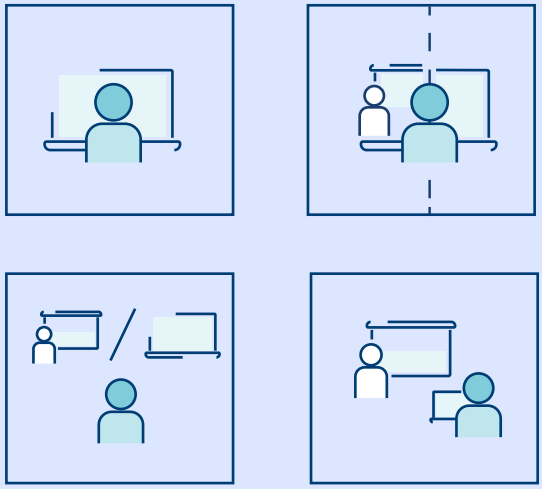
Improving Critical Courses Using Digital Learning & Evidence-based Pedagogy

A Guide for Academic Administrators

Karen Vignare
Association of Public & Land-grant Universities
Personalized Learning Consortium

George Lorenzo
EdPath.com



everylearner everywhere

Association of Public & Land-grant Universities

Authors

Karen Vignare
Executive Director,
Association of Public and Land-grant Universities | Personalized Learning Consortium

George Lorenzo
Researcher, Writer, Editor,
EdPath.com

Editors

Megan Tesene
Director,
Association of Public and Land-grant Universities | Personalized Learning Consortium

Nia Reed
Consultant

Reviewers

Laura Niesen de Abruna
Provost,
York College

Rob Kadel
Senior Research Fellow,
Strada Education Network

Joeann Humbert
Organizational Development Professional,
Rochester Institute of Technology

About the Authors' Orgs

APLU

The Association of Public and Land-grant Universities (APLU) is a research, policy, and advocacy organization dedicated to strengthening and advancing the work of public universities in the U.S., Canada, and Mexico. With a membership of 246 public research universities, land-grant institutions, state university systems, and affiliated organizations, APLU's agenda is built on the three pillars of increasing degree completion and academic success, advancing scientific research, and expanding engagement. Annually, member campuses enroll 5 million undergraduates and 1.3 million graduate students, award 1.3 million degrees, employ 1.3 million faculty and staff, and conduct $49.3 billion in university-based research.

Every Learner

Every Learner Everywhere is a network of 12 partner organizations that collaborate with higher education institutions to improve student outcomes through innovative teaching strategies, including the adoption of adaptive digital learning tools. Evidence demonstrates active and adaptive learning has the potential to improve course outcomes and digital solutions lower the cost of course materials, particularly for Black, Latinx, Indigenous, poverty-affected, and first-generation students. Our network partners represent leaders and innovators in teaching and learning. We have specific expertise in the adoption, implementation, and measurement of digital learning tools as they are integrated into pedagogical practices. For more information about Every Learner Everywhere and its collaborative approach to equitize higher education through digital learning, visit everylearnereverywhere.org, email everylearner@wiche.edu, or call (303) 541-0206. Follow Every Learner on Twitter @EveryLearnerNet.

Table of Contents

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Executive Summary

Higher education's response to the COVID-19 pandemic has ignited the need to improve student success in high-priority courses and to improve equity for Black, Latinx, Indigenous, poverty-affected, and first-generation learners. The 2020 spring and summer terms catalyzed a continuous improvement strategy that required educators to leverage flexible learning environments, including hyflex, hybrid, fully online, and classroom-based digital teaching and learning environments, that will extend well into the post-pandemic future. Department chairs (as both faculty and academic leaders), deans, provosts, and other academic administrators are helping to lead this continuous improvement strategy. These academic administrators are overseeing and supporting the development of high-quality teaching and learning environments that can seamlessly switch back and forth between in-person and online education.

While the pandemic exposed familiar challenges in higher education, it also led to an increased adoption of innovative technology solutions.

But not all students had equal access to the educational technologies required of them, nor were they equally supported in their learning. Poverty-affected and minoritized students, for example, disproportionally had poor internet connectivity and limited access to appropriate devices to go online. Due to such access and device limitations, these student populations had more difficulty using digital technologies.

Pre-pandemic, the benefits of learning models that blend traditional instruction with digital resources showed promise in improving student success and equity outcomes. The pandemic will be resolved eventually, but two lessons have emerged: we need to prepare for future disruptions and we need not return to outdated teaching models.

This guide features numerous links to resources academic administrators can draw from to effectively support a continuously improved teaching and learning environment that is sustainable for years to come.

The guide is divided into three primary sections:

- **Where to Start,**
- **Manage Change, and**
- **Supporting Students through Transformation.**

Where to Start
This section begins by addressing how to build a collaborative team of stakeholders who support a diverse student population faced with learning environments that rely heavily on educational technologies. The section next provides advice about project management in times of considerable change and significant challenges. This is followed by advice and resources on how to support faculty in the implementation of digital learning and evidence-based pedagogy.

Manage Change
This section starts with a definition of temporary emergency remote teaching and how it has led to the development of more robust digital learning environments. The section links to several important resources that feature implementation strategies, examples of high-quality online learning courses, and connections to recommended courses and other resources that cover online education concepts, competencies, and pedagogies.

Manage Change also covers the development and implementation of flexible learning environments, along with approaches for driving transformational change. Readers will find examples of evidence-based course models and instructional practices. This section rounds out with the results of the Association of Public and Land-grant Universities' Personalized Learning Consortium (APLU/PLC) grant initiatives on adaptive courseware, along with a case study on evaluating and selecting adaptive learning courseware from Georgia State University.

Supporting Students through Transformation
This section begins with an in-depth overview of equity issues institutions across the country are confronting. It stresses how the COVID-19 pandemic increased awareness of and even exacerbated inequity for poverty-impacted students and students of color. Following this overview is a list data and inequity indicators about achievement gaps and the digital divide, information about culturally responsive teaching practices, and a list of equity-oriented actionable best practices. Support issues include what administrators need to know about accessible learning environments and how to ensure that students are adequately trained and supported in digital learning.

An academic administrator's checklist based on what was covered across the entire guide is provided in Appendix A. In addition to embedded links throughout the main body of the guide, a resources section features a compendium of the extensive number of resources cited throughout the guide.

Where to Start

IN THIS SECTION:

- **Team Building**
- **Project Management**
- **Prioritize Foundational/Gateway Courses**
- **Supporting Faculty with Evidence-based Design**

Where to Start

Team Building

Higher education has recognized that it is imperative to improve high-priority courses to not only employ new learning sciences, but also to reduce equity gaps created by outdated approaches. This recognition requires academic administrators to build a collaborative continuous improvement process. Building a team that embraces such goals and aspirations is critical to achieving both initial success and long-term sustainability. This guide focuses on the project-building and change management needed to build a successful team that will put students first and improve student outcomes for Black, Latinx, Indigenous, poverty-impacted, and first-generation students. This work requires a cultural shift from being faculty-centric to having a student-first focus on improved equity. Academic administrators realize how the significance of such a shift involves bringing together faculty and others who support instruction into a strong and effective team whose goal is to continuously improve student outcomes.

To adequately handle numerous oversight tasks that come with such responsibilities, academic administrators can require the use of evidence-based teaching practices to engage early-adopter, faculty-led teams. The team can be optimistic about employing digital teaching and digital learning tools and pedagogies known to positively impact entry-level courses. The team's charge is to improve all sections of critical first- and second-year, entry-level, high-enrollment courses.

The importance of putting together an agile, committed, and collaborative team of individuals who fully understand what it takes to teach effectively and support a diverse student population that relies heavily on education technologies cannot be overstated. It is important to bring together colleagues from across campus to collaborate. Consider building a team that includes experienced faculty, instructional support personnel, IT managers, subject matter experts, institutional research and analysis specialists, student success and student support staff, and other professionals from teaching and learning centers to collaborate. The table on the following page describes the roles of individuals in an exemplar implementation team composed of experts from a variety of different campus groups with teaching and learning staff. If your institution has budgetary concerns or other barriers that may hamper your ability to form such a team, encourage discussions with staff and administrators who are representative of this exemplar implementation team.

Table 1: Suggested Implementation Team

Role	Description
Project Lead/ Executive Sponsor	An individual who leads and supports an implementation team from start to finish. The project lead can also act as an executive sponsor who advocates for the success of the initiative throughout the decision-making processes. This person is responsible for overseeing activities such as meetings, planning, documenting, and communicating with team members during every phase of the implementation process.
Course Lead	Faculty member(s) who will be responsible for improving student success by adopting and effectively utilizing evidence-based teaching and digital technologies in their newly designed courses.
Instructional Design	This individual(s) drives and supports decision-making related to course design and the adoption and implementation of educational technologies.
Academic Administration	Individual(s) who has decision-making power or authority with respect to resource allocation and course curriculum.
Teaching & Learning Support	Individual(s) with experience in instructional design and/or teaching and learning who provides a range of related support.
Faculty Support	On-campus individual(s) or outside company personnel who deliver educational technology and/or other course-related faculty support services, including the possibility of providing faculty training.
Student Support	Includes functions such as student advising, bookstore, financial aid, etc. Can help orient students to any new instructional approaches and provide access to instructional materials.
Research & Analytics	Individual(s) who pulls and analyzes implementation data.

Where to Start

Project Management

Project management is a well-known change-development process, but in academia, using this process to redesign courses collaboratively is less common. Course design that supports a population of diverse students aligns evidence-based teaching practices, course outcomes, and the effective use of digital tools. It is critical for academic administrators to support faculty through this process by making sure the institution provides access to other support-oriented individuals, such as instructional designers, assessment specialists, and digital technology experts. This kind of project-management process builds on years of collaborative change in coordinating syllabi, exams, assignments, common books/resources, and student instructional support, such as tutoring or supplemental instruction materials.

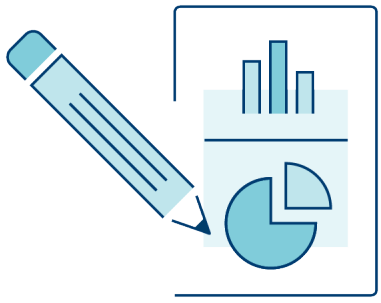
Project management planning begins with recognizing the uncertainty being generated by the COVID-19 pandemic and being fully prepared to shift instructional methods as institutional public health policies change. That includes establishing student messaging to keep students well informed. One example of such messaging includes having faculty post a pre-term statement to their syllabi, as noted in the University of Oregon's Continuity Planning policies. A preterm statement addresses what students need to understand when and if in-person classes transition to a blended or fully online model.

Another resource that could help academic administrators manage projects effectively during times of uncertainty comes from the American College Health Association (ACHA), which has prepared a broad set of guidelines to help campus administrators be prepared for possible emergency-oriented interruptions and related issues on their campuses. The ACHA guidelines concentrate on campus environment, community resources, public health capacity, demographics, internal resources, and risk tolerance.

When addressing continuous improvement as it relates to project management, WICHE Cooperative for Educational Technologies (WCET) in *Promising Practices for Navigating "What's Next,"* asks institutions what they plan to do to sustain and improve remote learning well into the future. Through interviews with online learning professionals, several promising and useful best practices emerged, such as how to leverage collaborative approaches for using institutional resources, applying LMS analytics to identify faculty and student support issues, and delivering accurate and updated communications to stakeholders.

Furthermore, WCET's analysis highlights effective project management-oriented best practices that had been in place in the pre-COVID era that were then expanded to greater numbers of courses as learning moved online. For example, the analysis shows how Washington State University provides faculty professional development in student engagement and authentic assessment, keeping all stakeholders aligned with the institution's project management goals.

Wichita State University is expanding peer faculty mentoring for those new to teaching online. The University of Central Florida is placing additional emphasis on accessibility and universal design to accommodate students with disabilities in online courses. The key to all these project management-oriented advances relies on emphasizing quality blended and online teaching and learning as a way for reaching all students, regardless of whether higher education is facing a national emergency.



Where to Start

Prioritize Foundational/ Gateway Courses

While the ACHA and WCET articles address many of the current uncertainties institutions are experiencing, it is important to prioritize a continuous improvement plan that focuses on a sustaining enhancement of foundational/ gateway courses that have relatively high DFW (D or F grade or withdraw) rates. Gateway courses are those that are required through a general education curriculum or prerequisites to upper-level courses in a particular degree pathway. It is imperative to improve gateway courses to reduce equity gaps created by teaching practices not based on learning science or evidence of efficacy. Black, Latinx, Indigenous, poverty-affected, and first-generation students are negatively affected by high DFW rates in foundational courses such as algebra, microeconomics, biology, chemistry, American government, and English composition.

Not only do low grades negatively affect a student's GPA, but a lack of mastery of foundational skills covered in these courses reverberates in later coursework across the sciences, arts, and humanities.

This Guide for Academic Administrators is generously supported by the Every Learner Everywhere network (ELE), an organization that "advocates for equitable outcomes in U.S. higher education through advances in digital learning." Its mission is "to help institutions use new technology to innovate teaching and learning." ELE's goal is to improve student outcomes for Black, Latinx, Indigenous, poverty-affected, and first-generation students, and the organization recognizes and supports the nature of learning and the unique learning needs of all students.

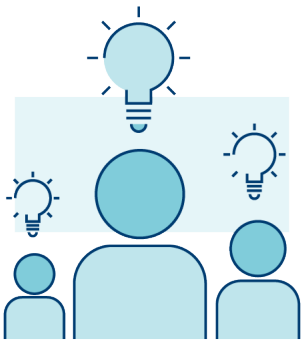
Additional resources on the numerous factors related to the nature of learning are provided in the book *How People Learn II: Learners, Contexts, and Cultures*, published by the National Academies of Science, Engineering, and Medicine in 2018.

In Chapter 2, titled *Context and Culture*, the authors note the following food for thought that can be applied to improving student outcomes of underrepresented students:

> Each learner develops a unique array of knowledge and cognitive resources in the course of life that are molded by the interplay of that learner's culture, social, cognitive, and biological contexts. Understanding the developmental, cultural, contextual, and historical diversity of learners is central to understanding how people learn.

In Chapter Six, titled *Motivation to Learn*, the authors advise educators to support students by:

- helping them to set desired learning goals and appropriately challenging goals for performance;
- creating learning experiences that they value;
- supporting their sense of control and autonomy;
- developing their sense of competency by helping them to recognize, monitor, and strategize about their learning progress; and
- creating an emotionally supportive and nonthreatening learning environment where learners feel safe and valued.



Where to Start

Supporting Faculty with Evidence-based Design

Most faculty, like everyone in higher education, were overtaxed by the amount of change required in response to the COVID-19 crisis to keep teaching effectively and remain safe. Despite the numerous challenges brought about by the pandemic, faculty continued to improve instruction and attend professional development events. This work has become the backdrop to continuing the development of better, high-quality courses.

Academic administrators are encouraged to make certain that faculty take full advantage of their institution's instructional development and online learning production support services (typically offered through teaching and learning, academic innovation, or online learning centers). Since it is commonplace for faculty to feel overwhelmed when forced to suddenly move to online or remote teaching, academic administrators should build an internal team that fully supports faculty, or at least point them to valuable external resources. If your institution's instructional support is limited due to resource constraints, consider external guides that can be found among the numerous faculty toolkits and other resources available at teaching and learning center websites and other academic-oriented websites. Such external resources sprinkled throughout this guide deliver indispensable information that faculty can easily utilize.

The lessons learned from COVID-19 include developing successful evidence-based course design approaches to more fully engage faculty in the instructional process. In support of these approaches, faculty can be encouraged to collaborate with other faculty to share strategies and consider what pedagogies should be retained or needed to further improve student success and equity. They can also be encouraged to add digital technologies that have proven to be catalysts for continuously improving teaching and learning environments, especially in high-priority/foundational courses.

When making decisions to add technology across all sections of a course, make sure to adopt institutionally supported technologies currently licensed and readily available to faculty members. Choosing digital technologies should support student learning. These typically start with a learning management system and, during COVID-19, were robustly supported by synchronous virtual classroom tools. Now, as all kinds of digital teaching and learning environments become more pervasive, consider

adopting digital learning technologies like adaptive courseware to help students practice skills and receive immediate feedback while also providing faculty with actionable data about student progress. Please see this guide's *Promising Course Models and Instructional Strategies* section, on page 27, for information on how such additional digital tools can make a positive difference.

In *Time For Class: Part 1: A National Survey of Faculty During COVID-19*, published in 2020 by ELE in partnership with Tyton Partners and Digital Promise, the authors explain that a swing back to normal is not likely to happen, as "the impact of a global pandemic and economic crisis has created a shift in how, when, and where student learning occurs." The following six priority actions are highlighted as key to the likely possibility of boosting your already strong support of faculty:

Six Priority Actions to Effectively Support Faculty

1. Provide faculty support in implementing online instructional practices
2. Support faculty in organizing courses to include routines that support student agency, community, and engagement in learning
3. Focus on strategies to identify struggling students and ensure sufficient institutional supports
4. Facilitate the discovery and selection of high-quality and affordable supplemental digital learning tools
5. Expand institutional capacity for key elements of digital learning infrastructure
6. Target support for adjunct faculty and faculty teaching introductory courses

For an extensive amount of resources in support of evidence-based teaching, review *Teaching Online Resources to Assist with Instructional Continuity During COVID-19*, a list organized by Professor Florence Martin and the Learning, Design and Technology program at UNC Charlotte. This list of resources covers numerous topics, including best practices (both synchronous and asynchronous), sample online courses, online assessment, and online collaboration. One interesting resource among many is Harvard University's *Best Practices: Online Pedagogy*, where advice on teaching is broken up "according to the common teaching styles (lecture, case, small-group discussion, and hands-on)."

Another recommended resource is the *Quality Matters Emergency Remote Instruction Checklist*, featuring considerations, tips, and actionable strategies to enact during an institutional move to temporary online instruction of classroom-based courses. Also see *Instructional Strategies for Online Courses*, where the University of Illinois Springfield explains how online learning environments permit a range of interactive methodologies. Instructors find that in adapting courses to online models, they pay more attention to the instructional design of their courses. This, in turn, enhances the quality, quantity, and patterns of communication students practice throughout an online learning experience.

At the same time, some courses require some form of physical presence, such as science labs. For information on how classes that feature labs or other in-person requirements can be converted to an online modality, please see *Appendix B: Courses that Require a Physical Presence*, on page 43.

For another excellent document that provides important advice and strategies related to faculty support, and much more, see ELE's 2020 "Faculty Playbook," *Delivering High-Quality Instruction Online in Response to COVID-19*. The playbook, written in partnership with the Online Learning Consortium and APLU/PLC, offers information and valuable resources about online learning and remote teaching, covering such areas of interest as design with equity in mind, course components and management, evaluation procedures, and overall continuous improvement. The playbook also addresses the use of online learning strategies in non-emergency situations, as well as in response to emergencies such as the COVID-19 pandemic.

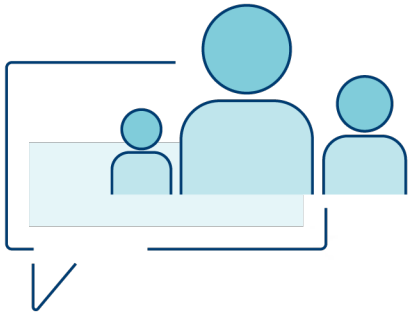
The lessons learned extend to any learning context. Enacting pedagogical change requires that faculty be allotted enough time to effectively address course improvements. Academic administrators can enlist input from all faculty members to be involved, not just the passionate innovators. Coordinate efforts by providing essential actionable data, internal and external benchmarks, resources, support, time, and incentives.

In *Engagement: The Secret to Teaching Online This Fall*, published in *Faculty Focus*, Seattle University Assistant Professor Neria Sebastien notes that many faculty who are inexperienced online educators can more adequately prepare for their online courses and find some clarity by committing to a Universal Design for Learning (UDL) approach. The Center for Applied Special Technology (CAST) created UDL, "a research-based set of principles to guide the design of learning environments that are accessible and effective for all." Sebastien explains that "the UDL framework considers the variabilities of all learners, thus including learners who are underrepresented and formerly relegated to the margins of our higher education systems."

For another point of view concerning the establishment of effective faculty engagement with students, see the Gallup education research article, *Improve Student Outcomes by Building Caring Faculty Relationships.* Through a survey of more than 75,000 college graduates, the Gallup research showed how some core college experiences "strongly relate to important long-term outcomes, including engagement in careers and well-being after college." For example, it's important to "build meaningful, not transactional, relationships" with students in their first year by focusing on what is right with them, rather than what is wrong. The Gallup article proposes to "imagine a world where faculty and students work side-by-side to celebrate students' strengths. Imagine how such conversations would allow students to feel cared for and developed by faculty through structured conversations. Such moments in time can change students' lives."

Finally, it is vitally important to establish a sound and reliable communications strategy by holding regular meetings with all team members. Be accessible and listen to the team's ideas and concerns. Clearly communicate expectations related to team member participation, timeline development, and resources required. Develop regularly scheduled communications to keep all stakeholders engaged. Think about what, precisely, you are communicating, along with the length and complexity of your communications, and your audience.

Meetings can be fun and engaging, regardless of how they can sometimes be too frequent and cause fatigue. Try to foster meaningful and motivating meetings that can help alleviate fatigue.



Manage Change

IN THIS SECTION:

- **Emergency Remote Teaching (ERT) and the Growth of Robust Digital Learning**
- **The Development of Flexible Learning Environments**
- **Approaches for Driving Academic Transformation**
- **Promising Course Models and Instructional Strategies**

Manage Change

Emergency Remote Teaching (ERT) and the Growth of Robust Digital Learning

Emergency remote teaching (also referred to as temporary online learning) became the order of the day in the spring and summer of 2020, but ERT is different from high-quality online education. In *The Difference Between Remote Teaching and Online Learning*, published by EDUCAUSE, ERT is defined as a temporary shift involving fully remote solutions that would have otherwise been delivered in person or as hybrid courses. It was meant to be quickly deployed as a reliable option during the early days of the pandemic.

ERT became a catalyst for an even stronger push by educators to build out more robust digital learning environments that are flexible, well-supported, and able to pivot back and forth from in-person to fully online and hybrid/blended when circumstances may dictate another temporary closure.

As such change occurred, the work of improving equity and the student experience grew more important. Teams collaborated to build out more effective digital learning approaches and tools.

As this work continues, academic administrators must keep faculty focused on both course design and course management. Course management is defined as what happens once students start the course. A change in course management, for example, could include offering more low-stakes assessments to monitor progress and intervene with students in a timely way. The importance of this kind of change is to help faculty understand that intervening effectively over the duration of a course is critical to supporting student success.

Managing change also means preparing faculty to deliver instruction in multiple modalities, which are described in *The Development of Flexible Learning Environments* section on page 21. The change management process here must also be aligned to student success and meeting the public health safety needs of faculty and staff. The pandemic will fade, but many individuals will need flexible instructional environments due to enduring effects.

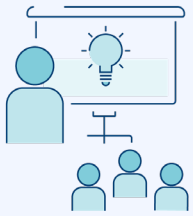
Resources on High-Quality, Robust Online Learning

For a comprehensive summary of research that extensively covers high-quality, robust online learning, see the book *Learning Online: What Research Tells Us about Whether, When and How*. The book covers how to implement different forms of online learning and features the following nine online learning dimensions related to design complexity and decision-making: modality, pacing, student-instructor ratio, pedagogy, instructor role online, student role online, online communication synchrony, role of online assessments, and source of feedback.

For additional resources that define high-quality online learning courses, start with *Interested in Teaching Online*, a self-paced course created by the Center for Online Teaching Excellence, State University of New York. This course covers concepts, competencies, pedagogies, and practices that are required to plan, develop, and teach an online course. It also showcases the perspectives of students, faculty, and instructional designers who have a wide range of experience with online teaching and learning.

Also see *Online Learning 101*, from the University of North Carolina system. This free class that faculty can share with their students features short videos and course material for prospective online students. The prospective online students section is organized into five primary sections: Pre-Assessment, Technology, The Online Classroom, Fitting Online Into Your Life, and Student Services.

Another good resource comes out of Winona State University, published on the University of Michigan Center for Research on Learning & Teaching website, titled *Enhancing Student Learning: Seven Principles for Good Practice in Undergraduate Education*. Useful for faculty and support staff in an online or in-person course, the authors identify practices, policies, and institutional conditions that more likely result in a powerful and enduring undergraduate education.



Manage Change

The Development of Flexible Learning Environments

Colleges and universities have focused on the design of flexible learning environments for decades. Many institutions have evening, weekend, and online courses. Yet, the emergent theme from the pandemic is that academic administrators must provide even more flexible learning environments. Flexible learning is a broad term and strategy geared toward increasing access to learning. Flexible learning is enabled through the adoption of educational technologies that improve student success for a wider, more inclusive student population.

An editorial in Volume 38, Issue 3 (2017) of the *Distance Education* journal reflects on several flexible learning concepts. Executive Editor Som Naidu explains that, for learners, it might include a wider variety of choices related to learning activities and assessments. For faculty members, it might include a wider spectrum of modes and methods of communications with students. Overall, flexible learning can be applied to any learning modality, including in-person courses. Naidu provides the following eight approaches for embedding flexibility and leveraging teaching and learning:

Eight Approaches for Embedding Flexibility and Leveraging Teaching and Learning

1. **Learning experience design:** This is about the design and development of productive learning experiences so that each learner is able to make most of the learning opportunities they afford.
2. **Learner-content engagement:** This is about learners' engagement and interaction with the subject matter in ways that suit individuals, their styles and approaches to studying and its time, place and pace.
3. **Learner-teacher engagement:** This is about choices learners have in relation to the mode and method of their engagement and interaction with their teachers and tutors.
4. **Learner-learner engagement:** This is about choices learners have in relation to the mode and method of their engagement and interaction with their peers in small and large groups, and in offline and online educational settings.
5. **Learner engagement with the learning environment:** This is about adaptable access, interaction and engagement

continued on following page

with the learning environment (such as with mobile devices, Wi-Fi access and innovative use of study space).

6. **Learner engagement with assessment activities:** This is about choices learners have in relation to the fulfillment of their assessment requirements.
7. **Learner engagement with feedback:** This is about choices learners have in relation to access to feedback on their learning and assessment activities.
8. **Learner engagement with the institution:** This is about choices learners have in relation to their engagement with the services of the educational institution.

These approaches are more fully explained in several articles published in Volume 38, Issue 3 (2017) of the *Distance Education* Journal.

For example, in *Creating a learner-centered teaching environment using student choice in assignments*, authors Cheryl Hanewicz, Angela Platt, and Anne Arendt conducted a study where instead of having students complete a list of prescribed assignments, cafeteria-style grading was used, allowing students to select their own coursework. Results revealed that more than one-third of students in their study "completed more assignments than were required for an A grade."

In *Facilitating student learning in distance education: a case study on the development and implementation of a multifaceted feedback system,* Samantha N. Uribe and Michelle Vaughan write that providing ample student feedback "is an essential tool to scaffold learning and forge relationships between distance educators and their students."

The other articles in this issue of the *Distance Education* journal addressed motivational strategies and cognitive learning, pedagogical practices of online learning secondary teachers in New Zealand, student mental health disability issues in online learning, and refining online learning success in MOOCs.

The intention of these constructs is to build a more holistic and flexible approach to instruction, especially at the first-year and high-enrollment course level, where learner preparedness varies. This is critical guidance, along with the commitment to student success, that pushes the project and faculty leads to think about modality as well as the flexibility built into instruction.

The table on the following page highlights four types of learning that are based on where the primary learning takes place. During the pandemic, institutions have offered courses in four primary learning modalities: fully online, hybrid/blended, hyflex/blendflex, and classroom-based digital learning/technology enhanced.

As many have learned throughout the pandemic, online learning and digital technologies can be synchronous, where a class is together at the same time through live videoconferencing, or asynchronous, where students are online at different times. The two approaches are often combined in many learning environments detailed on the following page.

Table 2: Four Primary Learning Modalities

Modality	Description	Resources
Blended/Hybrid 	Online activity is mixed with classroom meetings, replacing a significant percentage of, but not all, required in-person instructional activities. Blended/ hybrid can also include a mix of online asynchronous and synchronous elements.	The Blended Learning Toolkit Hybrid/Face-to-Face Variations
Hyflex/Blendflex 	Offers students optional delivery modes for the same course, from in-person classroom to attending online synchronous alternatives. Hyflex/blendflex has also been identified as a flexible accommodation for students in quarantine.	Free Book: Hybrid Flexible Course Design: Implementing student-directed hybrid classes BlendFlex Delivery Model The Hyflex Course Model
Classroom-based Digital Learning/ Technology-enhanced 	In-person course that integrates digital learning technologies without reducing seat time.	Digital Learning at Every Learner Student Satisfaction in Web-enhanced Learning Environments
Online 	All course activity is done online. There are no required face-to-face sessions. Online tends to be asynchronous, but it can also include synchronous elements, such as live video-conferencing.	Interested in Teaching Online — free self-paced course from SUNY Online Learning 101 — from the University of North Carolina system

Definitions adapted from Sener, J. (2015). *Updated E-Learning Definitions*, Online Learning Consortium

Research is clear from multiple meta-analyses that blended learning, which could fall under any of the learning modalities except fully online, produces better student outcomes and success. As academic administrators launch continuous course improvement efforts, they need to encourage flexible learning modalities and instructional approaches to meet students where they are in their learning progress. Lauren Margulieux, Michael McCracken, and Richard Catrambone, in a meta-analysis of studies of blended learning environments titled *A Taxonomy to Define Courses that Mix Face-to-Face and Online Learning*, identified two spectra across which blended learning could be classified and created. The value of this analysis is that very few courses can be classified anymore as simply "face-to-face" or "online." Rather, the incorporation of technology for a variety of purposes, which can shift over time, shows that just about any course can be flexed or blended to adapt to changing circumstances.

A current pandemic example of flexible learning at Arizona State University (ASU) is interpreted as meeting students in course models they prefer based on their own health concerns. And it comes with a choice of three options:

> ASU immersion: On-campus, in-person, technology-enhanced learning environment.
>
> ASU Sync: Synchronous, technology-enhanced, and fully interactive remote learning using live lectures via Zoom. This approach can be used simultaneously with in-person instruction to accommodate students in different circumstances and enable social distancing in classrooms or as stand-alone technology. It offers the benefits of in-person instruction in an interactive group learning environment.
>
> iCourses: Courses delivered entirely online with lectures available on demand.

ASU claims that "many classes will include a blend of in-person and ASU Sync experiences. Some labs, clinical experiences, and fine arts courses that do not lend themselves to remote instruction will only be available through on-campus, in-person instruction."

The need to design a rich and flexible learning environment means that project implementation teams like those listed in Table 1 on page 9 must come with a variety of expertise. Additionally, in the aforementioned ELE Faculty Playbook, detailed information is provided on how faculty, in consultation with instructional designers, academic development professionals, and online administrators and support offices, can construct valuable and effective digital learning experiences. Academic administrators don't need to make the decisions, but they do need to represent students and direct collaborative change that embraces improved or quality/well-designed learning experiences and flexibility in the type of courses available to students.

Approaches for Driving Academic Transformation

Institutions take different approaches to developing high-quality online learning. Many institutions choose the process of enacting transformational change internally to develop a systemic infrastructure for digital learning. Other institutions, where numerous or high-value academic programs are put online, may choose to utilize online program management providers (OPMs). EDUCAUSE has resources for both, one titled *Leading Academic Transformation* and the other titled *Online Program Management*. (Using an OPM is not the focus of this report, but for those who would like to understand how an OPM works, please go to Appendix C.)

Leading academic transformation and providing supportive guidance to academics are critical. The EDUCAUSE Learning Initiative describes how technology creates new, transformational opportunities and raises expectations for delivering high-quality, long-lasting, flexible learning environments that cannot succeed without effective leadership. There are six criteria for moving academic transformation forward:

Six Criteria for Moving Academic Transformation Forward

1. **Stakeholder-Centered Design** — Take proactive measures to meet the expectations of all stakeholders.
2. **Relevance** — Degrees should allow students to demonstrate skills.
3. **Sustainability** — Leaders advance institutional missions and set financial goals. For faculty members, practicing sustainability entails focusing on student interactions that promote personal development.
4. **Strategic Use and Development of Technology** — Technologies, such as predictive analytics and other data-driven services, can help advance transformation. Also consider adopting personalized learning strategies that help learners work through competencies with the help of adaptive technologies.
5. **Cross-Functional Teamwork** — CIOs, for instance, must communicate with CFOs, provosts, presidents, faculty, instructional designers, and enrollment and financial aid specialists. It's important to prioritize the work that all these professionals provide.
6. **Culture, Climate, and Change Management** — Start with a clear vision of where any initiative will take the institution. Use what's learned through active listening of all stakeholders to guide efforts, clear any stumbling blocks, and engage with both champions and skeptics. Continually seek new supporters.

The institutional model for academic transformation aligns with the orchestrating role chairs and deans take on when supporting continuous improvement for high-enrollment, gateway, and first-year courses.

In *Academic Leadership Qualities for Meeting Today's Higher Education Challenges*, published by Magna Publications, Maryellen Weimer has particularly salient advice for chairs and other academic administrators. She asks them to talk more substantively about teaching and learning in department meetings. In order to continuously improve outcomes for students, there needs to be more time for discussion and more examples of evidence-based teaching that works within a department or a discipline.

The Carl Wieman Science Education Initiative (CWSEI) at the University of British Columbia categorizes effective teaching practices in its *Teaching Practices Inventory*, which includes reference to *The Teaching Practices Inventory: A New Tool for Characterizing College and University Teaching in Mathematics and Science*, by Carl Wieman and Sarah Gilbert, as well as *A Better Way to Evaluate Undergraduate Teaching,* by Wieman.

The more focused emphasis on student success and improved learner equity has generated a stronger need for academic administrators to incorporate effective teaching practices into department meeting conversations. The point is not to provide "THE" course model, but to make discussion of improved learning outcomes a consistent conversation.

To support such conversations, most academic administrators have access to substantial data and institutional dashboards. However, many faculty may not have access to such data, except for their own courses. This lack of data transparency for all parties creates an uneven discussion. To help alleviate such discrepancies, academic administrators must share what is known about student success as it relates to demographic groups such as Black, Latinx, Indigenous, poverty-affected, and first-generation students. The de-identified aggregated data is often a trigger that recognizes how uneven student outcomes are not acceptable. Faculty typically agree, and they will welcome a collaborative discussion that supports improvement across all course sections.

The shift in responsibility from individual faculty to a collective at department and institutional levels is still new, and it requires a sincere effort to not resort to old methods. The focus must remain on providing all students with improved outcomes, especially for those who have not been treated equitably. Arguably, academic administrators must be able to point to models and support a vision where entry courses recognize learner variability, the need for professional development for faculty, the advancement of institutional instructional departments as collaborators, and a willingness by all to continuously improve.

Manage Change

Promising Course Models and Instructional Strategies

In the last five years, multiple first-year and high-enrollment course models have demonstrated how to improve student success. Many of these models are derived from new work in learning science that show how and why students need more subject-related practice and low-stakes assessments.

One of those models is active + adaptive courseware and pedagogies, in which personalized learning best practices can move forward based on each student's interactions with instructional content and assessments. Adaptive courseware is a digital tool that includes instructional content and formative and summative assessments. Based on the student's interaction with the tool, it modifies their learning path to maximize mastery of learning objectives and course content. Adaptive courseware provides instructors with real-time data on students' progress. It analyzes students' responses and points them to activities based on their needs. The data allows instructors to spend more class time on interactive activities that build on student engagement outside of class.

Active learning ties back to much of the evidence-based teaching mentioned previously. Changes required in teaching the course should not be underestimated. Prior to digital tools like adaptive courseware, most instructors have not had constant automated formative data that provides them with enough information to intervene during a course. These tools provide students with instructional practice and offer faculty both course-level and unique student data. Equipped with such data, faculty can then choose from appropriate active-learning teaching strategies that improve student understanding during the course.

APLU/PLC was awarded two grants related to active + adaptive courseware and pedagogies: an Accelerating Adoption of Adaptive Courseware (AACC) grant launched in 2016 and, through ELE, a grant titled Adaptive Courseware for Early Success (ACES) launched in 2019. Combined, these two grants supported 14 four-year institutions that are adopting and implementing adaptive courseware in foundational courses taken primarily by first-year and second-year undergraduates across numerous disciplines. The ELE grant also includes seven 2-year/community colleges being supported by Achieving the Dream.

Evidence from both grants reveal that adaptive courseware can make a positive difference in student outcomes. Cumulative data and success indicators show that course pass rates improve faster in sections that include active + adaptive courseware and pedagogies. The most significant results from the first eight institutions is that after 2.5 years of grant work, students had saved more than $12 million from not repeating courses. Other results reveal that out of 66 courses scaled over a period of three years, 81% reported higher A, B, or C grades. Institutions are also self-reporting increases in pass rates across student populations, and disparities in educational outcomes are being addressed with minoritized student populations. Three universities have reported a double-digit increase in pass rates in college math/algebra, biology, and business. Modern languages also show consistent increases in pass rates.

Both grants have also revealed that it is vitally important to have academic administrators, such as chairpersons and deans, lead the adoption and implementation of active + adaptive courseware and pedagogies. APLU/PLC has been taking lessons learned from both grants to scale out best practices and resources to a broader field of institutions with the goal of enabling them to build their capability in support of student-centered transformation.

In *Active learning increases student performance in science, engineering, and mathematics*, published by the Proceedings of the National Academy of Sciences (PNAS), a meta-analysis of 225 studies revealed that student examination scores improved by about 6% in active learning environments when compared to student examination scores in traditional lecture-based courses. Such results raise lots of questions and ultimately support active learning as an "empirically validated teaching practice in regular classrooms."

Another model for better learning outcomes emphasizes humanizing the teaching and learning experience. In *Humanizing Online Teaching to Equitize Higher Education*, published in ASU's June 2020 *Current Issues in Education* journal, Michelle Pacansky-Brock, Michael Smedshammer, and Kim Vincent-Layton present a model for online teaching that encourages connection and empathy through the application of six humanizing strategies. The authors note that humanizing online teaching is a pedagogical strategy that can also help to eliminate equity gaps.

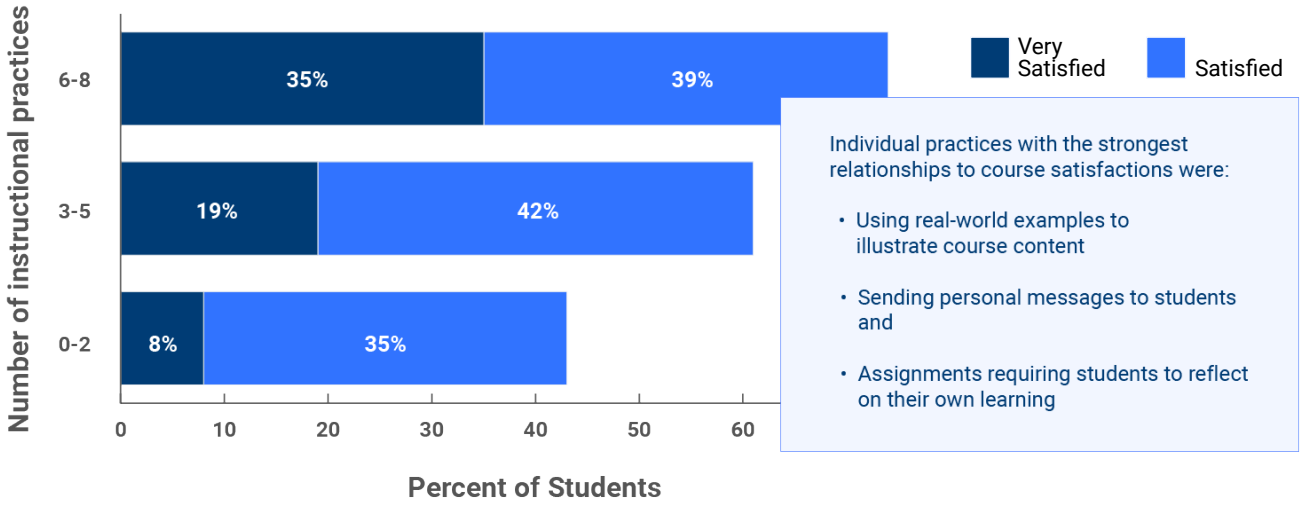
To help inform impacts from COVID-19 and especially how students fared, a national survey was conducted by Digital Promise and Tyton Partners, in partnership with ELE. The survey results are described in detail in *Suddenly Online: A National Survey of Undergraduates During the COVID-19 Pandemic*. The survey was administered to a random sample of 1,008 undergraduates who had to finish their courses in an ERT modality in spring 2020 due to their institutions closing. The survey exposed underlying equity gaps (see the *Equity Issues, and Challenges* section on page 32).

The survey also addressed predictors of student satisfaction with their remote learning courses based on eight recommended practices for online instruction, all of which are typically strong elements of an adaptive teaching and learning environment:

Eight Recommended Practices for Online Instruction

1. Assignments that ask students to express what they have learned and what they still need to learn
2. Breaking up class activities into shorter pieces than in an in-person course
3. Frequent quizzes or other assessments
4. Live sessions in which students can ask questions and participate in discussions
5. Meeting in "breakout groups" during a live class
6. Personal messages to individual students about how they are doing in the course or to make sure they can access course materials
7. Using real-world examples to illustrate course content
8. Work on group projects separately from the course meetings

Figure 1:
Satisfaction with Post-COVID-19 Course by Number of Recommended Online Practices Used



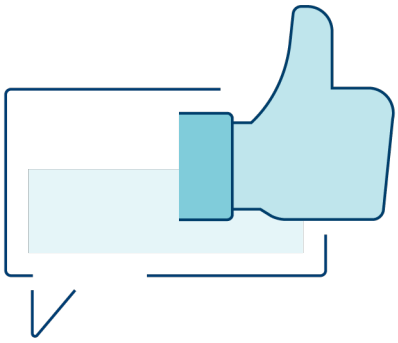
Adapted from Means, B., and Neisler, J., with Langer Research Associates. (2020). *Suddenly Online: A National Survey of Undergraduate Education During the COVID-19 Pandemic.* Every Learner Everywhere. https://www.everylearnereverywhere.org/resources/suddenly-online-national-undergraduate-survey/

"Net satisfaction (the proportion of students very or somewhat satisfied) for courses employing 0-2 of the recommended online instructional practices was 43 percent compared to 61 percent for courses using 3-5 of the practices, and 74 percent for courses using 6-8 of the practices." Such results highlight the need for greater adoption of the eight practices listed regardless of whether a course is planned to be online or is "suddenly online," as the report notes.

Academic administrators should also be aware of processes that inform collaborative adoption of instructional tools. An example from the adaptive work is described by Megan Tesene in *Adaptive Selectivity: A Case Study In Evaluating And Selecting Adaptive Learning Courseware at Georgia State University*. Tesene reports how Georgia State University (GSU) took a data-driven and collaborative approach when adopting adaptive courseware across five high-impact courses. The report offers numerous insights to individuals and institutions interested in navigating and experimenting with adaptive learning courseware, providing a model that is replicable and flexible.

In order to effectively evaluate and select the appropriate adaptive courseware, GSU reviewed documentation on how to select courseware and then shared with faculty available courseware by discipline. A more recent adaptive courseware evaluation tool has since been developed by Achieving the Dream and APLU, in partnership with ELE, called the *Courseware Section Evaluation Rubric*. Tyton Partners will also be launching an updated Quality Access Program website and rubric in 2021.

Leveraging adaptive courseware to improve student success requires significant project management, including a collaborative team that is willing to measure impact. See *Pain Points in Adopting an Adaptive Learning Approach*, an EDUCAUSE video that features an interview with Chuck Dziuban, from University of Central Florida, and Connie Johnson, from Colorado Technical University. Johnson argues that the biggest challenge is understanding how to engage with the technology effectively to improve course instruction. Dziuban notes that adaptive learning can bring significant and often difficult transformational changes to both faculty and students.



Supporting Students Through Transformation

IN THIS SECTION:

- **Equity Issues and Challenges**
- **Creating an Accessible Learning Environment**
- **Ensuring Students are Adequately Trained and Supported**

Equity Issues and Challenges

While the COVID-19 pandemic has illuminated growing health and social disparities, economic difficulties, and other social problems that are more prevalent for Black, Latinx, Indigenous, poverty-affected, and first-generation students, it is vital to recognize that these challenges require higher education to make immediate and ongoing changes.

There has been increased awareness of inequity and the longstanding inequities that exist in higher education. The pandemic exacerbated inequity as it became more obvious that not all students had equal access to the educational technologies and supports they needed to succeed in remote learning. Poverty-affected students and minoritized students, for example, disproportionally had poor internet connectivity and limited access to appropriate devices to go online. Most of these students relied on the facilities, internet connections, and devices their campuses had provided. And many of these same students had never taken online or blended courses.

In the survey-backed *Suddenly Online* report, equity issues were explained, in brief, as follows:

> In addition to the continuing need to improve teaching and learning in ways that diminish student achievement gaps for low-income students and students of color, institutions will need to take into account the challenges that learning online can pose for these students as well as other students. Instructional designs and course policies and practices need to work for students with poor internet connectivity, limited access to appropriate devices, family and job responsibilities, and no designated place at home for doing coursework.

It is important to recognize that today's incoming students are from highly diverse socioeconomic and educational backgrounds. A Pew Research study found that a rising share of undergraduates are from poor families, which, for a variety of reasons, can have a deleterious impact on student success. The Pew study found that in 2016, 20% of dependent students were poverty affected, up from 12% in 1996. And 42% of independent students were poverty affected, up from 29% in 1996. These

differences make it difficult for institutions to offer one-size-fits-all learning environments in which all incoming students are equally served, as one-size-fits-all learning does not account for social inequities. It is critical for academic administrators to both be the voice for the students, championing their abilities to succeed, and to listen to students, who can offer insights into which policies and practices create barriers to success. As higher education tries to adjust to new demands of alternative teaching and change old practices, the pandemic continues to disproportionately exacerbate negative circumstances for poverty-affected students.

The American Council on Education (ACE), in collaboration with the Research Triangle Institute (RTI) International and funded by The Andrew W. Mellon Foundation, released a series of important reports under the heading of Race and Ethnicity in Higher Education, along with an interactive microsite. Among numerous resources available on the microsite, the ACE reports cover such inequity indicators as U.S. population trends and educational attainment, secondary school completion, enrollment in undergraduate and graduate education, undergraduate and graduate persistence and completion, how students finance their studies, and much more.

Minoritized students make up more than 45% of the undergraduate population, up from 30% two decades ago. While there are some promising developments in college enrollments for Hispanic and American Indian/Alaska Native students, and higher rates of advanced degrees for Asian, White, and Black students, the ACE reports also highlight the inequities of outcomes for students of color, particularly for Black students. According to the data, Black students had higher dropout rates, higher representation in low SES (socioeconomic status) backgrounds, higher rates of families with no college experience, and higher rates of graduating from high schools that failed to adequately prepare them for higher education. Funding models that rely on local property taxes as the basis for school funding have exacerbated these problems where schools in poverty-affected neighborhoods have, for decades, lacked the same resources as schools in middle-class neighborhoods.

Other student issues and strategies commonly cited in the academic literature relate to academic equity gaps (also referred to as the completion gap) as well as the digital divide. In a February 2020 *Chronicle of Higher Education* article headlined *We Know What Works to Close the Completion Gap*, University of Iowa Assistant Professor of English David Gooblar explains how six-year graduation rates for White students are 30 percentage points higher than for Black students, and nearly 20 percentage points higher than for Hispanic students.

Gooblar adds that while there is no lack of knowledge of what needs to be done to possibly fix these gaps, there is a lack of will, effective collaboration, and funding to enact effective change. He claims that it's easy to find ambitious diversity initiatives and extensive amounts of research for improving completion gaps at colleges and universities across the country, but it's not so easy to find "diversity initiatives that have anything to do with teaching ... In most campus-diversity plans, it's rare to see any attention paid to teaching practices or to find any real investment in helping faculty

members improve their teaching in ways that will help underrepresented students succeed."

Gooblar points to "a remarkable study published in 2018 that analyzed longitudinal data to better understand the persistent college-completion gap between White and Black students." Titled *The Paradox of Persistence: Explaining the Black-White Gap in Bachelor's Degree Completion*, the study found that instead of social engagement as key to student persistence, "differences in GPA explained most of the discrepancy in Black and White students' completion rates. That is to say: If you help these students succeed academically in their college courses, you help them graduate," Gooblar writes. He then logically concludes that if institutional cultures help faculty members teach better, they'll help more students succeed.

Regarding the digital divide, it's important to recognize that there still exists a substantial gap between students who have enough access to technology and those who do not, as noted in a August 2018 report by the American College Testing (ACT) Center for Equity in Learning, titled *The Digital Divide and Educational Equity*. . ACT conducted a random survey of students who took the ACT test in April 2017. Of the 7,233 students who responded, 14% had access to only one device at home, whereas 85% of respondents had access to anywhere from two to five devices. Those with access to one device often had to share it with other family members in their household, limiting their ability to complete their education-related activities.

Furthermore, this disparity was exacerbated in rural areas, where students were less likely than their urban-dwelling peers to have access to only one device at home, and, for many, this was merely a smartphone. Combined with a lack of broadband internet access (as highlighted by Pew Charitable Trusts), the digital divide in rural regions makes online learning particularly problematic for students in those areas.

When looking deeper into race and ethnicity data, ACT found that 24% of American Indian/Alaskan Native students had access to one device at home, followed by 22% of African American students, 19% of Hispanic/Latino students, and 14% of Native Hawaiian/other Pacific Islander students. In contrast, only 8% of White students and 8% of Asian students reported having access to only one device at home. In addition, 20% of American Indian/Alaskan Native students have access to only a smartphone, compared to 4% of White students.

Are colleges and universities answering the call to rectify such disparities? According to an August 2020 article, *Need a Laptop? Colleges Boost Loaner Programs Amid Pandemic*, published by National Public Radio (NPR), 10% of the nation's college students, which equates to about 2 million people, do not have access to a laptop for their studies. Essentially, the pandemic and its accompanying increase in online learning courses has intensified this problem, and colleges and universities are working hard to get more laptops into underserved students' hands. For example, the NPR article notes that many students who relied on their institution's computer labs for internet access found themselves at a loss to meet their virtual class requirements because of campuses physically closing.

At Northwest Washington Community College, the amount of loaner laptops needed to service students went from 50 devices on hand to

immediately purchasing 400 additional devices to meet the new demand. The initial 400 had to be increased by another 700. As noted in the NPR article, "colleges across the country have been amassing as many computers as the market will allow — so they can lend them out to students."

Even at college campuses that opened in-person classes in the fall of 2020, laptop loaner programs have increased. At historically black Benedict College in South Carolina, where about 24% of students do not have laptops, more have been purchased for distribution. Benedict College President Roslyn Clark Artis is quoted in the NPR article, saying that the COVID-19 pandemic "certainly taught us that there are challenges our students face that we either have become numb to, or perhaps truly did not appreciate."

In short, minoritized students are a larger proportion of those affected by poverty and known to have more challenging life circumstances than students from middle- to high-income backgrounds. In addition to achievement gaps and lack of device access and good broadband, their circumstances in life include unemployment, unequal health care options, housing inequity, food insecurity, and numerous other problems. Because of this, faculty and staff must increasingly practice sensitivity and empathy as they engage with and motivate students faced with such serious hardships. One way to increase their sensitivity and empathy entails practicing what's known as culturally responsive teaching (CRT).

In *Culturally Responsive Teaching: Its Application in Higher Education Environments*, published in April 2020 in the Multidisciplinary Digital Publishing Institute's *Education Sciences* journal, Laveria Hutchison and Leah McAllister-Shields, from the University of Houston, outline instructional strategies that utilize "the cultural knowledge, prior experiences, frames of reference, and performance styles of ethnically diverse students to make learning encounters more salient to them. It teaches to and through the strengths of these students." In line with that thinking, they provide the following five characteristics of CRT-oriented instruction:

Characteristics of Culturally Responsive Teaching

1. Acknowledge the legitimacy of the cultural inheritance of different ethnic groups as legacies that affect students' dispositions.
2. Build meaningfulness between home and school experiences as well as between academic abstractions and lived sociocultural realities.
3. Use a wide variety of instructional strategies that are connected to different learning styles.
4. Teach students to know and praise their own and each other's cultural heritage.
5. Incorporate multicultural information, resources, and material in subjects and skills taught in school.

Hutchison and McAllister-Shields conclude that CRT needs to be a foundational construct in higher education in which "faculty are prepared to offer relevant and inclusive educational experiences that build trust, increase student capacity, and leverages students' funds of knowledge as a cognitive scaffold for student success."

Important equity issues are also covered throughout ELE's Faculty Playbook, as it features numerous "Equity in Action" advice-oriented statements that are geared toward eliminating bias and promoting equal opportunities to achieve student success, regardless of social differences.

In addition, when incorporating digital learning into courses, educators might also want to consider using the Peralta Online Equity Rubric for making online course experiences more equitable under the criteria of technology access needs, commitment to inclusion, recognition of common forms of bias, helping students make connections, and utilization of universal design.

Most significantly, equity is a vitally important issue that must be sufficiently addressed to ensure that all students — regardless of racial, ethnic, or socioeconomic status — have an equal chance to succeed academically.

Equity in Action Statements in the Every Learner *Faculty Playbook* speak to actionable best practices, including:

- Clearly communicating with all students that you are available and interested in their success
- Valuing diversity and inclusion in your courses
- Monitoring course activity for bias
- Providing a variety of options for students to demonstrate their learning as well as to engage with each other and the instructor
- Ensuring that all course materials are inclusive and unbiased
- Expressing appreciation for diverse ideas and catalyzing a sense of belonging
- Creating a diversity and inclusion statement in your syllabus
- Allowing students to openly express their perspectives
- Acknowledging and supporting students' experiences, beliefs/values, and prior knowledge when designing and evaluating assessments
- Being mindful of technology issues that may arise

Creating an Accessible Learning Environment

Most institutions already attempt to meet accessibility requirements and equity issues. The digital learning environment might require more collaborative partnerships with accessibility or information technology staff. Follow accessibility guidelines published by your institution when newly designing or redesigning a course. Adhere to Universal Design for Learning principles if accessibility is a high priority.

There are several important websites that provide detailed information about accessibility guidelines, including:

- WebAIM's web accessibility guide
- The Sloan Consortium's Accessibility Toolkit
- The American with Disabilities Act's (ADA) Requirements: What are They and How to Meet Them
- WC3's Web Content Accessibility Guidelines Overview

As noted in a 2017 EDUCAUSE Review article, *The Section 508 Refresh and What It Means for Higher Education*, Section 508's original intent has been revised over time to provide information and communication technology (ICT) accessibility requirements. As explained in the article:

> Information and communication technology is considered accessible if it can be used as effectively by people with disabilities as it can by those without. Comparable access to information must be provided, taking the needs of all users and learners into account. True accessibility provides for not just the sightless and the hearing-impaired but also the color blind, those prone to seizures, and people with physical limitations that require keyboard navigation rather than the use of a mouse.

Ensuring Students are Adequately Trained and Supported

EDUCAUSE outlined support issues for students under the following categories: device access, LMS use, LMS training, and learning environments preferences. The majority of students at both two-year and four-year institutions have smartphones and laptops. Much smaller percentages own tablets, desktops, and hybrid devices.

Many students are unfamiliar with LMS platforms, and even those who are familiar with using an LMS may not be able to easily navigate their institution's specific LMS. Because of this, campus IT support systems could become overburdened with the task of providing support to students who need significant help with navigating through their online courses, especially first-year students who have never taken higher education online courses in the past. In addition to advising students who need assistance with acquiring a reliable device, faculty should know what support services are available to inadequately prepared students who could use training in how to navigate through and understand the key features and functions of an LMS.

In addition to LMS training, an institution's virtual support services are vitally important. The priority for academic leaders is to provide faculty with the tools and vision to improve courses. As the pandemic made clear, that is often not enough. Integrated student support models that might be successful on the ground struggled to provide adequate virtual support for students. The project team must design a process where academic and non-academic support is coordinated and available online. Learning from high-quality online institutions is critical. Even if the student population you serve is primarily residence-based, the expectation, post-pandemic, will be that institutions provide adequate virtual support that is student-centered.

Providing ample, strategic, easy-to-access virtual online student services and resources stimulates more engagement and can improve retention rates. *University Business* magazine listed ideas and best practices for supporting online students. Two model virtual student services websites were cited: Florida Atlantic University's portal and SUNY's online support services help desk, which includes a knowledge base that features answers to some of the help desk's most commonly asked questions. MDRC publications has a 2020 issue focus on *Supporting College Students Remotely*, in which

Rebekah O'Donoghue and Alyssa Ratledge suggest that institutions furnish faculty and staff with tools that cultivate relationships with students, highlighting that "consistent outreach from coaches or advisers is especially effective at helping students succeed."

Also see an EDUCAUSE Review article headlined *Online Student Services: What, Where, Who, When, How, and Most Importantly, Why*. For starters, it notes that on-campus and online student services should be offered in an equivalent fashion.

Much has been done to build better student-first redesigned models. For example, work related to guided pathways by the Community College Research Center identifies the collaborative processes that need to be in place for students enrolled at two-year institutions to have more success. The steps include

- laying the groundwork for whole-college redesign,
- introducing guided pathways to the college community,
- supporting collaborative planning and implementation, and
- sustaining and institutionalizing student success reforms.

Many of these reforms are also taking place in four-year institutions. For example, see APLU's *Guided Pathways Model at Access-Oriented 4-Year Institutions: A Student Centered Approach to College Access and Success*. For academic administrators working at the course level, these holistic and institution-wide approaches may seem daunting, but they ought to model what the project team should consider beyond the course.

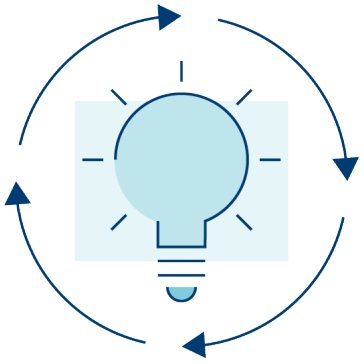
Too few of these projects share the coordination of data and how to integrate support throughout. These coordinated care models would ideally begin to find ways to let other services know where to target student support. For example, could supplemental instruction or tutoring have a view of student progress available in digital tools like adaptive courseware or an LMS dashboard that would allow them to both listen to student issues and see academic progress? With this in mind as part of continuous improvement, the project team can optimize student support to target student interventions more effectively, especially for equity populations.

Conclusion

Academic administrators' responsibilities for student success have grown substantially over the last decade. Not enough has been published to provide guidance and resources on how to engage in this new collaborative process. This guide is not meant to be an instructional manual. Instead, it is meant to provide leaders with specific information that can be tailored to meet the needs of the students they serve, and, just as importantly, lead discussions where they become the voice for improved equity for Black, Latinx, Indigenous, poverty-affected, and first-generation students.

The pandemic, while still very much driving the need to maintain instructional continuity, should also be used to leverage a collaborative change management process where first-year, high-enrollment, and gateway courses are redesigned to improve student success. We do not have every answer on how to improve instruction, but we have learned much from work on evidence-based teaching practices, effective technology, and design principles that are putting in place a collaborative change management process that recognizes continuous improvement as not something done annually or during a program review, but consistently and constantly.

Academic administrators must also recognize that this is a very new process to faculty. Faculty need support and tools to provide better instruction. Not all approaches work equally well in all disciplines, so engage in dialog but be insistent on improving student success.



Appendix A: Administrator's Checklist

The following checklist was created as a quick guide to help academic administrators make important decisions during these unprecedented times and well into the future.

TEAM BUILD

- ✓ Build a sophisticated team of campus community members who are recognized early adopters and exemplars of digital teaching and learning tools and pedagogies. Put together an agile, committed, and collaborative team of individuals who fully understand what it takes to teach effectively in the various types of flexible teaching and learning modalities.

- ✓ Establish a sound and reliable communications strategy by holding regular meetings with team members. Be accessible and listen to your team's ideas and concerns.

PROJECT MANAGE

- ✓ Be prepared for another possible disruption of in-person teaching and learning in the event of recurring infections. Build virtual connectedness among your team to address such possible disruptions.

- ✓ Consider project management approaches and tools that can help manage different aspects of course conversion execution.

PRIORITIZE FOUNDATIONAL/GATEWAY COURSES

- ✓ Have a continuous improvement plan that focuses on sustaining enhancement of foundational/gateway courses that have relatively high DFW (grade of D or F, or withdraw) rates.

SUPPORT FACULTY WITH EVIDENCE-BASED DESIGN

- ✓ Take full advantage of your institution's instructional development and online learning production support services.

- ✓ Put a plan in place for engaging faculty in decision-making processes and coordinate your efforts by providing essential actionable data, internal and external benchmarks, consistent faculty time management strategies, communication strategies, and faculty incentives and professional development.

DEVELOP FLEXIBLE LEARNING ENVIRONMENTS

- ✓ Consult with instructional designers, academic development professionals, and online administrators and support office staff to help with the construction of high-quality learning experiences within the fully online, hybrid/blended, hyflex, and classroom-based digital learning/ technology-enhanced learning modalities.

SEEK ACADEMIC TRANSFORMATION OPPORTUNITIES AND LESSONS LEARNED

- ✓ Understand how technology and effective data analysis can create new, transformational opportunities that can raise everyone's expectations for delivering high-quality, long-lasting flexible learning environments.

CONSIDER ADOPTING PROMISING COURSE MODELS AND INSTRUCTIONAL STRATEGIES

- ✓ Check if any foundational/gateway courses, in particular, could be enhanced through the adoption of active + adaptive courseware and pedagogies that are geared toward maximizing mastery of learning objectives and course content through a personalized learning approach.

UNDERSTAND INEQUITY ISSUES THAT ARE SERIOUSLY AFFECTING STUDENTS

- ✓ The COVID-19 pandemic has illuminated growing health and social disparities, economic difficulties, and other social problems among underrepresented students that will persist beyond the pandemic. Subsequently, there has been increased awareness of student inequity and the longstanding challenges that have existed in higher education. These issues typically center on two important factors: race and socioeconomic status.

CREATE ACCESSIBLE LEARNING ENVIRONMENTS

- ✓ Understand accessibility requirements and equity issues. The digital learning environment might require more collaborative partnerships with accessibility or information technology staff. During the design process, be sure to use universal design principles or at minimum the guidelines at your institution to meet those principles.

ENSURE STUDENTS ARE ADEQUATELY TRAINED AND SUPPORTED

- ✓ As the dramatic increase in online courses takes place, the capacity to support students technically and academically also dramatically increases. Know how your institution can ensure that all learners are adequately supported beyond the basics of having sufficient access? What kinds of resources and capacities, including virtual services, are needed to support students at the level of scale required today?

Appendix B: Courses that Require a Physical Presence

Many disciplines require a physical presence in a variety of courses to meet graduation requirements. These include such programs as dance and theater; health programs with clinicals, practicums, and certifications; STEM programs where students practice research and experimentation in special laboratories; and workforce development programs related to truck driving, cosmetology, the culinary arts, and hotel administration. To learn how classes that feature labs or other in-person requirements can be converted to an online modality, check out the University of Central Florida (UCF) Virtual and Remote Labs which is a comprehensive inventory of tools and platforms available for educators. UCF defines virtual labs as those that students can access online. These labs virtualize or simulate experiments. Remote labs are defined as those that enable faculty and students to access relevant equipment and computers online at a distance. To help with enabling virtual labs, UCF has invested in a subscription to JoVE Science Education, a producer of science videos and demonstrations.

For those who would like to record their own labs, UCF's Center for Distributed Learning Teach Online site offers *A Short Guide to DIY Videos*, which offers the following advice:

- Write a script for your video.
- Keep it casual. Conversational language is more engaging for students.
- Keep it short.
- Gather additional materials, such as props, pictures, charts, and graphs, that can add more appeal.
- Find a prime recording location that considers appropriate space, audio, and lighting.

Appendix C: Online Program Management

According to EDUCAUSE, online program management (OPM) is the practice of entering into contracts with third-party vendors who can help with the development of online learning courses and programs. Institutions with a lack of financial resources and staff to effectively launch online learning environments will bridge that gap by contracting with an OPM who can provide such services as technological infrastructure, enrollment marketing expertise, back-office support, and instructional design assistance. Such contracts typically have a profit-sharing financial structure that ultimately helps institutions jump-start a sophisticated online presence in relatively short order, as the OPM generally shoulders most or all of the upfront costs of program development. For examples of OPM contracts at 79 public colleges and universities, see a Google drive document created by Taela Dudley in September 2019.

In *The Evolution of Online Program Management*, published in *UNBOUND*, by the University Professional and Continuing Education Association (UPCEA), the growth of OPM is identified as a sea change in online program management at colleges and universities across the country. As noted in the article, according to research conducted by Eduventures, "the number of institutions that have contracted with OPMs grew more than 130% between 2011 and 2015." While OPM contracts are utilized in everything from certificate programs to associate degree programs to doctorates, "their sweet spot is in the realm of master's degrees — particularly in programs that readily scale online, such as nursing, education, business administration and, more recently, data science and analytics."

University Ventures published an in-depth report in 2018, co-produced by George Mason University and Alpha Education, that featured numerous case studies of effective OPM partnerships, titled *P3.EDU: A Directory of Leading Companies Partnering with Colleges and Universities for Strategic and Financial Impact*. Broad categories of OPM listed in the report (with subcategories and case studies under each category) include expanding reach and access, improving student success, increasing physical capacity, and leveraging current access. For example, under the improving student success data analytics subcategory, an OPM partnership case study between Civitas Learning and the University of South Florida (USF) was presented. USF enrolls a high percentage of underrepresented minorities and poverty-impacted and first-generation students.

The institution operates within a performance and accountability matrix approach that includes more than 100 key metrics related to performance-based funding goals. In other words, USF uses data to help guide its academic performance. The metrics suggested that USF boost its ability "to do more to get real-time actionable data to counselors and teachers in direct contact with at-risk students." Civitas was contracted to implement its Student Success Platform "to empower policy makers, administrators, advisors, and faculty with more current and precise information, enabling more specific interventions on students' behalf." Data garnered from the Civitas implementation showed that "USF hit its 90% first-year retention target. Now the university is on track to also surpass the 70% six-year graduation rate. In another example, this one under the improving student success coaching/mentoring sub category, the online campus of Penn State University contracted with InsideTrack to implement a coaching program for inquiry conversion and for creating a strong early-start coaching program for its new students. "Penn State's investment in InsideTrack's coaching Online Program Management services resulted in increased enrollment and better-prepared students. The contract ultimately brought about a 40% improvement in enrollment conversion."

Despite all the positive press about OPMs, they do come with a good deal of controversy. The ELI OPM dispatch also reported on some of the known downsides when engaging in this kind of arrangement, noting that "some observers see the trend toward OPM as a slippery slope to the commercialization of higher education and the erosion of institutional control of academic missions." Lines can be blurred around academic freedom, program direction, and ownership of intellectual property. For some institutions, however, contracting with an OPM may be the only way for them to stay competitive. Institutions that may be somewhat lacking in educational technology software, support, and infrastructure can definitely benefit from establishing relationships with proven, professional, third-party external support services. For example, institutions can use these relationships to engage in case-making to expand lessons learned and best practices realized from external resources by sharing with constituents internally.

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