

Education's Response to the COVID-19 Pandemic Reveals Online Education's Three Enduring Challenges

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Abstract

Closed campuses, working remotely, and physical distancing have changed the way we work, teach, learn, shop, attend conferences, and interact with family and friends. But the COVID-19 pandemic has not changed what we know about creating high-end online education. Two decades of research has shown that online education often fails to fulfill its promise, and the emergency shift to remote instruction has, for many, justified their distrust and dislike of online learning. Low interactivity remains a widely recognized short-coming of current online offerings. Low interactivity results, in part, from many faculty not feeling comfortable being themselves online. The long-advocated for era of authentic assessments is needed now more than ever. Finally, greater support is needed for both underrepresented students and for faculty to move beyond basic online instruction to create a strong continuum of care between the teaching and learning environment and the student support infrastructure. For those who have been long-term champions of online education, it has never been more important to confront the three biggest challenges that continue to haunt online education – interactivity, authenticity, and support. Only by confronting these challenges squarely can instructors, educational developers, and their institutions take huge steps towards better online instruction in the midst of a pandemic and make widespread, high-quality online education permanently part of the “new normal.”

Keywords: online education; interactivity; authentic assessment; professional development; student supports; COVID-19 pandemic

The COVID-19 pandemic changed almost everything about our daily routines. With many Canadian campuses locked, working remotely and physical distancing have changed the way we work, teach, learn, shop, attend conferences, and interact with our families and friends. The pandemic disrupted higher education and transformed it; around the world, in a couple of months, post-secondary institutions and their faculty proved agile in their move towards online instruction. In many cases, the Herculean effort included building new comfort with teaching tools and deepening knowledge of online pedagogy. Even so, the pandemic changed nothing

about what we know about quality online education. For advocates who have worked in online education for any length of time, the emergency shift to remote instruction reinforced what we knew all along; developing high-quality online instruction takes time, effort, and planning, which the pandemic did not allow.

Over a decade ago, research with over 50,000 faculty from 69 different institutions (Seaman, 2009) firmly established the belief, born from experience, that online education takes more time and effort. Despite research studies too numerous to mention that online education can be done exceptionally well, it has also been known for some time that it is easy to do online education poorly, explaining why Duus (2009) made a critical and important distinction between low-end e-learning and high-end e-learning. Low-end e-learning is characterized by content transmission and knowledge transfer. Duus (2009) argued that low-end e-learning focusing on the simple transfer of knowledge using e-learning products was erroneously confused for all forms of e-learning. This confusion still exists and is well captured in the following anecdote:

By day three of our vast national experiment, one dean told me, an angry parent had reached him by phone to let him know that he wasn't paying tuition so that his kid could watch videos of professors giving lectures. The parent wanted "real" online learning. So do we all. (Stokes & Johnson, 2020, para. 8)

Real online learning or high-end e-learning has, since 1997, been rated higher than traditional stand-and-deliver formats, delivered face-to-face or online (Duus, 2009). This form of learning is also capital intensive.

Despite the tremendous efforts put forward by faculty to keep teaching throughout the pandemic and implement best practices to ensure students do not suffer an inferior education, the hurried move to online education during the pandemic period is low-end e-learning, "the McDonaldization of education" (Cohan, 2020). Many faculty have found the emergency pivot online to be "painful, worrisome and anxiety-inducing" (Kimmons, Veletsianos, & vanLeeuwen, 2020, para. 2). Adding Zoom fatigue and the secondary trauma of meeting the emotional needs of students has made faculty burnout a chronic condition (Flaherty, 2020b). Canadian students have also expressed widespread dissatisfaction with online learning (Ludlow, 2020; OCUFA, 2020; Sawatzky, 2020). This lack of quality may "seal the perception of online learning as a weak option" (Hodges et al., 2020).

To counter the recent negative experiences of online education, long-term champions of online education must confront the three biggest challenges that still face online instruction – interactivity, authenticity, and support. By confronting these challenges now, while teaching online is part of the new normal, faculty and their institutions can help online education mature to achieve its potential and promise.

Interactivity

The Ontario Council of University Faculty Associations (OCUFA, 2020) argues emphatically that the pandemic-related shift to online instruction has had a negative impact on the quality of education, and the main area of dissatisfaction is the lack of interaction and engagement. Skeptics of online learning are right to be critical of low-end e-learning where low interactivity is a “widely recognized short-coming of current online offerings” (Protosaltis & Baum, 2019, p. 30). In a comprehensive review of online education in the United States to assess the effectiveness of federal policy, Protosaltis and Baum (2019) argue that online education has failed to reduce costs or improve learning outcomes for students, and the gaps in student success grow larger across socioeconomic groups. The OCUFA study (2020) provides solid evidence that the situation is similar in Canada, and as online learning grows and matures, it is critical to design more interactive educational experiences. Many of the problems with online learning would be solved (or at least reduced) if courses and programs consistently incorporated interpersonal interactions (Protosaltis & Baum, 2019).

High-end e-learning, on the other hand, requires the creation of new knowledge via the creative use of internet-based communications technology. This form of e-learning is derived from problem-oriented, dialogue-centred education that is rooted in virtual coaching that transcends the limitation of time, place, and pace (Duus, 2009). Interactivity can incorporate online discussions, self-reflective journals, the collaborative development of open educational resources, and peer assessment, just to name a few interactive teaching techniques with solid research behind their efficacy. The tyranny of content (Wieman, 2017) and the relative ineffectiveness of lectures (Bligh, 2000) must finally give way to teaching methods that take advantage of interactive spaces and tools to build strong community and connection. Both Moore’s Transactional Distance Theory (Simonson, Smaldino, Albright, & Zvacek, 2012) and the Community of Inquiry model (Garrison, Anderson, & Archer, 2001) have long stressed the need for highly interactive learning designs that transcend the limitations of time and place to build social and teaching presence. The Community of Inquiry framework provides research-based guidance for how to design these high-end experiences in online educational spaces. Student-faculty interaction, *teaching presence*, is a critical component of quality, but “high-quality courses with meaningful interaction among students and between students and faculty are not money savers” (Protosaltis & Baum, 2019, p. 1). The fiscal reality of capital intensive, high-end e-learning is difficult news to hear at the onset of a new era of austerity that is forcing furloughs, layoffs, and the loss of thousands of part-time faculty, many of whom were already in a precarious position pre-pandemic (June, 2020).

Authenticity

Being Authentic Online

Authenticity has a double meaning. The first meaning of *authenticity* comes from Cranton and Carruseta (2004), who observe that the how-to literature, the plethora of tips and tricks articles on how to be a better online instructor, generally serves faculty well. What these articles fail to consider, however, are individual teachers' personalities, preferences, and values, or the ways in which we become authentic teachers. Many faculty are not comfortable teaching online; they are still grappling with the basics of online teaching, but this is not simply because they are intimidated or uncomfortable using new applications and platforms. Cranton and Carruseta's (2004) five-faceted model of authenticity includes instructor choices about how to be themselves, where to draw the line in caring for students, how much of their lives they should share, and where to draw the line between teaching and counseling. Teaching online during the pandemic has forced a reconsideration of all these components of authenticity.

It is probable that the lack of choice and the time constraints pushed instructors towards low-end e-learning, but the discomfort also includes a dramatically reduced amount of feedback from students, students' reticence in online classes (McMurtrie, 2020), and faculty adjusting their carefully constructed approaches to building student relationships and setting boundaries in the online environment. Mundane scheduling routines like office hours, for example, require reconsideration and planning because nothing happens naturally online. Stan Yoshinobu (2020) succinctly put it this way: "I don't like virtual college." Still, Yoshinobu (2020) recognizes online as the best option available right now:

We can be creative and human for our students during this time. We can teach them about morality, solidarity, and steadfastness. Going virtual — and staying virtual until it's truly safe to reopen campuses — is how we can respond to a difficult set of circumstances in a way that best reflects our values and missions. (concluding paragraph)

Yoshinobu here expresses an authentic moral choice and his value of solidarity with colleagues, students, and the human race in general. He also expresses his educational values of creativity and aligning his teaching method with a fair and honest assessment of the COVID-19 situation, undoubtedly rooted, in part, in his background and role as a mathematics professor.

This example highlights Cranton and Carusetta's (2004) observation that it is not enough for professional development opportunities to cover how to create robust online discussions or how to effectively employ peer assessments. Professional development needs to focus on the teaching self, and how instructors can bring this self to their practice and align online educational approaches with their story and values. This focus rests upon faculty's foundational interest in student needs, learning how to attend to caring for students in a new context, and helping faculty translate how to move their carefully defined parameters and negotiated boundaries into online settings. Beyond tools, faculty wonder how they can they still be reasonably present for students and get to know them as individuals without exhausting themselves.

Cranton and Carusetta (2004) explored the experiences of community college faculty who work within a system that includes a mandated curriculum and policies and procedures that predetermine how faculty will approach teaching, including assessment strategies, contact hours, attendance, preparation time, etc. These constraints and limitations are analogous, for the time being, to the constraints and limitations of the pandemic. Cranton and Carusetta (2004) discovered that, even with all the limitations facing these community college faculty, they still found creative, interesting and innovative strategies for maintaining their stance as adult educators in a context that had many constraints against doing so. Despite constraints, there are also opportunities for interesting and innovative teaching strategies. Nowhere is this truer than in form of authentic assessments.

Authentic Assessment

“For some professors, at least, rethinking their finals under duress has raised questions about whether their usual approach was the best one in the first place” (Supiano, 2020). Final exams are among the many rhythms of academic life disrupted by the pandemic, and there is now an emerging split between those who choose to offer online proctored exams and those who will not. Online proctored exams are one of the fastest-growing segments within the educational technology market (Flaherty, 2020a). Opposed to this shift are those who, like Audrey Watters (Watters & Prinsloo, 2020), argue surveillance is not good pedagogy. Some institutions are working hard to avoid the “cop-shit” (Watters & Prinsloo, 2020) and shift away from online proctored final exams whenever possible.

Again, not everything has changed. There are some contexts, trades, nursing, and information technology programs come readily to mind, where high-stakes exams are a concrete reality and will likely remain so. If a student does not pass the Red Seal or NCLEX credentialing exam, they do not earn the ability to participate in professional practice. In these cases, exams are an immovable object, and these programs must teach to the test to adequately and dutifully prepare their students. For many others, however, the pandemic has provided a welcome opportunity to seek creative suggestions for how to restructure assignments and assess student learning in more meaningful ways.

Authentic, in authentic assessment, means creating a task that simulates the performance context of the discipline or profession as closely as possible. Authentic is the degree to which assessments tasks simulate real-world problems (Goff et al., 2015). The key operative words are *degree* and *real-world*. Authenticity must be seen as a Platonic ideal that is often practically impossible to reach in many practice settings. Is there any substitute to demonstrate that a paramedic student knows how to administer morphine to a patient who has fallen off a ladder, broken both femurs, and is screaming bloody murder, other than having a preceptor watch them do it in real-time? No. Not all situations can be replicated online. But recognizing the limits of authentic assessment must be a starting point for creativity, not a discussion-ender. The limitations of real-world physical contexts have significant implications for all learners, but especially for some distance learners, as there may be limitations in creating a truly authentic

context given the displaced physical nature of the virtual environment. Still, the same could be said for face-to-face learners when we question “whether assessing students in a clean and safe environment really assesses their ability to wisely use their competencies in real life situations” (Gulikers, Bastiaens, & Kirschner, 2004, p. 74).

This, too, is not a new discussion. In 1995, Barr and Tagg argued that a new paradigm of learner-centered assessment had begun, but findings show little change in assessment practice (Webber, 2012). Now, more than any other time may finally be the epoch of authentic assessments. Even before the pandemic, the current work environment was increasingly technologically mediated, geographically distant, international, and team based. All these trends have intensified since the pandemic began. Authentic tasks are ill-defined and complex; perfect for a rapidly changing COVID-19 world. Working on ill-defined tasks in ill-defined circumstances provides the opportunity to collaborate, confronting the dual challenges of interactivity and authenticity. Designing authentic assessments is challenging but can be fun and creative work, and well-designed assessments provide opportunities for reflection while creating polished products valuable in their own right (Gulikers, et al., 2004). Where faculty are dedicated to find ways to make emergency remote teaching engaging for their students and themselves, they will make online education work by moving towards more authentic assessments online.

Support

The third and final challenge confronting the maturation of quality online education is providing meaningful supports for both major parties involved in the teaching and learning transaction.

Students

A *Globe and Mail* article from earlier this year took a critical look at online learning (Mahoney, 2020) and argued that students need wraparound supports. Xu and Jaggars (2013), in one of the largest studies of its kind, looked at adaptation to online learning for undergraduate students in Washington State. Most college students receive their primary and secondary education in face-to-face environments and find adapting to online learning difficult. In their multi-disciplinary study of nearly 40,000 courses taken by over 500,000 students at community and technical colleges, Xu and Jaggars (2013) discovered a learning gap between online courses and face-to-face courses for every student subgroup, suggesting that all undergraduate students face difficulty in adapting to online coursework, and that substantial new investments are needed for learner support.

The negative effects of online learning in this large-scale Washington State study were more pronounced for males, students of colour, mature students, and students with lower levels of academic preparation (Xu & Jaggars, 2013, p. 23). Students of colour, mature students, and those with lower levels of academic preparation is a composite profile of the “new majority” of students (Malm & Weber, 2018). This new majority appears to be more adversely affected by

learning online, but all students will benefit from instructors who know how to recognize students at-risk and put forth effort to connect students to supports using standard tools such as early warning systems and retention centers that employ basic, but effective, learning analytics.

As the 2020-2021 academic calendar proceeds, students are likely to be more vulnerable than ever, struggling financially and academically. Those students with chronic health conditions, compromised immune systems, and/or disabilities will face magnified pressures that will threaten their well-being and their ability to be successful in their college careers (Brown & Mangan, 2020). The pandemic intensifies and magnifies a simple truth; higher education simply does not work well for everyone, and online education does not work well for everyone either. Many students encounter challenges along the way that lead to the premature end of their formal education, and those students who take on loans but leave college without a credential face a more difficult struggle (McNair et al., 2016).

Face-to-face or online, the enduring challenges of college accessibility, affordability, and preparation are intensified and further complicated by demographic, economic, and technological changes, which are further intensified by the impacts of the COVID-19 pandemic. These forces will have negative effects for many students, and it is critical that both human and technological solutions connect students to the wraparound supports so that they can succeed. Most institutions already have a robust student support infrastructure in place to be responsive to students' needs and realities, but the continuum of care from the learning environment to the support infrastructure often breaks down. This is an especially important consideration for students with disabilities because online education often proves less accessible for students who are hard of hearing, have low vision, or a learning disorder (Anderson, 2020).

Faculty

Faculty development works, but it is one step removed from the learning environment (Hicks, 2014), and measuring the impact of professional development programs is incredibly difficult research. It involves establishing a causal chain of evidence from participation in a faculty development opportunity, to the instructional design or use of a teaching strategy, to the site of learning, and then to the demonstration of specific student behaviors and learning outcomes (Wright, Horii, Felten, Sorcinelli, & Kaplan, 2018). Despite the complexity involved in researching the effectiveness of professional development, “broadly speaking, faculty development has measurable impacts on teaching” and “instructional development interventions over time have more positive behavioral outcomes than one-time events” (Condon, Haswell, Iverson, Rutz, & Willett, 2016, p. 114).

Teaching enhancements often occur incrementally over time, and repeated exposure to educational development experiences is especially needed for online educators. Zawacki-Richter and Anderson (2014) note that online faculty “bring many of the fears, inhibitions, and bewilderment of students when first exposed to the very different context of teaching in mediated and networked contexts” (p. 22). As recent research suggests, extensive faculty development

may be the key to ensuring cost-savings and educational quality by helping to train and retain the faculty base (Bailey, Vaduganathan, Henry, Laverdiere & Pugliese, 2018). In their review of six institutions doing particularly well with their online offerings (Bailey et al., 2018), planned investment in professional development was a key ingredient in their success.

And yet, in the United States, only about one-third (37%) of institutions required pedagogical training for online instruction, and only about 45 percent required LMS training (Magda, 2019). These numbers “appear low given how abundant online learning courses have become at AASCU [American Association State College and Universities] institutions” (Magda, 2019, p. 7). Magda (2019) also found that faculty-student interactions, that crucial component of quality, are largely unregulated and can be sporadic, potentially undermining online learning. Faculty autonomy and contracts occasionally prevent “the mandating of training and development opportunities for faculty so that they can be aware of the evolving best practices for instructing online” (Magda, 2019, p. 7). The situation in Canada is likely similar, and Magda’s (2019) argument applies here, as well; “the case can be made that this training is about achieving better learning outcomes for students and not to inhibit faculty autonomy” (p. 31).

Professional development for online faculty is needed, it is recommended, and it has a measurable impact. Professional development is not the silver bullet solution for all that ails online education, but it can lead to more interactive learning experiences, better assessment methods, and assist faculty in learning how to recognize when students need help. More effective faculty development is needed now, especially, to assist faculty in moving beyond basic online pedagogy in use during the period of emergency remote teaching brought on by COVID-19. Online learning will truly be at a tipping point if it can move instructors from competence to proficiency with advanced uses of online learning tools, instructional designs, and teaching strategies.

Conclusion

The COVID-19 pandemic created an unpredicted and unprecedented spike in online learning activity, now being called emergency remote instruction. These are not normal circumstances, and they are not the ideal circumstances in which to grow online education. Right now, online education is the safest and most responsible approach, but it is important not to confuse low-end emergency online instruction with high-end online education. For the past two decades, these three big challenges of interactivity, authenticity, and support have prevented online education from reaching its full potential and achieving its promise. The current backlash is not against online education, but against low-end online education. Only by confronting these challenges squarely can instructors, educational developers, and their institutions take huge steps towards better online instruction in the midst of a pandemic and make it permanently part of the “new normal.”

References

- Anderson, G. (2020). Accessibility suffers during pandemic. *Inside Higher Ed*. Retrieved from <https://www.insidehighered.com/news/2020/04/06/remote-learning-shift-leaves-students-disabilities-behind>
- Bailey, A., Vaduganathan, N., Henry, T., Laverdiere, R., & Pugliese, L. (2018). *Making digital learning work: Success strategies from six leading universities and community colleges*. Boston, MA: The Boston Consulting Group. Retrieved from <https://edplus.asu.edu/sites/default/files/BCG-Making-Digital-Learning-Work-Apr-2018%20.pdf>
- Barr, R. B., & Tagg, J. (1995). From teaching to learning: A new paradigm for undergraduate education. *Change*, 27(6), 12–26.
- Bligh, D. A. (2000). *What's the use of lectures*. San Francisco: Jossey-Bass Publishers.
- Brown, S., & Mangan, K. (2020, May 28). What college students need now. *The Chronicle of Higher Education*. Retrieved from <https://www.chronicle.com/article/What-College-Students-Need-Now/248882>
- Cohan, D. J. (2020, March 20). What do we need to teach now? *Inside Higher Ed*. Retrieved from <https://www.insidehighered.com/advice/2020/03/20/beyond-focusing-educational-delivery-models-faculty-should-prioritize-essential>
- Condon, W., Iverson, E. R., Manduca, C. A., Rutz, C., & Willett, G. (2016). *Faculty development and student learning: Assessing the connections*. Bloomington, IN: Indiana University Press.
- Cranton, P., & Carusetta, E. (2004). Perspectives on authenticity in teaching. *Adult Educational Quarterly*, 55(1), 5-22.
- Duus, H. J. (2009). A socioeconomic approach to the development of e-learning. *E-Learning & Education (eLeed) Journal*, 5. Retrieved from <http://eLeed.campussource.de/archive/5/1985>
- Flaherty, C. (2020a, May 11). Big proctor. *Inside Higher Ed*. Retrieved from <https://www.insidehighered.com/news/2020/05/11/online-proctoring-surg-ing-during-covid-19>
- Flaherty, C. (2020b, November 19). Faculty pandemic stress is now chronic. *Inside Higher Ed*. Retrieved from <https://www.insidehighered.com/news/2020/11/19/faculty-pandemic-stress-now-chronic>
- Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical thinking, cognitive presence, and computer conferencing in distance education. *American Journal of Distance Education*, 15(1), 7-23.

- Goff, L., Potter, M. K., Pierre, E., Carey, T., Gullage, A., Kustra, E., & Van Gastel, G. (2015). Learning outcomes assessment: A practitioner's handbook. Toronto, ON: Higher Education Quality Council of Ontario. Retrieved from http://www.heqco.ca/SiteCollectionDocuments/heqco.LOAhandbook_Eng_2015.pdf
- Gulikers, J. M., Bastiaens, T. J., & Kirschner, P. A. (2004). A five-dimensional framework for authentic assessment. *Educational Technology Research and Development*, 52(3), 67–86.
- Hicks, M. (2014). Professional development and faculty support. In O. Zawacki-Richter and T. Anderson (Eds), *Online distance education: Towards a research agenda* (267-286). Athabasca, AB: Athabasca University Press.
- Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020, March 27). The difference between emergency remote teaching and online learning. *Educause Review*. Retrieved from <https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning>
- June, A. W. (2020, June 10). 5 facts about the higher-ed work force right now. *The Chronicle of Higher Education*. Retrieved from <https://www.chronicle.com/article/5-Facts-About-the-Higher-Ed/248968>
- Kimmons, R., Veletsianos, G., & VanLeeuwen, C. (2020, May 14). What (some) faculty are saying about the shift to remote teaching and learning. *Educause Review*. Retrieved from <https://er.educause.edu/blogs/2020/5/what-some-faculty-are-saying-about-the-shift-to-remote-teaching-and-learning>
- Ludlow, J. (2020, May 13). Some CBU students concerned over decision to move to online-only learning. *CBCNews*. Retrieved from <https://www.cbc.ca/news/canada/nova-scotia/cape-breton-university-online-only-covid-19-student-reac>
- Magda, A. J. (2019). *Online learning at public universities: Recruiting, orienting, and supporting online faculty*. Louisville, KY: The Learning House, Inc.
- Mahoney, J. (2020, February 12). E-learning in Ontario: Way of the future or an ineffective teaching model? *Globe and Mail*. Retrieved from <https://www.theglobeandmail.com/canada/article-e-learning-way-of-the-future-or-an-ineffective-teaching-model/>
- Malm, E., & Weber, M (Eds). (2018). *Serving the new majority student: Working from within to transform the institution*. Lanham, MD: Rowman & Littlefield.
- McMurtrie, B. (2020, November 5). The pandemic is dragging on. Professors are burning out. *The Chronicle of Higher Education*.

- McNair, T. B., Albertine, S., Cooper, M. A., McDonald, N. L., & Major, T. (2016). *Becoming a student-ready college: A new culture of leadership for student success*. San Francisco, CA: Jossey-Bass.
- OCUFA. (2020, November). OCUFA 2020 study: COVID-19 and the impact on university life and education. Retrieved from <https://ocufa.on.ca/assets/OCUFA-2020-Faculty-Student-Survey-opt.pdf>
- Protopsaltis, S., & Baum, S. (2019). *Does online education live up to its promise: A look at the evidence and implications for federal policy*. Fairfax, VA: George Mason University. Retrieved from <http://mason.gmu.edu/~sprotops/OnlineEd.pdf>
- Sawatzky, K. (2020, May 3). University of Regina faculty and students concerned for online fall semester. *Global News*. Retrieved from <https://globalnews.ca/news/6941339/university-of-regina-faculty-students-coronavirus/>
- Seaman, J. (2009). *Online learning as a strategic asset: Vol. 2: The paradox of faculty voices: Views and experiences with online learning*, APLU-Sloan National Commission on Online Learning. Retrieved from <https://files.eric.ed.gov/fulltext/ED517311.pdf>
- Simonson, M., Smaldino, S., Albright, A., & Zvacek, S. (2012). *Teaching and learning at a distance: Foundations of distance education* (5th ed). Boston, MA: Pearson.
- Stokes, P., & Johnson, M. (2020, April 1). Lead from the future. Retrieved from <https://www.insidehighered.com/views/2020/04/01/how-higher-education-can-overcome-crisis-induced-backlash-against-online-education>
- Supiano, B. (2020, April 27). What do final exams mean during a pandemic? *The Chronicle of Higher Education*. Retrieved from <https://www.chronicle.com/article/What-Do-Final-Exams-Mean/248644>
- Watters, A., & Prinsloo, P. (2020, July 20). *Building anti-surveillance ed-tech! In conversation with Audrey Watters*. Contact North. *TeachOnline.ca*. Retrieved from https://contactnorth.zoom.us/rec/play/6Md8Irvq_To3EtaS4QSDBv98W43pJqOs1SgW-fZZmk3nAXIQMvr0NLMSZep-_8h7rYlfJf12KP6GU2zV
- Webber, K. L. (2012). The use of learner-centered assessment in US colleges and universities. *Research in Higher Education*, 53(2), 201–228. doi:10.1007/s11162-011-9245-0
- Wieman, C. E. (2017). *Improving how universities teach science: Lessons from the Science Education Initiative*. Cambridge, MA: Harvard University Press.
- Wright, M., Horii, C. V., Felten, P., Sorcinelli, M. D., & Kaplan, M. (2018). Faculty development improves teaching and learning. *PODSpeaks Papers*, 2. Retrieved from https://podnetwork.org/content/uploads/POD-Speaks-Issue-2_Jan2018-1.pdf

- Xu, D., Jaggars, S. S., & Columbia University, C. C. (2013). Adaptability to online learning: Differences across types of students and academic subject areas. CCRC Working Paper No. 54.
- Yoshinobu, S. (2020, May 14). The case against reopening. *The Chronicle of Higher Education*. Retrieved from <https://www.chronicle.com/article/The-Case-Against-Reopening/248785>
- Zawacki-Richter, O. & Anderson, T. (2014). Research areas in distance education. In O. Zawacki-Richter & T. Anderson (Eds.) *Online distance Education: Towards a research agenda* (pp. 1-35). Edmonton, AB: Athabasca University Press.

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