pandemic. The college recently launched two remote formats—ASU Sync and ASU Online—for graduate-level teacher certification programs. ASU Sync is also available for undergraduate students who live outside of Maricopa County.⁵ Similarly, students in the California State University (CSU) system have made it clear that the last year of online learning enabled them to continue learning despite the complications in their personal and professional lives. To meet this need, CSU Chancellor Joseph Castro said he envisions more virtual and blended options being available to students than before the pandemic.⁶ The reinforcing feedback loop in these two scenarios fosters continued innovation that results in increased opportunities for, and access to, learning.

Then there are the colleges and universities that resisted online learning for years or invested only in very isolated instances. These institutions were less prepared and suffered steeper enrollment and budget declines than their counterparts. Many continue to resist online learning today, issuing requirements that faculty must teach face-to-face and actively disallowing faculty to choose the modality (or modalities) for their classes. Some, as in the case of Cornell, went so far in the opposite direction of online learning that they originally refused to approve faculty members' medical accommodation requests for teaching remotely in the fall of 2021, although they later backtracked.⁷ In these examples, a different mindset among the leadership results in a stabilizing feedback loop that is stuck with a focus on pre-pandemic models rather than adapting and moving forward based on lessons learned. While "stabilizing" sounds positive, whether this is positive or negative varies by situation and system. Meadows notes: "The primary symptom of a balancing feedback loop structure is that not much changes, despite outside forces pushing the system." She explains: "Behavior patterns persist. This is a great structure if you are trying to maintain your body temperature . . . but some behavior patterns that persist over long periods of time are undesirable. . . . The system seems intractably stuck." Being stuck in pre-pandemic models means maintaining some undesirable effects of less-flexible systems.⁸

Aesop's fable "The Oak and the Reeds" offers us ancient wisdom. In the story, the Oak mocks the Reeds that bend in the breezes. But when hit by a hurricane, the Reeds flex with the wind and survive while the Oak is beaten and broken. Some colleges and universities were more like the Oak,

stubbornly resisting and finding that they could not resist the hurricane that was the pandemic. Other institutions proved more like the Reeds and were more agile in the winds, allowing flexibility and survival during a time of crisis.

There does appear to be another category of institutions that were more Oak-like before the pandemic but now are seeking the wisdom of the Reeds. One of the co-authors of this article came across an old email in which she and other colleagues recommended investment in online and blended learning as part of a disaster preparedness strategy. The email was dated 2009, but at the time the institutional leadership resisted any strategic plan for or investment in online learning. Now, in 2021, this institution has created a Vice Provost of Online Learning position. Our collective sense is that this category of institutions is likely the majority but is less headline- or attention-grabbing. In the past year-plus, the five of us have all been talking and working with colleges and universities or systems of higher education around the world. Many of these institutions or state-level entities are fostering conversations on how they can leverage insights and positives into a more thoughtful plan going forward to create new, positive reinforcing feedback loops in their systems and become more like the Reeds, with learning modalities and technologies forming a rich learning ecosystem to afford flexibility, access, continuity, and resilience.

Although *resilience* has become a buzzword during the pandemic, for systems thinking and analysis it has a specific meaning that helps us better understand this majority category of institutions. Resilience stems from having feedback loops, but simply having feedback loops is not enough. Meadows

explained that while strong resilience stems from feedback loops that restore or rebuild, the strongest resilience stems from feedback loops that learn and evolve, as a system moves from simply rebuilding to creating and (re)designing.⁹ While tweets and headlines about the most resistant higher education institutions or leaders tend to grab attention, numerous leaders in higher education around the world want to evolve their practices to foster stronger resilience in the face of future challenges.

As a result, we have been quite busy answering questions and providing support around how to motivate learners and build community online, engage in effective online practices, design meaningful and authentic assessment for online settings (besides tests and quizzes), move beyond Zoom lectures, design equitable and accessible solutions with technology, improve institutional planning and infrastructure for online and blended learning, support strategic planning for more robust learning ecosystems, and on. The nature and degree of engagement around these questions, whether through our talks or at conferences or other direct observations, suggests that those institutions that don't look yet like a reinforcing feedback loop are largely engaged in reflection.

Despite the staunch resistance among leaders of some states and some institutions, we are more broadly optimistic that the majority of colleges and universities, especially globally, will continue their previous investments or adapt to build more agile systems as their leaders consider how to expand the benefits afforded by the various modalities. While some have designed for flexibility all along, and others have resisted and continue to do so, many others appear to be learning and

evolving—although it is too early to say exactly how and to what extent.

Of Evidence and Narratives

Another trend that presents a study in contrasts is that of reliance on evidence versus commitment to narrative. One-plus year later, our discourse and decision-making around online learning is clearly reflective of a broader social phenomenon in which some leaders' policies and decision-making strategies are grounded in available evidence whereas others prioritize research below other considerations, such as politics or finances. Many higher education leaders and faculty are committed to the *narrative* that online learning is inferior to in-person education, despite the large body of studies over several decades repeatedly demonstrating "no significant difference." What we are witnessing is a politicized treatment of online learning in which emergency remote teaching (often called ERT) has been conflated with online learning, deflecting responsibility for the leadership decisions that led to the disorganized dash to online in 2020. Rather than approaching online learning as a set of learning decisions with existing models and research that can inform practices, some leaders in higher education have made online learning the scapegoat.

We summarized this research in our May 2020 article, because having more informed and nuanced discussions about how we design effective online learning environments is important. Nevertheless, the narrative of the inferior online class persists. It is politically convenient as college and university leaders seek to defend higher price tags not for classes but for the

"learning experience"—which really means the undergraduate, residential, exclusive experience.

The most pernicious form of this narrative is when it is guised as research that is then cited to support decision rationales. Over the past eighteen months, several articles reporting on findings from 2020 have been poorly conceived and poorly designed or have identified the study focus as online teaching rather than accurately identifying it as emergency remote teaching.¹⁰ Two of us are editors of research journals in educational technology and have received dozens of submissions of this variety of "research," wherein academics gathered student and/or faculty opinions about online courses during 2020 or compared learning in their emergency remote teaching course with prior in-person instances and reported those opinions and comparisons as evidence of the failures of online learning. Through gossamer literature reviews and weak methodologies, the authors of these papers demonstrated no awareness of the existing body of research on online learning yet asserted they were generating novel knowledge on this new thing called online learning.¹¹

Even if we set aside the need for due diligence with a literature review, the authors of the papers demonstrated a poor understanding of research methodology, reconstructing emergency remote teaching classes from 2020 as "conditions" that were not in fact a carefully controlled set of conditions or in which they did not carefully identify the variables of the study. This was also the core problem with the media comparison studies that we noted in our 2020 article: comparing modalities is a fundamentally flawed research methodology because there are so many other confounding

variables that affect efficacy and effectiveness regardless of the modality. In every teaching environment, instructors make a myriad number of instructional decisions that can impact learning outcomes—from the strategies they use, to the level of interactions they facilitate for students (with the content, with the instructor, with other students), to the assessment methods they employ, to the class size, and to the degree and nature of feedback they provide.

But one-plus year later, we find that many who started 2020 with a bias against online learning have persisted in those perspectives, often by intentionally conflating emergency remote teaching with online learning. This is the very sort of resistance to evidence and nuanced research that many opine more broadly in larger societal discourse, so what gives? It appears that even among those of us who should be well-versed in research methods and processes for searching and summarizing existing research, there is still a tendency to seek information that confirms our biases when the larger body of evidence confronts us with conclusions we simply do not like. Historically, fears about replacement and displacement have also accompanied new educational and communications technologies, dating all the way back to when writing was introduced into the academy.

While a sizable number of institutions and individuals remain committed to this narrative, we also are witnessing many faculty and teachers sharing what they learned over the past eighteen months and how they are changing their classes in the future, regardless of modality. For example, Bryan Edward Stone, a faculty member at Del Mar College in Corpus Christi, Texas, shared on Twitter: "I'm planning my syllabi for fall and

realizing how different my in-person classes will be from what they were before the Online Interlude. I've changed. My students, the college, the job itself, have all changed. It's like my syllabi from before are in a different language."¹² This exemplifies how many have realized that we have been changed by the pandemic and that there is a need to shift from simplistic dichotomies (online versus in-person) to reflections on effective teaching and learning more broadly. As Laura Czerniewicz, a professor in the Centre for Innovation in Learning and Teaching, Centre for Higher Education Development, at the University of Cape Town in South Africa, put it: "The classroom has been made strange."¹³

This distills one of the most persistent themes we see around online learning, not just one-plus year later but throughout our history of studying distance learning: online learning functions more as a mirror, reflecting our practices and their strengths and flaws back to us. There are some who like what they see, others who don't like what they see and blame the mirror, and still others who engage in self-reflection and self-assessment based on what they see. Those engaging in reflection on teaching practices more generally report plans to adapt (or keep adaptations of) assessment practices, use online textbooks and tools, include flexible and inclusive class policies around attendance and deadlines, and incorporate strategies to get students more deeply engaged with the content (rather than simply listening to lectures). These are more than changes in modality—they are changes that focus on the practices of professional educators.

Of "Normal"

As higher education rushes headlong into the 2021–22 academic year, in the context of rising COVID-19 infection rates and challenges raised by vaccine and mask requirements or the absence of such, much uncertainty lies ahead. While many stakeholders are expressing the desire for a return to "normal," others are describing this ever-changing landscape as the "new normal" or "next normal." The 2021 discourse is filled with use of the term "normal," along with deliberation over what that means and what improvements in the name of equity and inclusion may be lost through a "return to normal."

The rhetoric of "normal" appears to largely align with institutional feedback loops and narratives. For some institutions, "normal" is an idealized, prior state of existence. For these institutions, the term is a form of nostalgia, a focus on the past rather than an opportunity to discuss the present or the future. The energies and decisions of leaders at these institutions are centered around returning to this nostalgic ideal. This is a complicated treatment of "normal," for it aims to preserve some of the good about in-person learning but largely is implemented without attempts to retain the good brought about by changes made during 2020. For example, faculty and students who have disabilities or who are immunocompromised are *losing* flexibility, access, and safer conditions by this return to the earlier normal. In the case of one of the co-authors, Torrey Trust, her university initially commissioned a task force on flexible learning with recommendations for remote, hybrid, and in-person options to create more accessible and inclusive learning opportunities. However, days before the report was released, the university leaders backtracked and instead pushed for only in-person options in the fall of 2021. An email from the provost was sent

to all faculty and staff to indicate that the university's goal was to return to "normal" as soon as possible: "As you know, the campus has committed to a return to face-to-face instruction and on-campus living for our students with a goal of having Fall 2021 be as close to pre-pandemic times as possible."¹⁴ Faculty who were set to teach online courses in the fall were requested to submit proof of medical accommodation needs to teach remotely; without proof, they would have to teach in person. For example, Trust's request to teach a first-year seminar proposal remotely due to medical accommodation needs was also initially rejected. After further negotiations, the remote seminar was allowed but only for international students who could not get to the campus in the fall due to COVID-19.¹⁵

This approach of returning to an idealized "normal" begs discussion on what is normalized, for whom it is normalized, and a host of attending ethical issues either generated or exacerbated by emergency remote teaching this past year. "Normal" pre-pandemic may have been desirable for many, but it also presented challenges for many others who either encountered significant barriers to access and inclusivity or simply had no real access options and therefore were excluded from normal-as-traditional learning environments. Traditionally marginalized students noted how they felt they could thrive in online learning, since distance from the classroom also meant distance from racism and microaggressions. Students with disabilities also noted that online learning during the pandemic made education more accessible. Students' reactions to the push for a return to normal are complex and nuanced, suggesting that they wish colleges and universities would retain the benefits and lessons

of online learning by blending new solutions in the online space with what's effective about classroom learning, not merely rejecting or adopting either *in toto*.¹⁶

Another trend that has emerged during the pandemic involves proctoring and the use of surveillance software to replicate the traditional or "normal" practice of giving in-person tests, resulting in an uptick in the purchase and use of such software in higher education. In a review of trends in the United States and Canada, Royce Kimmons and George Veletsianos found that nearly 63 percent of colleges and universities use surveillance software, with indications that use of this software is becoming more ubiquitous.¹⁷ At present, it is difficult to tell just how much this will truly be normalized in higher education, as reports also indicate that students are pushing back on this technology and, in some instances, suing either institutions (e.g., Northwestern University, DePaul University, and the University of Amsterdam) or proctoring companies (e.g., Proctorio and ProctorU).¹⁸

By contrast, for those institutions that have already invested in online and blended learning, "normal" is not an idealized past but is a continuation, a process of leaning into multimodal learning ecosystems to further expand access and opportunities. Many college and university leaders see this time as an opportunity to create the "next normal" by leveraging lessons learned to reinvent the campus living and learning experience into something more flexible, accessible, engaging, and effective. Czerniewicz wrote that one of the ways the classroom has been "made strange" is through the increased visibility of inequalities and inequities during the pandemic. This presents us with one of the major areas where

we can learn some significant lessons and change our practices going forward. As she stated: "Now that inequality and inequity have been seen, they cannot be unseen."¹⁹

The discourse on designing more flexible, accessible, and inclusive learning and learning systems has expanded dramatically.²⁰ The topic had very sparse treatment in instructional design literature only a few years ago, but now many instructional design teams at colleges and universities are sharing models for how to incorporate justice, equity, diversity, and inclusion into the planning and development process. For example, the Office for the Advancement of Teaching and Learning at the University of Rhode Island has created a **rich repository of resources** [↗](#) for teaching with diversity, equity, inclusion, and justice. The Center for Equity and Excellence in Teaching and Learning at San Francisco State University launched a **Justice, Equity, Diversity and Inclusion (JEDI) Writing Pedagogies for Inclusive Excellence (PIE) Institute** [↗](#) exploring how to integrate diversity considerations into pedagogy including assignment design and feedback. *The Journal of Applied Instructional Design* recently featured a **special issue on UDL and accessibility** [↗](#) and will be publishing a special issue on social justice and instructional design soon.

Many institutions are also meaningfully weaving online learning into their institutional fabric, treating in-person, online, and blended as more of a learning ecosystem that is better able to adapt to diverse needs and situations. As they do so, they will rely heavily on the expertise of instructional design teams, faculty professional development teams, and others who provide instructional technology support. In his

book *The Fifth Discipline*, Peter M. Senge identified the importance of considering the various components of a given system, including infrastructures, processes, and the roles of those interacting within the system.²¹ If well-designed learning experiences are expected in online courses, investments in instructional design professionals, instructional technology, and quality assurance measures will need to be explored.

The pandemic and the shift to emergency remote teaching stretched the capacities of instructional design professionals. Many institutions found that they were sorely understaffed and that as a result, some of the emergency remote teaching courses did not meet the quality standards that a well-defined course would meet. Even those institutions with large instructional design units found the remote learning experiences to be lacking. As the pandemic stretched into spring of 2021, support units were able to invest more time and effort into training faculty and helping with more complex course design efforts. As faculty became more comfortable teaching in the online environment, learning experiences improved. One co-author's university has recognized this opportunity and is exploring how flexible online courses can help facilitate a strategic priority to enable experiential learning in off-campus locations while ensuring the academic success of students. Even though the pivot to emergency remote teaching was rocky in many instances, instructional design professionals have proven they can provide the necessary guidance and support to build and maintain the infrastructure needed for such initiatives.

Don Ely, a researcher of change and instructional systems, stated: "Neither stability nor change have any intrinsic value. The worth of stability is in the goodness it preserves, while the worth of change is in the goodness it brings about."²² At the core, the discourse on "normal" is about what institutions are seeking to preserve and what they are seeking to bring about. Some seem focused on the act of preservation itself as an inherent good, but in so doing, they are excluding opportunities for change and improvement that could bring about more good. Meanwhile other institutions are embracing the process of change, most notably around the good it can bring about for justice, equity, diversity, and inclusion.

Conclusion

As we look forward, we must reflect on what happened in higher education during the COVID-19 pandemic: what worked, what didn't work, what decisions were made, and how those decisions impacted students, staff, and faculty. One place to start is by using the following markers of institutional excellence for online and blended learning to reflect on whether an institution is ready for an ever-changing future:

- A dedicated governance structure that involves all stakeholders, including students
- Revised *learning community* and *community engagement* definitions that treat online and remote learners as equals and include "our students" instead of "those students"
- A clear institutional vision and mission for online education

- Positioning of online and blended learning strategically within the overall organizational structure and plan of the institution
- Policies that are created, adjusted, or removed to better support online instruction (e.g., tenure and promotion policies)
- Sufficient resourcing to support online programs, not just technology and staff but also strategic planning, student services online options, and marketing
- A community of practice where faculty, staff, and students alike can share ideas, can test new strategies, tools, or features together, and can collaborate (e.g., sandboxes for rapid testing and development, internal conferences for a marketplace of ideas)
- A critical consideration of how decisions regarding online learning might positively and negatively impact traditionally underrepresented and marginalized groups of students (e.g., will low-income students choose online learning because they can't afford room and board on campus, and will that lead to a less socioeconomically diverse campus community?)
- A focus on evaluating the positive and negative outcomes of educational technologies before making decisions about which technologies to fund for supporting online/blended learning²³
- A leadership team that is willing to use methodologically strong research to guide decision-making for online/blended learning

The philosopher and educator John Dewey is often credited as observing that learning comes not from experience but from reflecting on experience. Eighteen months ago, we were all thrust into a shared experience of working and learning in remote settings amid a global pandemic. It turns out that reflecting on this experience is not so much a rear-view mirror retrospective, summarizing a completed journey, but instead is a look into a mirror in front of us, revealing a story that is very much *in medias res*. Whereas reflections on the past months of emergency remote teaching identify some significant areas for improvement, the current moment-in-time snapshot captures some creative rethinking and exciting possibilities for the online learning of the future. We are indeed in the middle of the plot of the higher education story.

Notes

1. Charles Hodges, Stephanie Moore, Barb Lockee, Torrey Trust, and Aaron Bond, **"The Difference Between Emergency Remote Teaching and Online Learning,"** *EDUCAUSE Review*, March 27, 2020. ↩
2. Ryan Chatelain, **"U.S. COVID Deaths in 2021 Surpass 2020 Total,"** [↗] *Spectrum News*, October 6, 2021. ↩
3. Donella H. Meadows, *Thinking in Systems: A Primer* (White River Junction, VT: Chelsea Green Publishing, 2008). ↩
4. Phil Hill, **"The Colleges That Prospered during the Pandemic,"** [↗] *Chronicle of Higher Education*, July 28, 2021. ↩
5. Meghan Ensell, **"ASU Makes Teacher-Preparation Programs More Accessible, Affordable,"** [↗] Mary Lou

Fulton Teachers College, *News & People*, July 21, 2021.

↩

6. Colleen Shalby, **"Many CSU Students See Big Upsides to Online Learning: Now, There Is a Push to Expand It,"** [↗](#) *Los Angeles Times*, June 4, 2021. ↩
7. Elizabeth Redden, **"Cornell Says No Remote Teaching as COVID Fears Persist,"** [↗](#) *Inside Higher Ed*, August 13, 2021; Elizabeth Redden, **"Cornell Softens Stance on Remote Teaching,"** [↗](#) *Inside Higher Ed*, August 16, 2021. ↩
8. Meadows, *Thinking in Systems*, p. 112. ↩
9. Meadows, *Thinking in Systems*. ↩
10. See, for example, Doug Lederman, **"Student Performance in Remote Learning, Explored (Imperfectly),"** [↗](#) *Inside Higher Ed*, August 6, 2021, which reports on one such study. ↩
11. See Kay Shattuck, **"Editorial: Lessons Not Learned,"** [↗](#) *American Journal of Distance Education* 35, no. 3 (2021). ↩
12. Bryan Edward Stone, **Twitter post,** [↗](#) June 27, 2021, 1:18 p.m. ↩
13. Laura Czerniewicz, **"Letting the Light into Higher Education,"** [↗](#) *University World News*, August 15, 2021. ↩
14. John McCarthy, **"Requests for Medical Accommodations—June 21st Deadline,"** [↗](#) May 25, 2021. ↩
15. Torrey Trust, **"Returning to 'Normal' Is Really a Return to Ignorance,"** [↗](#) *Times Higher Education*, June 20,

2021. ↩

16. Elizabeth Miller, **"For Some Black Students, Remote Learning Has Offered A Chance To Thrive,"** [↗](#) *NPR*, March 1, 2021; Gretel Kahn, **"COVID-19 Has Made Education More Accessible for University Students with Mobility Disabilities,"** [↗](#) *CBC News*, March 3, 2021; Abigail Johnson Hess, **"As College Students Head Back to Class, Some Say Benefits of Online Learning Should Not Be Forgotten,"** [↗](#) *CNBC Make It*, July 29, 2021. ↩
17. Royce Kimmons and George Veletsianos, **"Proctoring Software in Higher Ed: Prevalence and Patterns,"** *EDUCAUSE Review*, February 23, 2021. ↩
18. Jeffrey R. Young, **"Pushback Is Growing against Automated Proctoring Services, but So Is Their Use,"** [↗](#) *EdSurge*, November 13, 2020; **"Northwestern Sued over Biometrics Privacy in Test Proctoring Software,"** [↗](#) *EdScoop*, February 22, 2021; Ella Lee, **"DePaul Sued over Facial Recognition Tech Used for Online Test Proctoring,"** [↗](#) *The DePaulia*, March 8, 2021; Hoger Onderwijs Persbureau, **"Students Sue University over Webcam-Monitored Exams,"** [↗](#) *Erasmus Magazine*, April 6, 2020; Monica Chin, **"College Student Sues Proctorio after Source Code Copyright Claim,"** [↗](#) *The Verge*, May 5, 2021; Kirsten Errick, **"Students Sue Online Exam Proctoring Service ProctorU for Biometrics Violations Following Data Breach,"** [↗](#) *Law Street*, March 15, 2021. ↩
19. Czerniewicz, **"Letting the Light into Higher Education."** [↗](#) ↩

20. See Amy Collier, "**Inclusive Design and Design Justice: Strategies to Shape Our Classes and Communities,**" *EDUCAUSE Review*, October 26, 2020. [↩](#)
 21. Peter M. Senge, *The Fifth Discipline: The Art and Practice of the Learning Organization* (New York: Doubleday/Currency, 1990). [↩](#)
 22. Don Ely, "Creating the Conditions for Change," in Sylvia Faibisoff and George S Bonn, eds., *Changing Times: Changing Libraries* (Urbana-Champaign: University of Illinois Graduate School of Library Science, 1978), p. 151. [↩](#)
 23. See Benjamin Gleason and Marie K. Heath, "**Injustice Embedded in Google Classroom and Google Meet: A Techno-Ethical Audit of Remote Educational Technologies,**" [↗](#) *Italian Journal of Educational Technology* 29, no. 2 (2021); Courtney Plotts and Jenae Cohn, "**Encouraging Equitable Decision-Making in Academic Technology,**" *EDUCAUSE Review*, September 15, 2021. [↩](#)
-

Stephanie Moore is Assistant Professor in Organization, Information, and Learning Sciences at the University of New Mexico.

Torrey Trust is an Associate Professor of Learning Technology at the University of Massachusetts Amherst.

Barbara B. Lockee is Professor of Instructional Design and Technology and Provost Faculty Fellow at Virginia Tech.

M. Aaron Bond is Senior Director for Professional Development and Faculty Digital Fluency at Virginia Tech.

Charles B. Hodges is Professor of Instructional Technology at Georgia Southern University.

© 2021 Stephanie Moore, Torrey Trust, Barbara Lockee, M. Aaron Bond, and Charles B. Hodges. The text of this work is licensed under a [Creative Commons BY-NC-ND 4.0 International License](https://creativecommons.org/licenses/by-nc-nd/4.0/). 

► [COVID-19, Hybrid Learning, Learning Environments, Online Course Development Planning, Online Learning, Strategic Planning](#)