Planning for a Blended Future

A Research-Driven Guide for Educators

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About the Organizations

The National Research Center for Distance Education and Technological Advancements (DETA) was established in 2014 by funding from the U.S. Department of Education (ED), Fund for the Improvement of Postsecondary Education (FIPSE) at the University of Wisconsin-Milwaukee (UWM). The objective of DETA is to promote student access and success through evidence-based digital learning practices and technologies. Specifically, DETA identifies and evaluates instructional and institutional practices through rigorous research with particular interest in underrepresented groups of students. University of Wisconsin-Milwaukee (UWM) led a curricular redesign effort, the University of Wisconsin System Hybrid Course Project in 1999 exploring hybrid instructional practices and faculty development across and with support of the University of Wisconsin System. This work was later continued with support from the OLC Blended Localness Initiative. UWM now offers over 40 blended and online degree programs.

The Online Learning Consortium (OLC) is a collaborative community of higher education leaders and innovators dedicated to advancing quality digital teaching and learning experiences designed to reach and engage the modern learner — anyone, anywhere, anytime. OLC inspires innovation and quality through an extensive set of resources, including best-practice publications, quality benchmarking, leading-edge instruction, community-driven conferences, practitioner-based and empirical research, and expert guidance. The growing OLC community includes faculty members, administrators, trainers, instructional designers, and other learning professionals, as well as educational institutions, professional societies, and corporate enterprises.
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Every Learner Everywhere (Every Learner) 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 and Indigenous students, poverty-affected students, 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 www.everylearnereverywhere.org, email everylearner@wiche.edu, or call (303) 541-0206. Follow Every Learner on Twitter @EveryLearnerNet.

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Introduction

"*Blended learning
is our future.*"

(Joosten, Barth, Harness, & Weber, 2013, p. 96)

While many of us through the years have experienced and witnessed the potential of blended (or hybrid) learning in the future of postsecondary education, the promise has never been more realized than in the world's response to a global pandemic and the urgency for academic continuity through emergency remote instruction that required online learning technologies to mix or replace students' onsite experience with a new online experience. Educators persevered through a global pandemic, a collective trauma of our lives, learning more than ever the weaknesses of technology, the strengths of togetherness, and the need for thoughtful and inclusive strategic planning. While the challenge, disappointment, and devastation is not without note, the possibilities for the strategic transformation of the future of higher education through blended learning are abundant. By thoughtfully and strategically considering design and technologies to create meaningful connectedness across distance through active learning pedagogies, real learning can be achieved.

Why blended learning, and why now?

Blended learning, sometimes known as hybrid learning, is traditionally thought of as a blend of media or technologies allowing for a blend of modalities of learning, face-to-face and online, potentially leading to a reduction in face-to-face seat time in class. Hrastinski (2019) refers to blended learning as an umbrella term. Prior to the pandemic, blended learning diffused across the nation and the globe in the start of the 21st century with documented growth and gains in popularity (see Alexander, Ashford-Rowe, Barajas-Murphy, Dobbin, Knott, McCormack, Pomerantz, Seilhamer, & Weber, 2019; Allen, Seaman, & Garrett, 2007; Picciano, Seamen, Shea, & Swan, 2012). Many notable blended learning researchers describe blended learning as the "new normal" (Dziuban, Graham, Moskal, Norberg, & Sicilia, 2018). As recent as the beginning of 2020, blended learning was identified as a significant digital innovation trend (Joosten, Lee-McCarthy, Harness, & Paulus, 2020).

While the pandemic pushed for students to be distanced from each other and from campuses, an array of technology solutions were quickly adopted with minimal time for thoughtful design resulting in often coincidental mixed models of learning resembling, in part, hybrid and blended learning models. Blended or hybrid learning in the context of the pandemic was a way for students to have multiple course delivery options to stay safe from the virus, yet this was not without concern, as many noted investment in technology, logistical and technological challenges, increased preparation time, and students' preferred mode of learning (e.g., Milman, Irvine, Kelly, Miller, & Saichaie, 2020, McMurtrie, 2020). Moving forward, thoughtful, calculated planning of courses and the reconceptualization of hybrid and blended learning course models implemented on campuses could occur.

With the arrival of a global health pandemic in 2020, the transition of courses to blended and online learning happened overnight for some universities and colleges. While the **Delivering High-Quality Instruction Online in Response to COVID–19 Faculty Playbook** released in 2020 provides readers concise guidance on course design and teaching in response to the pandemic requirements, this resource, *Planning for a Blended Future: A Research-Driven Guide for Educators,* provides information **to guide learning and instructional planning processes to prepare educators for the near term post-inoculation.** With evidence from decades of research and experience from instructional practice, there is pertinent information that can drive learning and instructional planning that is rooted in rigorous empirical research and collective institutional knowledge.

> " **Blended learning, sometimes known as hybrid learning, is traditionally thought of as a blend of media or technologies allowing for a blend of modalities of learning, face-to-face and online, potentially leading to a reduction in face-to-face seat time in class.**"

The purpose of this guide

This resource is a collaboration among the National Research Center for Distance Education and Technological Advances (DETA), the Online Learning Consortium (OLC), and the Every Learner Everywhere Network. It is designed to serve as a resource for educators — faculty, instructors, instructional staff, instructional improvement staff, instructional designers, learning experience designers and developers, technological support staff, and other stakeholders — to guide strategic planning for blended learning courses and programs. The guide identifies factors and techniques to be considered in responsive planning and redesigning courses and programs for post-inoculation education in institutions of higher education utilizing the best of both online and onsite instruction to meet the needs of students transitioning from remote instruction and the rapid technological infrastructure investments (e.g., video conference and broadcast solutions). The guide moves beyond getting started and works to ensure quality in blended learning by implementing research-driven techniques to positively influence student outcomes while examining lessons learned from the emergency remote instruction during the pandemic.

"This guide is designed to serve as a resource for educators — *faculty, instructors, instructional staff, instructional improvement staff, instructional designers, learning experience designers and developers, technological support staff, and other stakeholders* — to guide strategic planning for blended learning courses and programs."

Executive Summary

Conceptualizing what blended learning (hybrid learning) looks like on your campus is an important step in ensuring quality learning for your students. Identifying a blended model for your courses and programs that is derived from research-based, effective practices with documented improvement of student outcomes is critical. Since many of you have had to quickly launch technology-driven blended options, it is time to strategically plan for a blended model for your campus, programs, and courses. *Planning for a Blended Future: A Research-Driven Guide for Educators* identifies factors and techniques to be considered for responsive planning and redesigning of courses and programs for post-inoculation education in institutions of higher education. This guide moves beyond getting started with blended learning to help educators realize the best of online and onsite instruction and implement research-driven techniques to positively influence student outcomes.

Who you are

Planning for a Blended Future is designed to serve as a resource for educators — faculty, instructors, instructional staff, instructional improvement staff, instructional designers, learning experience designers and developers, technological support staff, and other stakeholders — to guide strategic planning for blended learning courses and programs.

Key takeaways

By intentionally developing your research-based knowledge about blended learning and committing to purposeful reflection and actions, you can create high-quality blended learning experiences for students in your institution's courses and programs. *Planning for a Blended Future* provides foundational knowledge about blended learning, nurtures a pedagogical shift in thinking, fosters reflection and reframing about blended learning in courses and programs, and provides resources to help you plan for your blended future.

> **"*Planning for a Blended Future: A Research-Driven Guide for Educators* moves beyond getting started with blended learning to help educators realize the best of online and onsite instruction and implement research-driven techniques to positively influence student outcomes."**

Overview

INTENTIONAL KNOWLEDGE

Define Blended Learning

Blended learning is instruction that blends technical, temporal, spatial, and pedagogical dimensions to create actualized learning.

Nurture the Pedagogical Shift

Thinking strategically about the blend and learning outcomes, faculty often see their teaching challenged in a whole new way. They must consider their role to be more than that of information suppliers in order to meet the needs of their students through various modalities.

INTENTIONAL ACTIONS

Reconceptualize the Blend

- ☑ Consider student-centered, active learning pedagogies.
- ☑ Focus on closing the loop through the integration of learning environments.
- ☑ Scaffold the student experience through the course.

Plan for Your Blended Future

- ☑ Conduct your own evaluation on your campus.
- ☑ Rely on solid design principles and structure to scaffold students through their learning experiences.
- ☑ Enhance social interactions and build a community of learners.

Promise of the Blend

> " **Not all blended learning is equal. Although the different definitions of blended would make you think that it is just about putting some of the course activities online...***the secret is in the blend.***"**
>
> (Joosten, 2015)

☼ KEY IDEAS

1 Blended learning allows for strategic integration — an amalgamation of face-to-face and online interactions — using a range of technologies, instructional approaches, and pedagogical practices.

2 The strategic thinking needed in blending a course through instructional design allows faculty and instructors to carefully align the learning objectives with the instructional modality and technologies that are most effective for students.

3 This strategic integration allows for greater quality than a random mix and match of activities.

Research historically has indicated that blended learning can have a positive impact on student outcomes including **increasing student satisfaction** (Dziuban & Moskal, 2001), **improving student learning and success** (Dziuban, Hartman, & Moskal, 2004), and **increasing retention and access** (Picciano, 2006). Picciano (2006) explains that "well-designed blended learning environments have the potential of increasing access to a higher education because they improve retention" (p. 100). Research has also found that blended learning is the **more effective instructional approach** when compared to online and face-to-face instruction (Dziuban, Graham, Moskal, Norberg, & Sicilia, 2018; Galanek & Gierdowski, 2020; Gavassa, Benabentos, Kravec, Collins, & Eddy, 2019; Means, Toyama, Murphy, Bakia, & Jones, 2010). For example, a popular meta-analysis funded by the U.S. Department of Education reported that "[i]n recent experimental and quasi-experimental studies contrasting blends of online and face-to-face instruction with conventional face-to-face classes, blended instruction has been more effective, providing a rationale for the effort required to design and implement blended approaches" (Means, Toyama, Murphy, Bakia, & Jones, 2010, p. xviii,). Also, research indicates that blended learning can lead to **better outcomes** for students that are racially minoritized (e.g., Broeckelman-Post & Pyle, 2016; Gavassa, Benabentos, Kravec, Collins, & Eddy, 2019). Blended learning can be efficacious.

- Improvement in access, learning effectiveness, instructional effectiveness, and satisfaction.

- Increased student outcomes, such as learning, retention, and success.

- Better outcomes for groups of students of interest, such as racially-minoritized.

Blended learning offers faculty and instructors within institutions of higher education an opportunity to benefit from multiple modes of instruction and use of an array of digital media and technologies inside and outside of class. Importantly, blended learning allows for the strategic integration of onsite — often referred to as **face-to-face (F2F)** — and online interactions, using a range of technologies, instructional approaches, and pedagogical practices. The integration is special. As Picciano highlights (2016), "[t]he word 'blended' implies a mixture more so than simply a combination of components...when two cans of different colored paints are mixed, the new paint will look different than either of the original colors" (p. 6). Thompson (2021) referred to blended using a general systems reference in that the whole (meaning a blended course) is greater than the sum of the parts. Hrastinski (2019) describes quality conceptualization of blended learning as the F2F and online components could be integrated in a thoughtful, complementary way. The strategic thinking needed in blending a course through instructional design allows faculty and instructors to carefully align the learning objectives with the instructional modality and technologies that would be more effective for the students with the opportunity to still come to campus or meet in real time (e.g., synchronously) when needed. This strategic integration allows for something greater and better than a random mix and match of activities — **quality.**

This integration was often missed during the pandemic's emergency remote instruction calling for hybrid and online modes of learning yet is so often the key in blended learning (Joosten, 2015). It was noted early in the arrival of blended learning that moving things to the web, using a course website, or teaching at a distance is not blended learning (Garnham, Kaleta, & Sudzina, 2003). There is a tendency for faculty and instructors to not want to redesign or give up any material from their face-to-face course and simply add additional online content and activities to an existing course (Aycock, Garnham, & Kaleta, 2002; Kaleta, Skibba, & Joosten, 2007). Educators and students have felt the pains of the rush to emergency remote instruction and quick technosolution approaches that may lack design, integration, and engagement. Like many educators in response to the pandemic that attempted hyflex options, or here or there options, Zydney, Mckimmy, Lindberg, and Schmidt (2018) reported that one of their lessons learned in their experience was to integrate into course design. The need to rethink these areas is evident in the previous research as well as the quick and expedient response needed to move to emergency remote instruction. In preparation for post-inoculation courses and programming, blended learning that is thoughtfully designed and integrated could be contemplated.

> **"Students' interaction with content, the instructor, and each other has new possibilities in designing a blended course."**

Blended learning offers numerous possibilities in teaching and learning. The use of technologies allows learning to overcome limits of time and space, moving beyond traditional classrooms and course scheduling, while also still allowing opportunities for face-to-face or real time interaction due to the advancement in media rich video technologies for class meetings and access to greater data bandwidth. Graham (2006) discusses the benefits of blended learning due to the ability to overcome these barriers, including improved pedagogy, increased access and flexibility, and increased cost effectiveness while noting the challenges of lecture as the predominant teaching strategy in higher education. Clayton, Blumberg, and Anthony (2018) found that while students perceive traditional environments as more engaging and online environments as more convenient, they reported that blended or hybrid environments are both aligned with their learning and convenient. Blended has pedagogical advantages and real life scheduling flexibility which students appreciate.

Students' interaction with content, the instructor, and each other has new possibilities in designing a blended course. At a rudimentary level, didactic, instructionist, or teacher-centered approaches to delivering content requiring foundational level cognitive processes for knowledge (e.g., memorization), such as lectures, demonstrations, and texts, can be digitized and delivered online at a distance allowing students more independence and flexibility as to when and how, or how often, they interact with the content. Beyond the flexibility, it allows for repetitive viewing and potentially for annotation of text or transcripts of any rich media, such as audio or video, to enhance memory and retention of material. These content delivery objects can also be live, or synchronous, as a broadcast using video technologies, (e.g., Zoom, Microsoft Teams, Blackboard Collaborate Ultra, Cisco Webex) which is a resurgence of an instructional approach from the late 20th century that used antiquated technology (e.g., CD, radio, television) during the rise of distance and online education (Joosten, 2017). Yet, it is important to resist replicating instructionist, face-to-face approaches, and to keep digital media recordings brief and to the point to enhance retention and learning. Harmoniously, the onsite environment can be used for learning objectives that can benefit from the richness of and real-time face-to-face or onsite interaction amongst peers, or higher-order, affective and behavioral learning that requires student to apply didactic knowledge and experience a phenomenon to increase not just the cognitive, but the affective and behavioral realms of learning, such as real-time hands-on labs (e.g., technical learning, wet labs) or collaborative learning experiences (e.g., team-based learning, role plays), while also creating opportunity for meaningful engagement and social involvement.

Technologies not only alter a student's interaction with content, but they also can provide students alternative ways to communicate and work with each other and their instructors that are advantageous pedagogically allowing for greater academic and social involvement. As we move forward from a year of emergency instruction to post-inoculation, it is now time to rethink the mixing and matching of technology solutions to thoughtfully designed and well-integrated courses and programs that can capture the essence of the blend through engaged learning that positively influences student outcomes.

PLANNING FOR A BLENDED FUTURE: NEXT STEPS

1 Gather research from your field that shows a positive influence of blended learning on student outcomes.

2 Rethink your course's learning objectives in a strategic way to maximize the opportunities of the learning environment. Determine which objectives can be accomplished considering a student's location (onsite or online) and time (live and in real-time or at a student's own pace over time).

Re/defining the Blend

> " **Blended learning is instruction that blends** *technological, temporal, spatial,* **and** *pedagogical* **dimensions to create actualized learning."**

☼ KEY IDEAS

1 Blended learning is an umbrella term that requires some ambiguity.

2 Blended courses are a blend of onsite and online, with flexibility in consideration of when and where, with a move towards student-centered, active learning pedagogies.

3 Blended programming is when academic programs are designed to strengthen a college or university connection to its core constituencies.

As colleges and universities across the globe moved to emergency remote instruction and implemented academic continuity plans, blended learning and many versions of it started revealing itself on campuses. While several scholars spent a decade of meaningful conversions at conferences and in hallways clarifying terms and a taxonomy of blends, including hybrid, hyflex, flipped, and others, the term has become even more complex as many instances of what was called blended during the pandemic of 2020 was more a bespattering of solutions. To better conceptualize blended learning at the course and program levels, we will discuss traditional definitions briefly and present a more nuanced definition in consideration of the pandemic and emergency remote instruction. While there isn't necessarily a common definition, there are some common characteristics across all modalities that we can illustrate for a shared understanding.

Historical definitions of blended courses

Traditionally, blended learning, which was sometimes called hybrid learning, was simply a combination of face-to-face and online. An early definition by Garnham and Kaleta (2002) reported, "[h]ybrid courses are courses in which a significant portion of the learning activities have been moved online, and time traditionally spent in the classroom is reduced but not eliminated" (para 1; See *Figure A*). Allen and Seaman (September, 2003) referred to hybrid courses as a "[c]ourse that is a blend of the online and face-to-face course. Substantial proportion of the content is delivered online, typically uses online discussions, typically has some face-to-face meetings" (p. 6). Graham (2006) defined it as "[b]lended learning systems [that] combine face-to-face instruction with computer-mediated instruction" (p. 5) and expands greatly on the convergence of two archetypal learning environments with critical dimensions of interactions. The influence of computer-mediated communication (CMC) research in blended and online learning is notable (see Hiltz, & Turoff, 1978; Dziuban, Graham, Moskal, Norberg, & Sicili, 2018). Moving beyond the influence of face-to-face (F2F) and CMC comparisons, Thompson (2021) advances the blended course concept by presenting a visualizing a 3D model with the specific key components of a course design (content, interaction, and assessment), the face-to-face and online modalities, both technology enhanced, while also adding the unplugged component to symbolize the work happening offline and outside of class (See *Figure B*).
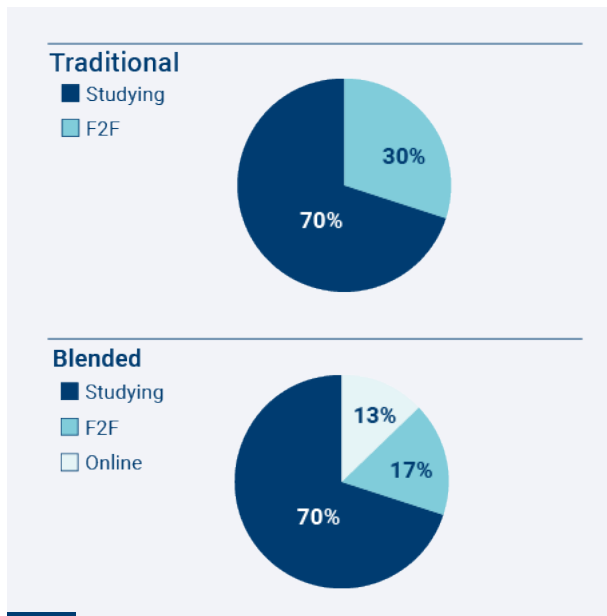

FIGURE A. Joosten's visualization of a blended course with a replacement of face-to-face seat time adapted from her syllabus explaining to students the differences.
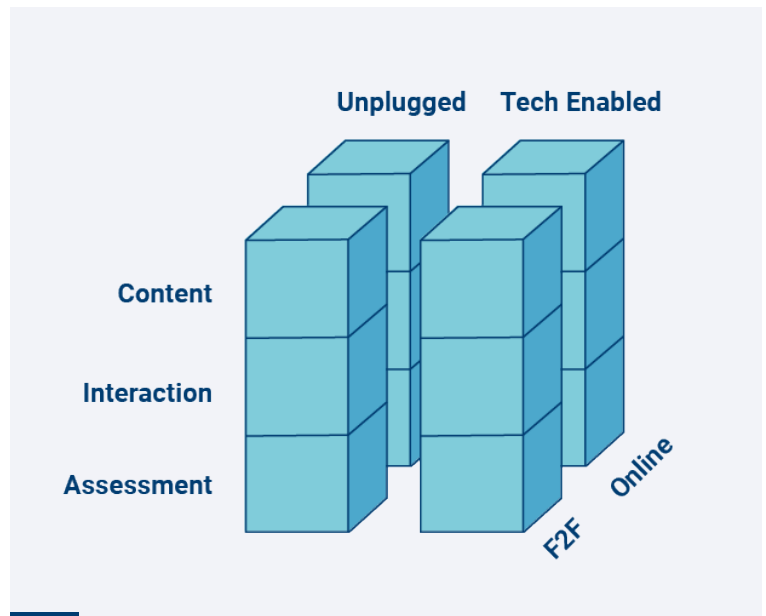

FIGURE B. Thompson's 3-D visualization of a blended course. Adapted from Thompson, K. (2015). Blended "Building Blocks" [digital image]. https://www.flickr.com/photos/drkelvinthompson/19201168160/

Collaborative and thoughtful definitions developed by groups of practitioners and researchers focusing on the pedagogical advantages arose as well (Godambe, Picciano, Schroeder, & Schweber, 2004), according to Picciano (2015), "the definition of blended learning [is]:

1. Courses that integrate online with traditional face-to-face class activities in a planned, pedagogically valuable manner; and

2. Where a portion (institutionally defined) of face-to-face time is replaced by online activity." (p. 8). See *Figure C*. This definition was developed at the first series of OLC Blended Learning Workshops in 2004 to 2005 (see Laster, Otte, Picciano, & Sorg, 2005; Picciano, 2006).

Since a portion of the course is online, the blended model allows for flexibility in learning. Also, it provides additional opportunities for instructors to meet their pedagogical needs. These conversations continued into the next decade at conferences and workshops (e.g., Sloan-C Localness Workshop, 2008, Chicago, IL; Sloan-C Blended Conference, 2012 and 2013, Milwaukee, WI; Sloan-C International Conference, 2013, Orlando, FL) and again this year (Joosten & Picciano, 2021; Thompson, 2021). Graham (2013) reported that literature's most common answers to what is being blended was online and face-to-face instruction, instructional modalities, and instructional methods. While many educators responded to the pandemic, the blend tended to be more technological than one that focused on instruction or pedagogy. The blend of technological and pedagogical dimensions in capturing the potential of blended learning is evident. Through the years, blended definitions are well documented in the literature (e.g., Dziuban, Graham, Moskal, Norberg, & Sicili, 2018; Hrastinski, 2019; Picciano, 2011; Vignare, 2007) as well as the argument for vagueness in definition (Graham, 2013).
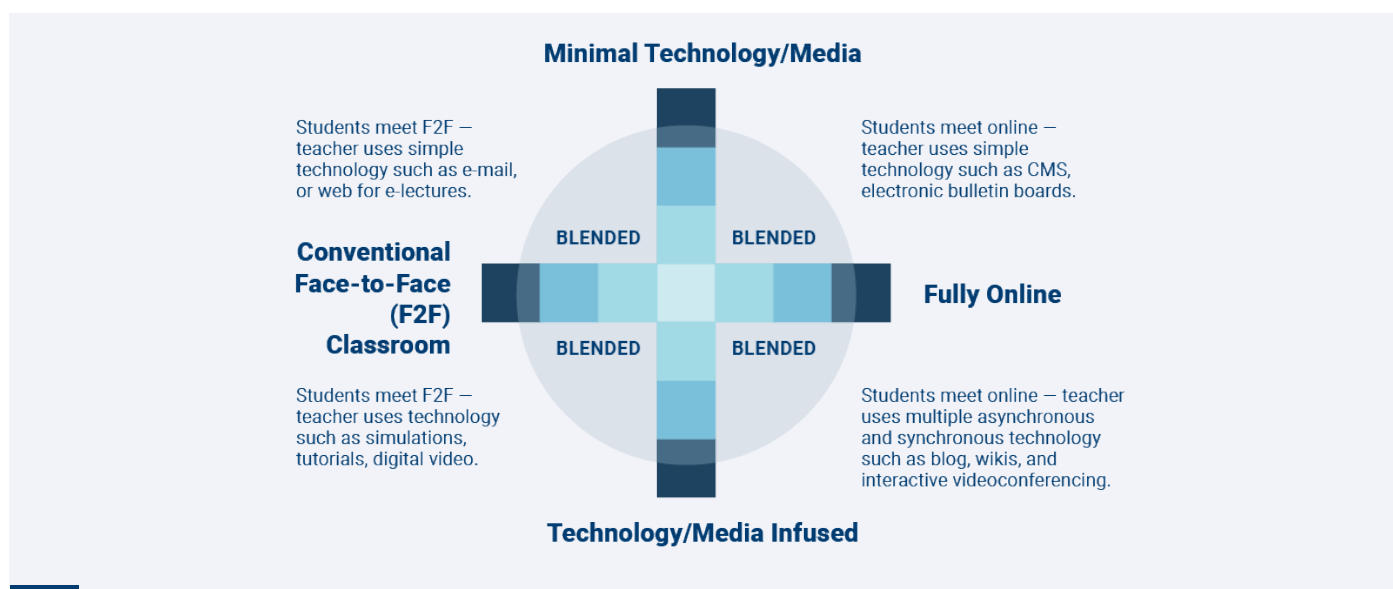

FIGURE C. Picciano's visualization of blended learning from the Sloan-C Blended Workshop.
Adapted from Picciano, A.G. (2015). Research in online and blended learning: New challenges, new opportunities. In C.D. Dziuban, A.G. Picciano, C.R. Graham, & P. Moskal (Eds.), Conducting research in online and blended learning environments: New pedagogical frontiers (pp. 1-11). Routledge.

Redefining blended characteristics

Currently, a number of models of blended learning (e.g., blended, hybrid, hybrid in-person, hybrid online, hyflex, online plus in-person, flipped) are being used in higher education (see Beatty, 2020; Farmer, 2020; Martin, Polly, & Ritzhaupt, 2020). At the core, there is some mix of technologies or an online component, maybe an on- and off-campus learning component, but there is sometimes also a scheduled time for meeting on campus or online. In part, the naming of these models were an attempt to differentiate the student experience from their traditional courses by providing descriptors of the course mode to manage expectations for students. The models do have some commonalities in the dimensions that can help us share a foundation in discussing them while also discussing dimensions that will increase the effectiveness of the model. The models contain four dimensions or dialecticals predominantly across most definitions (see *Figure D*). Therefore, **blended learning is instruction that blends technological, temporal, spatial, and pedagogical dimensions to create actualized learning.** Students feel they are successful when they actually learn and that does not always equate to grade and course completion.

Technological

no or lean technology   rich technology

Temporal

real time or synchronous   over time or asynchronous

Spatial

same or near space   remote or distant

Pedagogical

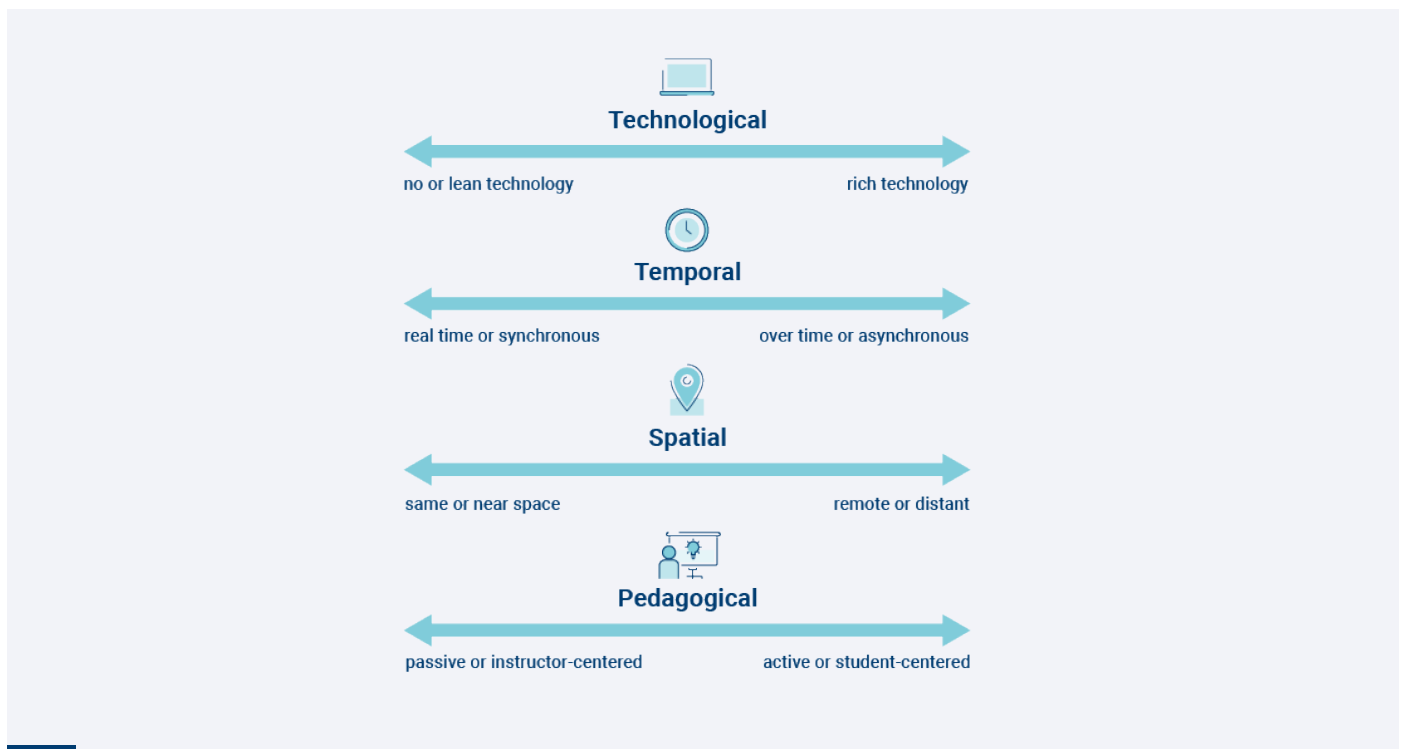passive or instructor-centered   active or student-centered

FIGURE D. Four-dialectical model of blended learning.

The four dialecticals of blended learning

Each learning experience has a place on these four dialecticals:

1. **Technological.** This dialectical illustrates the leanness or richness of the technology or media characteristics used in the course (see Daft & Lengel, 1986; Joosten, 2020). Some faculty and instructors may use more lean technologies in their courses such as text-based or oral communication (e.g., face-to-face, textbooks). Others may use more rich technologies such as recorded video (e.g., YouTube) or live meeting tools (e.g., Zoom, Microsoft Teams, Blackboard Collaborate Ultra, Cisco Webex).

2. **Temporal.** The temporal dialectical is reflective as to whether the students meeting in real time (synchronous) or working independently over time (asynchronous). Students may be meeting in real time onsite (e.g., for a lab or group work) or online using a web meeting tool (e.g., Zoom). Or, students may be working independently outside of class (e.g., online threaded discussions or quizzes) allowing more flexibility in when and where they complete their learning activities. During the emergency response to the pandemic, some referred to this model of blended that focuses on the temporal aspect as "bichronous learning," or using a blend of synchronous and asynchronous learning (Martin, Polly, & Ritzhaupt, 2020).

3. **Spatial.** This dialectical provides flexibility by allowing students to learn together or independently from each other providing greater access for students being able to move in time and space. Spatial and temporal dimensions of social processes are often tied together and are essential components in understanding and structuring human behavior (see Giddens, 1984) including teaching and learning.

4. **Pedagogical.** This is the most critical of dialecticals when examining the relationship to learning. As Picciano describes (2009), the course could be driven by pedagogy and not the technology. While often faculty and instructors are looking for solutions to supplement their instruction, it is the changing in the instruction and teaching itself to integrate more active learning pedagogies or ways of teaching that can positively influence student success. Each dimension can be approached with some degree of nuance based on the faculty or instructors' lived experience before and during the global pandemic informing their planning for the future of perfecting their blend for their course, their students, and their program. It often takes several semesters for educators to find the sweet spot of the blend that has the greatest positive relationship to student outcomes.

Each of these dialecticals is not fixed. The blended model that is designed will determine the right or left movement of the centralized lever on each dialectical depending on the requirements of the course and needs of the students and may be different based on the experience and comfort level of the faculty or instructor. For example, more traditional entry level post-secondary courses at mid- to large-size public institutions may find the marker on each dialectical more to the left prior to the pandemic (see *Figure E*). After the commencement of the pandemic, institutions and instructors made choices to move remotely and quickly where the levels may have moved more to the right on the technology and spatial dialecticals as courses were offered to students at a distance using a richer technology such as a video conferencing or a broadcast lecture solution as an emergency remote instruction (see *Figure F*). Although difficult to find in the research because failures are seldom reported, this model tended to lead to higher attrition and was replaced by many universities.

The blended model that shows evidence of positively influencing learning is one where there is a purposeful sliding of the marker (see *Figure G*) more to the right on most dialecticals or purposely using a varied technologies depending on the pedagogical task, using synchronous meetings when they are needed to resolve equivocality, or using more remote methods for greater flexibility. One factor that there has been success in this model at universities such as the University of Central Florida and the University of Wisconsin-Milwaukee is the dialectical of pedagogy and moving the marker away from instructor-centered approaches to more student-centered, active learning approaches.
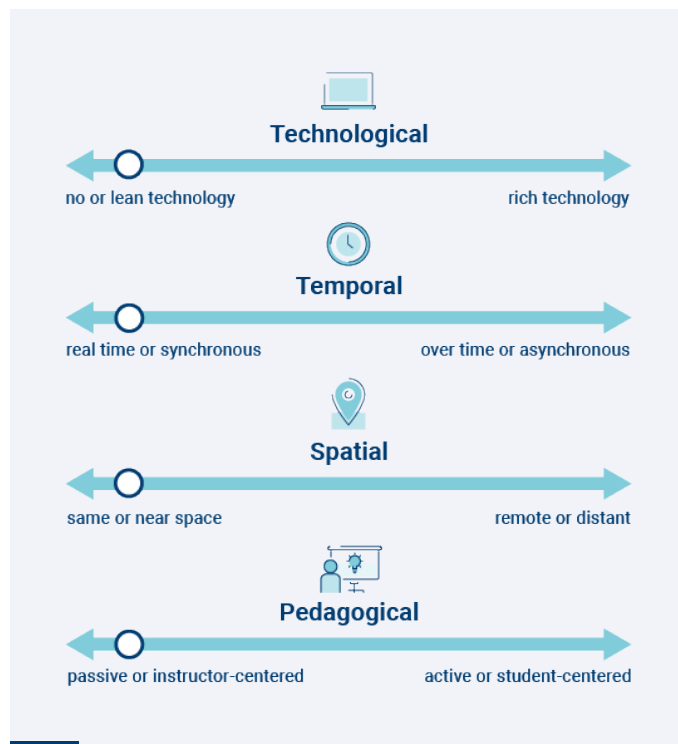

FIGURE E. Four-dialectical model of learning illustrating a traditional entry level course.
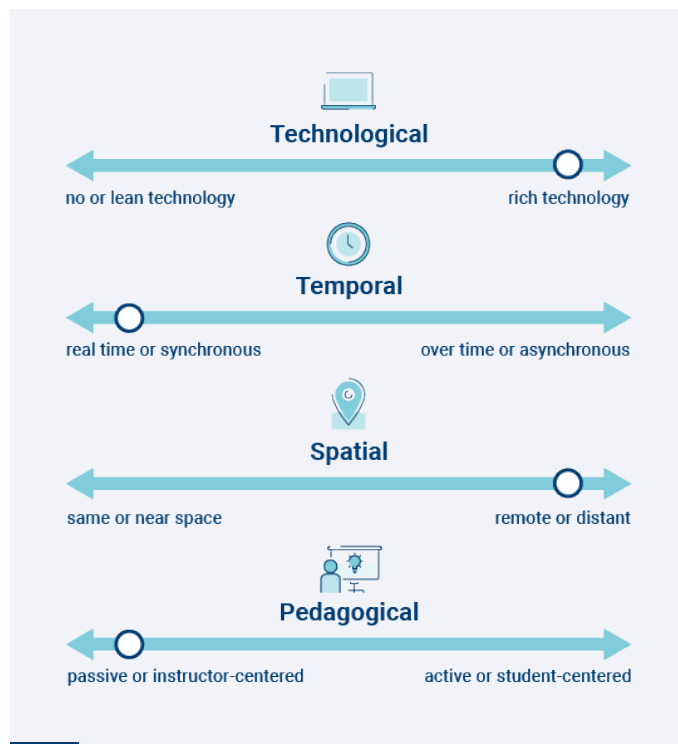

FIGURE F. Four-dialectical model of learning illustrating a instructor-centered remote course using synchronous video.

Instructionist approaches have been proven as less effective and slowly higher education is moving to more constructivist approaches (Joosten, 2019), yet as Graham (2006) reported, a large amount of higher education is still taught using this instructionist lecture-based approach. The instructionist approach was developed from the behaviorist approach of learning (i.e., stimulus and response), but researchers and educators know now that students are not empty vessels that we fill with knowledge. Previous experience could be considered as course experiences are designed to help students construct knowledge. Faculty and instructors must design and scaffold experiences for students in which they interact with the content, each other, and the instructor in order to achieve optimal levels of engagement and learn to do new things.
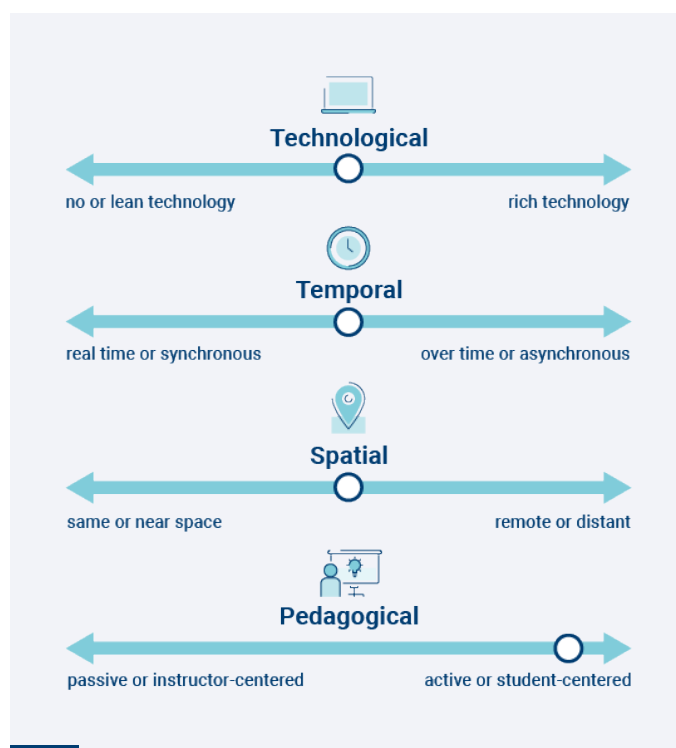
The many flavors of blends

FIGURE G. Four-dialectical model of active blended learning illustrating a mix of technologies, time, and space.

This definition is not all encompassing. There are other models that exist. For instance, Graham (2006) had four dimensions but examined fidelity and humanness rather than technology and pedagogy, and Shea (2007) discussed similar options in blended while also including the location of the courses as developed at the home institution or at another institution. While the blending of courses developed outside of the postsecondary institution in which a student was enrolled, such as Massively Open Online Courses or MOOCs, and within the curriculum or course design of a for-credit course is rare. Yet, the source of content, curriculum, or interactions may be a future consideration, especially considering the new subscription and licensing services from online learning providers of course materials that are already developed for faculty or instructor use (e.g., EdX). Some of them are offering a catalogue of course materials for your institution or system to which they subscribe to ease the digital content creation burden. Dziuban and Picciano (2015) in discussing the future of online and blended learning describe a reconciliation of the blended learning and MOOC models. Others are examining more innovative technologies in blended learning, such as adaptive learning technologies (Alamri, Watson, & Watson, 2020), augmented reality, virtual reality, and artificial intelligence (Dziuban & Picciano, 2021).

Additionally, Graham (2013) discussed other models of blended as well. These were the results of an initiative supported through the National Center for Academic Transformation and the PEW Charitable Trust that resulted in blended models that supplemented or replaced the traditional in-class meetings, while other completely eliminate the class meetings (e.g., emporium model) or offered a buffet of options including online materials and activities (which can improve success in large

enrollment and STEM courses). Some of these were recently revisited in response to the pandemic. Although the definition here is iterative and not exclusive as we have been trying to define blended and hybrid learning for two decades. For the sake of the discussion in this guide, these dimensions will help provide a common ground for strategically rethinking the blending of courses. There are many flavors of blends. Educators can reconsider the different elements of their courses and their program to determine what will work best for their students and continuously improve their courses through the duration of the term and in the following terms, while institution and program leaders can develop a standard definition that is or series of definitions that are right for their students.

Blended programs

How to define **blended programs** has garnered far less attention than the debates on how to define a blended course. However, consistent with the discussion of blended courses, there are lots of flavors and few standardized definitions. Like blended courses, there can be technological characteristics to be considered in developing a construct and definition of blended courses. Unlike the debates of synchronicity and pedagogy (i.e. art of teaching), blended programs tend to focus on the base definition that a percentage of the program is delivered at a distance, remotely, or online. Typically, a blended program does not mean that every course within the program is blended, but a blended program is defined as a program where students can complete a series of courses within the degree program where the courses may be delivered face-to-face, blended, or fully online. See *Figure H*. There is no requirement that all of the courses be designed in one mode, but the students take a blend of courses in different modes to complete a program. The instructional approach of these courses (self-paced to traditional lectures) are not necessarily considered in the definition. Yet, blended programming is not without challenge and could align with achieving institutional and student goals.
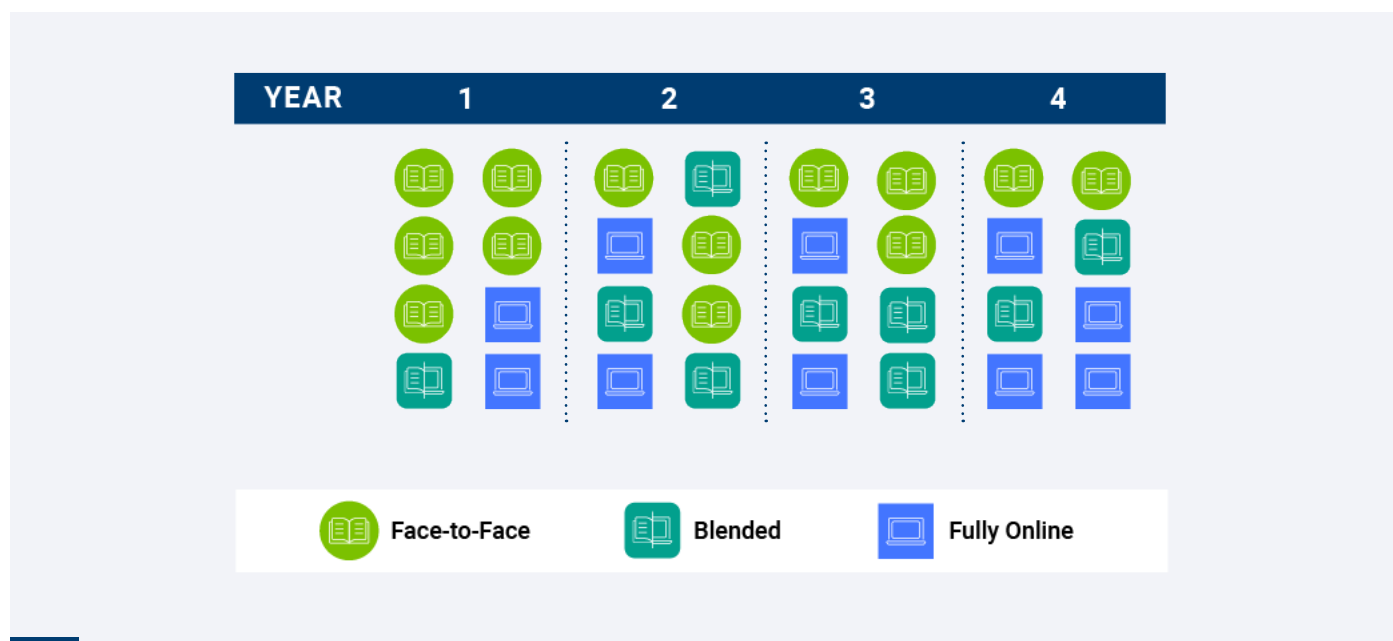

FIGURE H. Visualization of a blended program.

Like definitions of blended courses, there are a range of definitions and conceptualizations of blended programming depending on the goals. The OLC Blended Localness Initiative focused on developing programs providing a way to reach people who lived near the campus which was novel compared to the previous work in online learning that was a way to reach people who lived away from campus. Frank Mayadas, Alfred P. Sloan Foundation program officer, identified that blended programming helped universities give attention to their own local neighborhoods and reconceptualize urban areas with sizable populations that could benefit from a mix of online learning and face-to-face learning (Mayadas & Picciano, 2007).

> **"Blended programming can include academic programs that are designed to strengthen a college or university connection to its core constituencies."**

Blended programming can include academic programs that are designed to strengthen a college or university connection to its core constituencies. They can be full programs that reduce a portion of a student's travel time and transportation costs while enhancing student and faculty involvement. For instance, many of the programs that started as a localness program grew:

1. to attract those beyond the geographical scope of localness (e.g., Babson College);

2. to include other types of institutions including workforce and K12 institutions (e.g., Pace, UMass);

3. to provide greater life balance and reduce attrition (e.g., CUNY); and

4. to support programs with lab components and degree completion pathways (e.g., UWM). Blended programming has many conceptions and realizations to improve student life balance and their learning experiences.

While you hear terminology, such as blended instruction or blended education, all focus on behaviors or activities of instruction or teaching and learning. Often, these behaviors are structured through thoughtful design of courses, alignment of learning objectives with assessments and activities, including student interactions with content, their peers, and the instructor, and choice of technologies to best meet the needs of the activities and interactions. But, the pandemic pushed educators into an emergency response situation where technology solutions were implemented in short time frames sometimes to keep students at a distance for the sake of public health and safety. Moving toward the post-inoculation phase of the pandemic, faculty must continue to develop their skills as blended educators to become guides for students by intentionally and strategically using a variety of modalities to scaffold learning.

PLANNING FOR A BLENDED FUTURE: NEXT STEPS

1 Develop a cohort of faculty to examine the characteristics of blended learning and how these characteristics can be taken advantage of to improve instruction and student learning.

2 Have discussions with faculty and instructor peers within your program about how your methods of blended and hybrid instruction are addressing the areas of technology, time, space, and pedagogy.

3 Work within your program to design a blended program to strengthen your college or university's connection to its core constituencies, to improve flexibility and learning for students, and to support students' learning and life.

4 Work with faculty in your department to learn and understand how blended learning can help meet students' needs and provide solutions for problems of practice or challenges of the department and of students. Think strategically about the following questions: What are the problems or challenges our program faces? How can blended learning help us solve these problems or meet these challenges?

Reconceptualizing the Blend

> "When faculty begin thinking strategically about how they teach and what they want their students to demonstrate, a pedagogical shift occurs."

☼ KEY IDEAS

1 Designing courses to meaningfully integrate the different environments and temporal cadence (online and onsite, live and overtime) while incorporating an active learning approach can improve student outcomes in blended and hybrid courses.

2 Faculty must become guides for students and their engagement by intentionally and strategically using a variety of modalities to scaffold learning.

3 By designing and scaffolding blended courses effectively, faculty can avoid the common pitfall of course-and-a-half-syndrome, which occurs when the online portion of a course is tacked on, creating busywork for students.

Blended learning offers promise to improve postsecondary education and can take many forms and shapes to better meet students' needs and achieve student outcomes. Beyond definitions of courses and programs, there are key considerations in reconceptualizing blended learning that lead to a deeper understanding of what we mean when we talk about blended learning, and what can have a positive impact on student learning, satisfaction, and retention moving forward. There are varied approaches to blended learning, but there are some common elements within a widely diffused blended model that make blended learning recognizable while distinguishing from other approaches or even other types of learning that may fall under the term blended.

These are active learning pedagogies that are **centered on the students**, a **thoughtful integration** of online and face-to-face environments, and a **scaffolded student experience** throughout the course. These elements are demonstrations of a model that is informed by decades of research-based practices. Although we discussed what blended may have looked like in an emergency remote situation during a global pandemic, let's look at some of the greater benefits offered by blended learning. As the crisis phase of the pandemic fades, faculty will benefit from further developing their skills as blended educators, to effectively guide students learning and engagement by strategically using a variety of modalities adapted to maximize the opportunities afforded by specific learning environments.

ESSENTIAL ELEMENTS OF BLENDED LEARNING

Consider student-centered, active learning pedagogies

Focus on integration of the environments

Scaffold the students' experience throughout the course

A pedagogical shift

Through the years, the phrase "sage on the stage" is sometimes used in studies discussing the traditional way of teaching before blended redesign helped faculty think differently about their instructional approach (Kaleta et al., 2007). However, when faculty are thinking more strategically about how they teach and what they want their students to demonstrate that they learned throughout the course and at the end of the course, a pedagogical shift occurs through the process. Faculty start rethinking their learning objectives and course goals as well as how those could be best accomplished.

The science of learning has revealed that students are not empty vessels, but active players in their learning. Students have experiences and learn through activity, social interaction, and co-construction of knowledge. Instruction and teaching becomes more about a focus on designing, creating structures, scaffolding, and supporting interaction (Joosten, 2019). This paradigm shift has yielded the development of the field of learning sciences building upon the historical works of Dewey (1933), Piaget (1953), and Vgotsky (1978) resulting in the constructivist approach of learning. The benefits of interaction and **active learning** in postsecondary learning, in particular social and academic involvement, have been long documented (Astin, 1984; Chickering & Gamson, 1986; Kuh, 2001; Pascarella, 2001; Pace, 1941; Tinto, 1975, 2000).

While many researchers have continued to find that formal and informal student interactions with faculty and each other enhance student learning and success, some disciplines and faculty find themselves resorting to more traditional methods that are teacher-centered. Disappointingly, these instructional methods are outdated and can result in lower quality student experiences and outcomes. Blended learning lends itself to help faculty and instructors across disciplines focus on these emerging and evolving pedagogical and instructional approaches informed by the learning sciences. Many faculty and instructors may already feel that their teaching has changed for the better as they focused more on creating connections with students when using technology during the period of emergency remote instruction, while some have struggled and look forward to getting back to the comfort of a lecture hall.

> **"As faculty experience faculty and professional development opportunities to learn more about creating active and meaningful interactions with students for blended courses, their teaching may be forever changed."**

The pedagogical shift that faculty experience in designing and teaching blended courses is well documented in research. Swenson and Evans (2003) discuss how faculty and instructors in blended learning may see their teaching challenged in a whole new way as they consider that their role must be more than that of information suppliers. They must become guides with the focus more on the students and their engagement and interactions. Kaleta et al. (2007) discuss this change in role or pedagogical transformation in teaching style and instructional design in blended learning as reported by faculty at multiple institutions that taught blended learning courses. Additionally, Archambault, Wetzel, Foulger, and Williams (2010) discuss how pedagogy changes from instructor-led to more student-led and peer learning. As faculty experience faculty and professional development opportunities to learn more about creating active and meaningful interactions with students for blended courses, their teaching may be forever changed.

Blended offers an opportunity to move to more research-based practices and effective pedagogical models of learning. While traditional postsecondary education offerings have created an expectation for large enrollments courses that are passive or lecture-based courses providing a large breadth of content, in part due to business and economic models of higher education, research indicates that these approaches can be ineffective for students leading to high attrition, increase in cost for retaking a course, and potentially dropping out of college altogether. Many faculty may focus on the foundational and recall knowledge that students need to develop, but alternative instructional approaches, such as blended learning, are available to increase the learning effectiveness of students and student outcomes. Blended learning is an approach with great documented success in the 21st century (Bernard, Abrami, Lou,

Borokhovski, Wade, Wozney, & Huang, 2004; Cheng, Ritzhaupt, & Antonenko, 2018; Dziuban & Moskal, 2001; Dziuban, Hartman, & Moskal, 2004; Dziuban, Graham, Moskal, Norberg, & Sicili, 2018; Means, Toyama, Murphy, Bakia, & Jones, 2009; Picciano, 2006; Vignare, 2007).
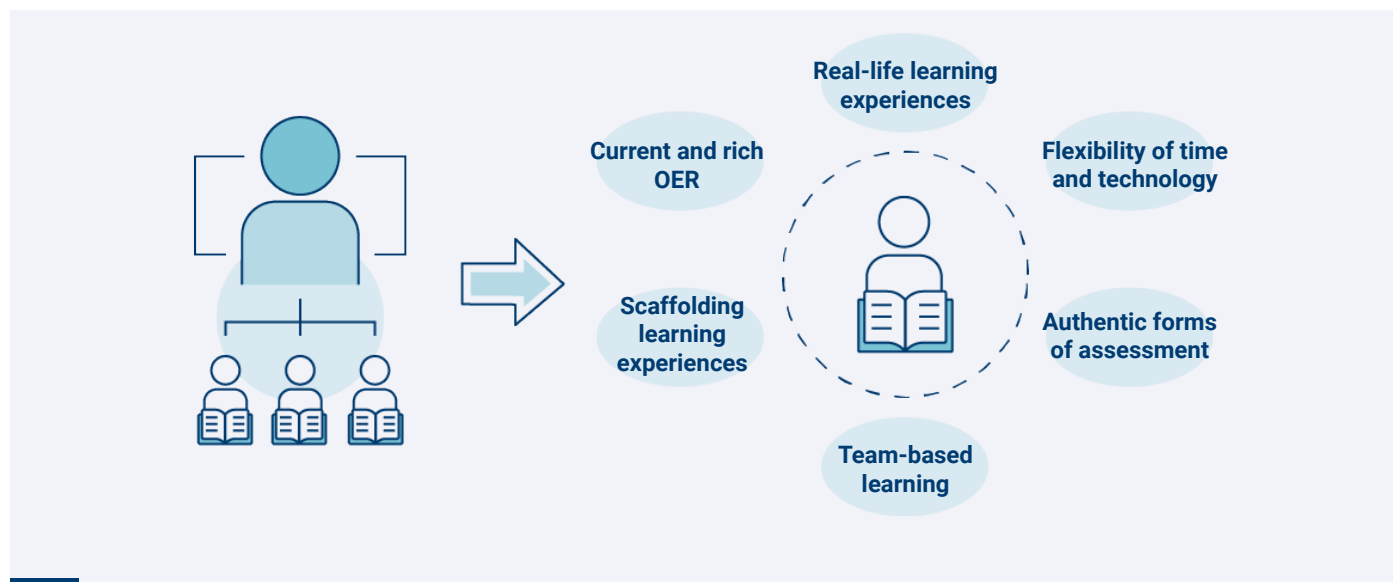

FIGURE I. The pedagogical shift from instructor-led to student-centered.

Integration

Some researchers and educators have documented the importance of strategically and effectively designing and mapping the **integration** of online and face-to-face or onsite mediums to ensure the learning objectives are met while not providing students with frivolous busy work or ignoring the importance of learning in one medium (Precel, Eshet-Alkalai & Alberton, 2009; Joosten et al., 2013). Traditionally, there are two key approaches to integration: 1.) determining what goes face-to-face and what goes online, and 2.) closing the loop on the two different environments. The new four dialecticals present additional dimensions to blend.

In the design process, faculty, instructors, and designers will want to ensure the environment aligns with the needs of the activity. For instance, listening to a lecture does not necessarily require one to come to a campus lecture hall and for the class to meet face-to-face. Instead, as Lowenthal, West, Archambault, and Borup (2020) discuss, an effective instructional design strategy includes using asynchronous video lessons as used during COVID-19. The learning objective of demonstrating basic concepts does not require a live, synchronous, or face-to-face environment. Remember, textbooks and text plus images have been a dominant form of content for years. Lectures are another form of content delivery that could be reconsidered based on the evolving research.

Alternatively, having students complete a small group project, such as a case study activity, with five people in a discussion forum thread over a couple days' time (i.e., asynchronously) is not necessarily the correct alignment either. Some learning objectives may be better suited for one medium over another (e.g., F2F or online) or for a certain temporal march (real-time vs over time), while some learning objectives may require a combination of interactions across mediums and time. As Garrison and Vaughan (2008) note that the integration of media must be shaped by educational goals and instructional design. Also, Kaleta et al. (2007) reported faculty and instructors' design of the course and integration were a theme. The faculty in the study commented:

> "[Y]ou can't just 'divide it [the course] in half"
>
> "I went through and really thought about what are the learning goals of the course, what are the things that we do to lead to those goals, and then what are the best ways would each of those mini-goals best be facilitated, online or face-to-face"
>
> "Goals and objectives must come first in developing any course…I feel that connecting the online and face-to-face activities needed attention because they need coordination in order to be integrated into a unified whole" (p. 125)

Strategic alignment of learning objectives with the learning environment

The learning objectives can be reconsidered, and the learning from one mode connected to flow into the other mode and vice versa, which is the second key to integration. While faculty and instructors carefully align the learning objectives to the appropriate learning environment and the right media, one avoids tacking on an online portion of the course or creating busy work for students. This phenomena is also referred to as **course and half syndrome** (Kaleta et al., 2007). Backwards design is a helpful instructional design approach to align learning objectives, assessments, and activities while reducing chances of course and half. It helps unpack the course and your expectations for the leader and then streamline it. The design must be carefully contemplated and the two environments must feed into each other. This has been referred to as closing the loop (Joosten et al., 2013). However, design is not easy. Faculty report that design is time consuming and yet essential because it is a conscious decision making process of examining both course modalities and determining which works best for which objectives and activities (Kaleta et al., 2007).

Process for creating the blend across modalities:

A course can be divided into two week modules (e.g., unit or other term used to describe a chunk of learning). On Monday of week one, students can receive a text written agenda and video or audio introduction (live or recorded) to the module of the course describing what they could accomplish over that module (e.g., learning objectives) and what activities they could perform in order to learn and achieve those learning objectives.

The student activities that the instructor outlines may require them to read or watch a piece of content relevant to the learning objectives and knowledge needed to participate in other module activities (e.g, YouTube video, a brief PowerPoint with embedded audio, or a news media article). They are then assessed on what information they received with a short, low-stakes quiz to ensure they have the needed knowledge to move forward to richer activities.

Then, they can apply what they learned through interaction in a threaded discussion activity where they respond to an instructor's thoughtful prompt for discussion by developing an argument to support a position providing evidence from their previous interaction with the text or other content, and they critically analyze the posts of their peers provided evidence that supports or disputes their position. These discussions take place over the week.

Then, the instructor reviews and analyzes the threaded communication discourse and the analytics of the students' quiz. They realize from the discussions and from the quiz item analysis that a number of students misunderstood a course concept or couldn't apply it accurately in the discussion. They develop a brief exercise or activity to take place in-class to help the students learn the concept and how to apply it appropriately.

At the start of the next onsite or live class, the instructor shares with the students a summary of their work, illustrates how the instructor identified the areas of their learning that needed further support, and provides them with some additional examples to help strengthen their knowledge in that area and the exercise or activity that the instructor prepared.

Prior to leaving the onsite class, the instructor introduces a new online assignment that is a higher order project team activity giving them time to ask you questions and get clarification about the assignment.

Designing is one of strategic alignment of learning objectives with the environment and closing of the loop allowing the learning in one medium to be addressed explicitly in the other medium. By carefully designing the lean learning tasks (didactic) to take place in the online mode over a week, such as the interaction with the content (e.g., texts, audio, videos) and assessment of the content (e.g., low stakes quiz, threaded discussions). Kaleta et al. (2007) found that instructors tended to use the online environment for work they felt the students could do on their own or that they felt was a waste of face-to-face classes time. Many researchers have found that online activities, such as threaded discussions, can improve student outcomes (e.g., Dahlstrom-Hakki, Alstad, & Banerjee, 2020). Manwaring, Larsen, Graham, Henrie, and Halverson (2017) found that online activities in a

blended course were more cognitively engaging than onsite activities. So while many instructors and students were dissatisfied with the online activities or lack of activity in emergency remote instruction pandemic models of hybrid and blended, there is research showing that they can be engaging and can improve student outcomes.

Complimentarily, the onsite classroom the following week is kept for more richer learning tasks that require more communication cues and interactions, such as targeted, higher order activities that possibly have greater levels of uncertainty or equivocality and require a quicker back and forth exchange and time. Kaleta et al. (2007) found that faculty saved the activities that required interaction for the in-person class, while research supports this decision. Or, situations that require students to interact with their peers for a student-centered activity or exercise to strengthen their learning. Then, again the onsite or live classroom is used to introduce some new information that may bring uncertainty and questions.

> **A design strategy is most effective when it facilitates an integration that includes consideration for both onsite and online as well as live or synchronous and asynchronous along with the type of activities that are student-centered and active."**

A design strategy is most effective when it facilitates an integration that includes consideration for both onsite and online as well as live or synchronous and asynchronous along with the type of activities that are student-centered and active. Synchronous allows for immediacy when questions need to be answered to reduce uncertainty. For instance, Dahlstrom-Hakki, Alstad, and Banerjee (2020) note that students preferred synchronous live discussions, not because they like live lectures, but because it allows them to ask the instructor clarifying questions and they have the ability to interact directly with the instructor and their peers with immediate feedback. Student interaction with peers has been noted as a key factor in success in postsecondary education for decades (see Chickering and Gamson, 1989). More recently, Manwaring et al (2017) found peer interactions across modes, including blended, were cognitively engaging. Additionally, Chen, Breslow, and Deboer (2018) found that when courses were blended with the onsite or face-to-face time including student application-based activities and problem solving group work, students had the potential to perform better. Furthermore, a greater or high blend with more time online (50% or more) can have a positive impact on students' interaction with each other and their instructor (Hilliard & Stewart, 2019). Integration with alignment of the temporal, spatial, technological, and pedagogical has great potential in improving engagement and learning.

By targeting the teaching, students' learning is now strengthened where it may have previously perhaps not been captured until an examination where it could be catastrophic leading them to do poorly and possibly drop the class and/or they would have never met the learning objective. Also, by

requiring students to come to class or attend live synchronous sessions, it can provide them with some self-directedness and accountability supporting their organization and ability to stay on task (Dahlstrom-Hakki, Alstad, & Banerjee, 2020) because self-regulation can be a challenge (Borup, Graham, West, Archambault, & Spring, 2020; Rasheed, Kamsin, & Abdullah, 2020) and these skills, such as organization, are needed to positively influence student outcomes when students are working in the online flexible environment (Joosten & Cusatis, 2020).

The timing and environments must be designed to assure they best meet the learning objectives and tasks while drawing connections across time and environments. While Shea (2007) once referred to integration as the "missing instructional element" (p. 26) often in blended learning, as we move to reconceptualize our blends, integration deserves our attention to ensure greater student satisfaction and purposeful use of the digital learning technologies. The two environments can inform each other or close the loop, and the activities are meaningfully tied into each other so no one environment or set of activities feels like busy work to the students, since it is reported that instructors often place value on one environment and the other environment feels tacked on rather than carefully thought out (Kaleta et al., 2007). The dynamic nature of blending two environments may allow instructors to better engage students while decreasing confusion, frustration, and anxiety that detract students from learning and progress (Halverson & Graham, 2019). Designing courses to meaningfully integrate the different environments and temporal cadence (online and onsite, live and overtime) while incorporating an active learning approach can improve student outcomes in blended and hybrid courses.

> **Integration with alignment of the temporal, spatial, technological, and pedagogical has great potential in improving engagement and learning.**
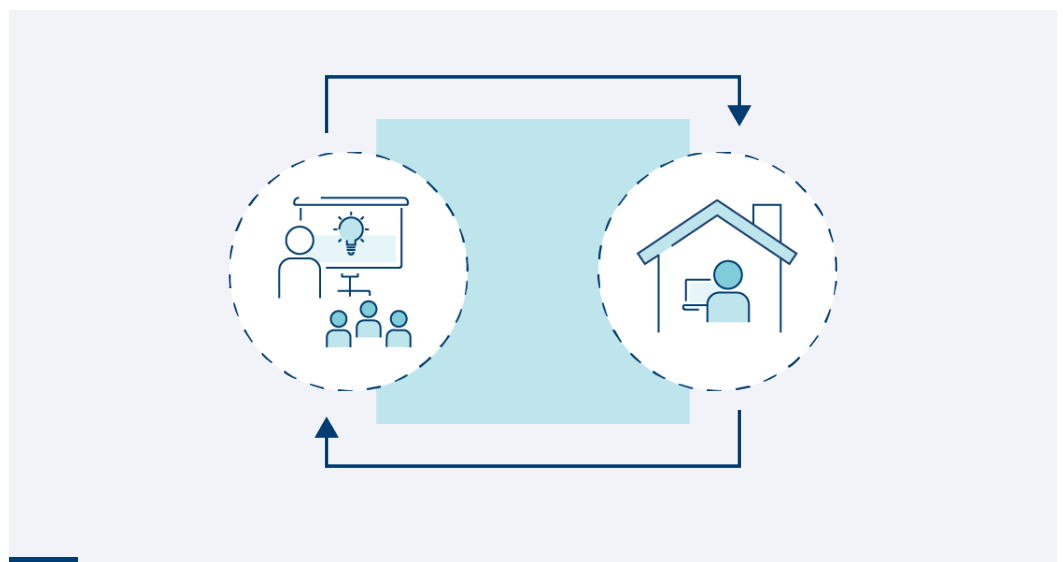

FIGURE J. Closing the loop — the two environments inform each other and activities are meaningfully tied into each other.

Scaffolding is critical to the success of students when in blended learning environments. Scaffolding in a blended course consists of how the course is organized, and what communication is provided to students to guide them. As discussed in the previous section, one element of scaffolding is the use of modules or a chunk or learning represented by a unit of time (e.g., two weeks). Also, scaffolding provides incremental support to students which is important when they are working independently or with peers, and at a distance rather than in a classroom. "[S]caffolding is support given to assist individuals as they engage in a task" (Wood, Bruner, & Ross, 1976; West, Hannafin, Hill & Song, 2013, p. 136). Students may be familiar with the process of attending class, listening to lectures, possibly responding to questions posed in lectures, and taking exams. Yet, when courses are designed to be focused on their interactions with the content and each other with new types of activities and technologies, they may need a structure to better support their learning as seen documented in the learning sciences and constructivism (Joosten, 2019). This structure includes scaffolding through the design, organization, and learner support which are critical in learning at a distance and online (Joosten, Cusatis, & Harness, 2019).

Scaffolding is most evident when the course is organized or chunked into more manageable units of activity that support students in achieving learning objectives for the course. The course can be chunked into modules (or units). The modules are chunked into activities (with content, with the instructor, with each other, independently) and assessments of student learning and progress. These interactions are carefully scaffolded across time, space, and technology to help students stay on task and self-regulate their learning by having consistent organization and temporal cadence. Each step provides the learner with details as to what they are supposed to do, how, where, and with who, as well as how it will be assessed, providing for frequent feedback on their learning. Scaffolding helps learners stay engaged which is often more difficult when working remotely while moving sequentially towards the learning objectives of the course.

Scaffolding of learning is not a new concept (see Vytgotsky, 1978), but has again become useful in postsecondary education since learning has become mediated through technologies and using more constructivistic or active learning approach making scaffolding of larger numbers of students manageable while providing students with the support they need while distanciated in time and space. The term is prevalent in childhood development and learning, including K-12 education, yet it has arisen as an effective instructional strategy in postsecondary education and supports

> "**Scaffolding through design, organization, and learner support are critical in learning at a distance and online.**"

active learning pedagogies when mediated. Importantly, scaffolding has been a proven method to improve student learning in blended education (Ang, 2020).

Scaffolding can be used as an embedding mechanism in blended learning. It creates anchors and supports the learning pathway for students while allowing for an extension of their learning across activities. Scaffolding can be embedded in learning environments, interaction, the structure of activities, artifacts, and technologies (Resider & Tabak, 2014). The online medium and an alternation of activity across time and space can create the need for a course structure that supports students' learning and their ability to manage the multiple time and space expectations.

"**Scaffolding can be used as an embedding mechanism in blended learning. It creates anchors and supports the learning pathway for students while allowing for an extension of their learning across activities.**"

For example, Ang (2020) balanced online and face-to-face course components in a highly scaffolded blended course. Students began each topic with an asynchronous two hour content session, broken down into a web-lecture and two or three 20 minute interactive learning activities. Following the content, students attended a two hour synchronous tutorial session online where a tutor summarized content, answered questions, and clarified student misconceptions. In these sessions, students randomly shared their solutions to homework questions with the tutor walking through and discussing solutions, giving feedback to the class as a whole. Students then met for two hour laboratory sessions to work through experiments in pairs and complete individual problem worksheets. The high level of scaffolding helped students manage asynchronous and synchronous web sessions alongside the face-to-face sessions, with student grades and satisfaction improving.

Conceptualizing what blended learning looks like on your campus is an important step in ensuring quality learning for your students. Identifying a blended model that is derived from research-based, effective practices with documented improvement of student outcomes is critical. Since many of you have already had to launch technology-driven blended options, it is time to reconceptualize your blended model for campus and for each program focusing on what works. Now that we have discussed the three primary considerations when reconceptualizing your blended courses to ensure quality learning, let's discuss the planning for your campus' blended future, and how your blended model can be incorporated and supported.

PLANNING FOR A BLENDED FUTURE: NEXT STEPS

1 Integrate or try out new student-centered, active pedagogies.

2 Think strategically about course learning objectives and meld them with a strategic blend of what needs to stay on-site versus what students can do on their own.

3 Consider what students can do individually or in groups to increase authentic learning experiences and decrease faculty workload.

4 Seek out professional and faculty development opportunities about blended learning.

5 Reflect on your experiences learned from the crisis phase of the pandemic. Note what worked well in an online format and what did not. Use these reflections to strategize about enhancing your teaching in your blended courses.

6 Experiment with developing a design strategy that incorporates the different environments and temporal cadence (online, on-site, live, overtime) while incorporating an active learning approach to improve student outcomes.

Moving Forward

> " **The future of blended will move beyond awareness of good pedagogy and instruction...providing a solid design and structure that scaffolds students through the learning experience."**

☼ KEY IDEAS

1 Learn about resources, including the new DETA Research Toolkit, which will help you conduct your own evaluation or research on your campus.

....

2 Reconceptualize your blend to integrate active learning in modes and spaces that maximize the opportunities of various learning environments. Rely on research-driven design principles to scaffold students learning experiences.

....

3 Perfect your blend to enhance social interactions and build a community of learners.

The first step can be **conducting your own evaluation or research** on your campus to identify what works and what doesn't. There is an array of existing tools to support your research and evaluation efforts. The new **DETA Research Toolkit** (Joosten, 2020) and the *Blended Learning: Research Perspectives* research series, including the most recent volume 3, by Picciano, Dziuban, Graham, and Moskal (in press) provide numerous evaluation and research models as well as instrumentation to support evaluation of the efforts on campus. For instance, the DETA Research Toolkit offers a research model for evaluating learning during COVID-19. Moreover, the OLC offers various scorecards that can help evaluate your courses and programs to identify areas of improvement. Data collection may consist of multiple groups of stakeholders — students, faculty, and staff — and can move beyond institutionally warehoused data and traditional course evaluations to instruments and methods that capture the nuance of blended learning, never neglecting the richness of stories and qualitative methods available through a mixed-methods approach (Joosten, 2019, 2020).

The second step can be **reconceptualizing your blend**. While we included three considerations, the future of blended will move beyond the awareness of good pedagogy and instruction as we find in active learning that is integrated across modes and space while providing a solid design and structure that scaffolds students through their learning experience. Already we are seeing evidence that the blended can be effectively redefined with solutions such as adaptive learning technologies and open education resources. These blends can support better learning outcomes in large enrollment courses, in STEM courses, and in learning experiences for traditionally underrepresented students, such as Black, Hispanic, Latino, Latina, Indigenous, and Native students. Moreover, Picciano and Dziuban (2021) discuss the blending of instruction and learning through artificial intelligence (AI). For more help on getting started with your reconceptualization, see *Appendix A,* the University of Wisconsin-Milwaukee's "Ten Questions for Blended Course Redesign," or visit the **University of Central Florida BlendedToolkit**.

The third step is what is referred to as **perfecting the blended** or thinking more about the social involvement in your class. Many researchers and instructors have talked about the importance of building a community of learning or learning community in courses (Harasim, Hilt, Teles, & Turoff, 1995) while others have noted the connectivity challenge (Kaleta et al., 2007). Some refer to this as social presence derived from social presence theory (see Short, Williams, & Christie, 1976) while others refer to the Community of Inquiry model (see Garrison, 1989), yet the bottom line is that your students want to feel connected to you, the course, and each other. Focusing on building this social involvement or engagement by examining and structuring the students interactions with each other and you, you can overcome some of the challenges faculty and students new to blended report — feeling disconnected or disengaged. It takes skills and experience to create interactive discussion in online environments and to connect the online and onsite environments, yet it is reported that some students to open up more online in threaded discussions (e.g., Kaleta et al., 2007) and feel it is less anxiety inducing (Dahlstrom-Hakki, Alstad, & Banerjee, 2020). While the pandemic led to great usage in synchronous or live video conferencing tool, let's identify ways to effectively use while connecting with students and creating opportunities for engagement and improving student outcomes rather than just mirroring the onsite didactic instruction (see Joosten, 2012).

What is the future of higher education? The blended university (Joosten & Picciano, 2021). Prior to the pandemic many of us have in our keynote presentations, panel discussions, workshop seminars, and many hallways and coordinators, have hypothesized about the future of the university and colleges being blended. Now, because of the pandemic of 2020, we have first-handedly experienced a version of the blend, but now is the time to think strategically and calculate our next steps in reconceptualizing blended learning within our courses and programs to ensure quality by carefully considering the dialectical of technology, time, space, and pedagogy, while integrating modalities in order to built the future, the blended university.

References

Alamri, H. A., Watson, S., & Watson, W. (2020). Learning technology models that support personalization within blended learning environments in higher education. TechTrends, 65, 62-78. doi:10.1007/s11528-020-00530-3

Alexander, B., Ashford-Rowe, K., Barajas-Murphy, N., Dobbin, G., Knott, J., McCormack, M., Pomerantz, J., Seilhamer, R., & Weber, N. (2019). EDUCAUSE horizon report: 2019 higher education edition. EDUCAUSE. https://library.educause.edu/-/media/files/library/2019/4/2019horizonreport.pdf?la=en&hash=C8E8D444AF372E705FA1BF9D4FF0DD4C-C6F0FDD1

Allen, I. E., & Seaman. J. (2003). Seizing the opportunity: The quality and extent of online education in the United States, 2002 and 2003. Sloan Consortium. https://files.eric.ed.gov/fulltext/ED530060.pdf

Allen, I. E., Seaman, J., & Garrett, R. (2007). Blending in: The extent and promise of blended education in the United States. Sloan Consortium. http://www.blendedteaching.org/system/files/Blending_In.pdf.

Ang, J. W. J. (2020). Scaffolded inverse blended learning: An approach to teach an online general chemistry course. Journal of Chemical Education, 97, 2839-2844. doi:10.1021/acs.jchemed.0c00436

Archambault, L., Wetzel, K., Foulger, T. S., & Williams, M. K. (2010). Professional development 2.0: Transforming teacher education pedagogy with 21st century tools. Journal of Digital Learning in Teacher Education, 27(1), 4-11. doi:10.1080/21532974.2010.10784651

Astin, A. W. (1984). Student involvement: A developmental theory for higher education. Journal of College Student Personnel, 25(4), 297–308.

Aycock, A., Garnham, C., & Kaleta, R. (2002). Lessons learned from the hybrid course project. Teaching with Technology Today, 8(6). Retrieved from http://www.uwsa.edu/ttt/articles/garnham2.htm

Beatty, B. (2020, May 26). Can hyflex options support students in the midst of uncertainty? EDUCAUSE Review. Retrieved from: https://er.educause.edu/blogs/2020/5/can-hyflex-options-support-students-in-the-midst-of-uncertainty#:~:text=In%20most%20cases%2C%20the%20answer,an%20extensive%20body%20of%20research.

Bernard, R. M., Abrami, P. C., Lou, Y., Borokhovski, E., Wade, A., Wozney, L., Wallet, P. A., Fiset, M., & Huang, B. (2004). How does distance education compare with classroom instruction? A meta-analysis of the empirical literature. Review of educational research, 74(3), 379-439. https://doi.org/10.3102/00346543074003379

Bonk, C. J., Kim, K., & Zeng, T. (2006). Future directions of blended learning in higher education and workplace learning settings. In C. J. Bonk & C. R. Graham (Eds.), The handbook of blended learning: Global perspectives, local designs (pp. 550-567). Pfeiffer.

Borup, J., Graham, C. R., West, R. E., Archambault, L., & Spring, K. J. (2020). Academic Communities of Engagement: An expansive lens for examining support structures in blended and online learning. Educational Technology Research and Development, 68(2), 807-832. doi:10.1007/s11423-020-09744-x

Broeckelman-Post, M. A., & Pyle, A. S. (2016). Public speaking versus hybrid introductory communication courses: Exploring four outcomes. Communication Education, 66(2), 210-228. doi:10.1080/03634523.2016.1259485

Chen, X., Breslow, L., & Deboer, J. (2018). Analyzing productive learning behaviors for students using immediate corrective feedback in a blended learning environment. Computers & Education, 117, 59-74. doi:10.1016/j.compedu.2017.09.013

Cheng, L., Ritzhaupt, A. D., & Antonenko, P. (2018). Effects of the flipped classroom instructional strategy on students' learning outcomes: A meta-analysis. Educational Technology Research and Development, 67, 793-824. doi:10.1007/s11423-018-9633-7

Chickering, A. W., & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. American Association for Higher Education Bulletin, 3-7. Retrieved from https://eric.ed.gov/?id=ED28249.

Clayton, K. E., Blumberg, F. C., & Anthony, J. A. (2018). Linkages between course status, perceived course value, and students' preference for traditional versus non-traditional learning environments. Computers & Education, 125, 175-181. doi:10.1016/j.compedu.2018.06.002

Daft, R. L., & Lengel, R. H (1986). Organizational information requirements, media richness and structural design. Management Science, 32(5), 554-571. doi:10.1287/mnsc.32.5.554.

Dewey, J. (1933). How we think: A restatement of the relation of reflective thinking to the educative process. D.C. Heath & Co Publishers.

Dahlstrom-Hakki, I., Alstad, Z., & Banerjee, M. (2020). Comparing synchronous and asynchronous online discussions for students with disabilities: The impact of social presence. Computers & Education, 150, 1-11. doi:10.1016/j.compedu.2020.103842

Dziuban, C., Graham, C.R., Moskal, P.D., Norberg, A., & Sicilia, N. (2018). Blended learning: The new normal and emerging technologies. International Journal of Educational Technology in Higher Education, 15(3),1-16. https://doi.org/10.1186/s41239-017-0087-5

Dziuban, C., Hartman, J., & Moskal, P. (2004, March 30). Blended learning. EDUCAUSE Center for Applied Research. http://connect.educause.edu/Library/ECAR/BlendedLearning/40089.

Dziuban, C., & Moskal, P. (2001, October). Emerging research issues in distributed learning [Conference presentation]. 7th Sloan-C International Conference on Asynchronous Learning Networks, Orlando, FL, United States.

Dziuban, C. D., & Picciano, A. G. (2015). What the future might hold for online and blended learning. In C. D. Dziuban, A. G. Picciano, C. R. Graham, & P. Moskal (Eds.), Conducting research in online and blended learning environments: New pedagogical frontiers (pp. 173-194). Routledge.

Galanek, J., & Gierdowski, D. C. (2020, May 20). Faculty prefer face-to-face but lean toward blended and online environments. EDUCAUSE. Retrieved from: https://www.educause.edu/ecar/research-publications/ecar-study-of-community-college-faculty-and-information-technology/2020/faculty-prefer-face-to-face-but-lean-toward-blended-and-online-environments

Garnham, C., & Kaleta, R. (2002, March). Introduction to hybrid courses. Teaching with Technology Today, 8(6). http://www.uwsa.edu/ttt/articles/garnham.htm.

Garnham, C., Kaleta, B., & Sudzina, M. (2003, March). Preparing for and teaching hybrid courses [Conference presentation]. Midwest EDUCAUSE Conference, Chicago, IL, United States.

Garrison, D. R. (1989). Understanding distance education: A framework for the future. Routledge.

Garrison, D. R., & Vaughan, N. D. (2007). Blended learning in higher education: Framework, principles, and guidelines. John Wiley & Sons Inc.

Gavassa, S., Benabentos, R., Kravec, M., Collins, T., & Eddy, S. (2019). Closing the achievement gap in a large introductory course by balancing reduced in-person contact with increased course structure. CBE—Life Sciences Education, 18(1), 1-10. doi:10.1187/cbe.18-08-0153

Giddens, A. (1984). The constitution of society: Outline of the theory of structuration. University of California Press.

Godambe, D., Picciano, A. G., Schroeder, R., & Schweber, R. (2004, April 27). Faculty perspectives. [Conference presentation]. 2004 Sloan-C Workshop on Blended Learning, Chicago, IL, United States.

Graham, C. R. (2006). Blended learning systems: Definition, current trends and future directions. In C. J. Bonk & C. R. Graham (Eds.), The handbook of blended learning: Global perspectives, local designs (pp. 3–21). Pfeiffer.

Graham, C. R. (2013). Emerging practice and research in blended learning. In M. G. Moore (Ed.), Handbook of Distance Education (pp. 333-350). Routledge.

Farmer, H. (2020, August 18). 6 models for blended synchronous and asynchronous online course delivery. EDUCAUSE Review. Retrieved from: https://er.educause.edu/blogs/2020/8/6-models-for-blended-synchronous-and-asynchronous-online-course-delivery.

Halverson, L.R., & Graham, C.R. (2019). Learner engagement in blended learning environments: A conceptual framework. Online Learning, 23(2), 145-178. doi:10.24059/olj.v23i2.1481Harasim, L. M., Hiltz, S. R., Teles, L., & Turoff, M. (1995). Learning networks: A field guide to teaching and learning online. The MIT Press.

Hilliard, L. P., & Stewart, M. K. (2019). Time well spent: Creating a community of inquiry in blended first-year writing courses. The Internet and Higher Education, 41, 11-24. doi:10.1016/j.iheduc.2018.11.002

Hiltz, S. R., & Turoff, M. (1978). The network nation: Human communication via computer. Addison-Wesley.

Hrastinski, S. (2019). What do we mean by blended learning? TechTrends, 63(5), 564-569. doi:10.1007/s11528-019-00375-5

Joosten, T. (2012). Social media for educators. Wiley.

Joosten, T. (2015). Thinking systemically: A study of course communication and social processes in face-to-face and online courses. (Publication No. 886) [Doctoral dissertation, University of Wisconsin - Milwaukee]. UWM Digital Commons.

Joosten, T. (2017). 3 questions for an online learning leader. Internet Learning, 5(1), 41-45. doi: 10.18278/il.5.1.5

Joosten, T. (2019). Learning science research through a social scientific lens. In Robert S. Feldman (Ed.) Learning science: Theory, research, and practice. McGraw Hill Education.

Joosten, T. (2020a). DETA research toolkit V2.1. National Research Center for Distance Education and Technological Advancements. Retrieved from: https://detaresearch.org/research-support/research-toolkit-2/

Joosten, T. (2020b, September 24). A review of communication media theories: A potential framework for understanding learning technologies. [blog post] Learning Technology Juice. Retrieved from: http://professorjoosten.blogspot.com/2020/09/a-review-of-communication-media.html?q=media+richness+theory.

Joosten, T. M., Barth, D., Harness, L., & Weber, N. L. (2013). The impact of instructional development and training for blended teaching on course effectiveness. In A. G.

Joosten, T., & Cusatis, R. (2020). Online learning readiness. American Journal of Distance Education, 34(3), 180-193. doi:10.1080/08923647.2020.1726167

Joosten, T., Cusatis, R., & Harness, L. (2019). A Cross-institutional Study of Instructional Characteristics and Student Outcomes: Are Quality Indicators of Online Courses Able to Predict Student Success? Online Learning, 23(4).

Joosten, T., Lee-McCarthy, K., Harness, L., & Paulus, R. (2020). Digital learning innovation trends. Every Learner Everywhere project of WCET (the WICHE Cooperative for Educational Technologies). Retrieved from: https://www.everylearnereverywhere.org/resources/digital-learning-innovation-trends/

Joosten, T., & Picciano, A. (2021, March 19th). Planning for a blended future [conference presentation]. Presentation at Online Learning Consortium Innovate Conference, virtual, International. https://onlinelearningconsortium.org/attend-2021/innovate/program/blended-learning-summit/

Kaleta, R., Skibba, K. A., & Joosten, T. (2007). Discovering, designing, and delivering hybrid courses. In A. Picciano & C. Dziuban (Eds.), Blended learning: Research perspectives (pp. 111-144). The Sloan Consortium.

Kuh, G. D. (2001). Assessing what really matters to student learning: Inside the national survey of student engagement. Change: The Magazine of Higher Learning, 33(3), 10-17. https://doi.org/10.1080/00091380109601795

Laster, S., Otte, G., Picciano, A. G., & Sorg, S. (2005, April 18). Redefining blended learning [Conference presentation]. 2005 Sloan-C Workshop on Blended Learning, Chicago, IL, United States.

Lorenzo, J., & Moore, J. (2002). The Sloan Consortium Report to the Nation: Five Pillars of Quality Online Education. Sloan Consortium. www.sloan-c.org/effectivepractices/pillarreport1.pdf.

Lowenthal, P., West, R., Archambault, L., & Borup, J. (2020, August 24). Engaging students through asynchronous video-based discussions in online courses. EDUCAUSE Review. Retrieved from: https://er.educause.edu/articles/2020/8/engaging-students-through-asynchronous-video-based-discussions-in-online-courses

Manwaring, K. C., Larsen, R., Graham, C. R., Henrie, C. R., & Halverson, L. R. (2017). Investigating student engagement in blended learning settings using experience sampling and structural equation modeling. The Internet and Higher Education, 35, 21-33. doi:10.1016/j.iheduc.2017.06.002

Martin, F., Polly, D., & Ritzhaupt, A. (2020). Bichronous online learning: Blending asynchronous and synchronous online learning. EDUCAUSE Review. Retrieved from: https://er.educause.edu/articles/2020/9/bichronous-online-learning-blending-asynchronous-and-synchronous-online-learning

Mayadas, A. F., & Picciano, A.G. (2007). Blended learning and localness: The means and the end. Journal of Asynchronous Learning Networks, 11(1), 3-7. http://dx.doi.org/10.24059/olj.v11i1.1730

McMurtie, B. (2020, July 10). Colleges say hybrid courses will make the fall a success. But will students get the worst of both worlds? The Chronicle of Higher Education. https://www.chronicle.com/article/colleges-say-hybrid-courses-will-make-the-fall-a-success-but-will-students-get-the-worst-of-both-worlds

Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2009). Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies. US Department of Education. Retrieved from: https://files.eric.ed.gov/fulltext/ED505824.pdf

Milman, N., Irvine, V., Kelly, K., Miller, J., & Saichaie, K. (2020, July 7). 7 Things You Should Know About the HyFlex Course Model. Retrieved from: https://library.educause.edu/resources/2020/7/7-things-you-should-know-about-the-hyflex-course-model

Pace, C.R., (1941). They went to college: A study of 951 former university students. University of Minnesota Press.

Pascarella, E. T. (2001). Identifying excellence in undergraduate education: Are we even close? Change: The Magazine of Higher Learning, 33(3), 18-23. https://doi.org/10.1080/00091380109601796

Piaget, J. (1953). The origin of intelligence in the child. Routledge.

Picciano, A. G. (2006). Blended learning: Implications for growth and access. Journal of Asynchronous Learning Networks, 10(3), 95-102. http://dx.doi.org/10.24059/olj.v10i3.1758

Picciano, A. G. (2011). Introduction to the special issue on transitioning to blended learning. Journal of Asynchronous Learning Networks, 15(1), 3-7. http://dx.doi.org/10.24059/olj.v15i1.195

Picciano, A. G. (2015). Research in online and blended learning: New challenges, new opportunities. In C. D. Dziuban, A. G. Picciano, C. R. Graham, & P. Moskal (Eds.), Conducting research in online and blended learning environments: New pedagogical frontiers (pp. 1-11). Routledge.

Picciano, A. G. (2017). Theories and frameworks for online education: Seeking an integrated model. Online Learning, 21(3), 166-190. http://dx.doi.org/10.24059/olj.v21i3.1225

Picciano, A. G., & Dziuban, C. D. (Eds.) (2007). Blended learning: Research perspectives. Sloan Consortium.

Picciano, A. G., Dziuban, C. D. & Graham, C. R. (Eds.) (2013). Blended learning: Research perspectives, Volume 2. Routledge.

Picciano, A. G., Dziuban, C.D., Graham, C.R., & Moskal, P.D. (In Press). Blended Learning: Research Perspectives, Volume 3. Routledge.

Picciano, A. G., Seaman, J., Shea, P., & Swan, K. (2012). Examining the extent and nature of online learning in American k-12 education: The research initiatives of the Alfred P. Sloan Foundation. Internet and Higher Education, 15(2), 127-135. doi:10.1016/j.iheduc.2011.07.004

Precel, K. Eshet-Alkalai, Y., & Alberton, Y. (2009). Pedagogical and design aspects of a blended learning course. International Review of Research in Open and Distance Learning, 10(2), 1-16. doi:10.19173/irrodl.v10i2.618

Rasheed, R. A., Kamsin, A., & Abdullah, N. A. (2020). Challenges in the online component of blended learning: A systematic review. Computers & Education, 144, 1-17. doi:10.1016/j.compedu.2019.103701

Shea, P. (2007). Bridges and barriers to teaching online college courses: A study of experienced online faculty in thirty-six colleges. Journal of Asynchronous Learning Networks, 11(2), 73-128. http://dx.doi.org/10.24059/olj.v11i2.1728

Short, J., Williams, E., & Christie, B. (1976). The social psychology of telecommunications. John Wiley & Sons.

Swenson, P. W., & Evans, M. (2003). Hybrid courses as learning communities. In S. Reisman (Ed.), Electronic Learning Communities Issues and Practices (pp. 27-72). Information Age Publishing.

Thompson, K. (March 19, 2021). Blended learning is the future [conference presentation]. Blended Learning Summit Online Learning Consortium Innovate Conference, virtual, International.

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. Review of Educational Research, 45(1), pp. 89-125.

Tinto, V. (2000). Linking learning and leaving: Exploring the role of the college classroom in student departure. In J. M. Braxton (Ed.). Reworking the student departure puzzle (pp. 81-94). Vanderbilt University Press.

Vignare, K. (2007). Review of literature on blended learning. In A. G. Picciano & C. Dziuban Blended Learning: Research Perspectives (pp. 161-178). The Sloan Consortium.

Vygotsky, L.S. (1978). Mind in society: The development of higher psychological processes. Harvard University Press.

West, R. E., Hannafin, M. J., Hill, J. R., & Song, L. (2013). Cognitive perspectives on online learning environments. Routledge.

Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. Journal of child psychology and psychiatry, 17(2), 89-100. https://doi.org/10.1111/j.1469-7610.1976.tb00381.x

Zydney, J. M., Mckimmy, P., Lindberg, R., & Schmidt, M. (2018). Here or There Instruction: Lessons Learned in Implementing Innovative Approaches to Blended Synchronous Learning. TechTrends, 63(2), 123-132. doi:10.1007/s11528-018-0344-z

Ten Questions for Blended Course Redesign

1 As you think about your course redesign, which of your course objectives might be met more successfully online than in a traditional face-to-face classroom? In consequence, what new learning activities do you think you might introduce into your course?

2 Since you will be reducing "seat time" partially or wholly in your course, you need to identify alternative ways to deliver course content. Think about a specific topic that you usually present to your face-to-face class. How might you make that portion of your course content available online?

3 Traditional testing is not the only way to assess your students' work in an online environment. What other means of assessing or documenting student learning might you decide to use online?

4 Asynchronous discussion forums and small group work can play a key role in online courses. What new learning opportunities will the use of asynchronous discussion and small group work open up for your students? What problems do you anticipate in using online discussions or small group work?

5 With the reduction or removal of seat time, your students will not be meeting face-to-face as frequently as in a traditional course, if at all. How will you develop a cohesive and well functioning peer group of online learners?

6 Students often have very unrealistic ideas about the amount and kind of work required for an online or a blended course. As well, students may have problems scheduling their online work and managing their time. How can you help your students to adjust their expectations for the course and manage their time more effectively?

7 Students sometimes have difficulty acclimating to the course Web site and to other instructional technologies you may be using. What initial steps can you take to assist students to become familiar with your Web site and those instructional technologies? If students need help with technology later in the course, how will you provide support?

8 How will you decide if your online or blended course redesign is a good one? For instance, during the initial offering of your course, how will you determine whether mid-semester adjustments are needed?

9 There is a common tendency for faculty to overcompensate when teaching online or blended courses and require their students (and themselves!) to do more work than they normally would in a face-to-face course (the "course-and-a-half syndrome"). How will you determine the appropriateness of the course requirements, and its implications for your own workload?

10 How will you integrate the online and face-to-face components of the course so that they complement and extend one another? How do you think you would divide the percentage of course time and student assessment between online and face-to-face activities?

Source: University of Wisconsin-Milwaukee, Ten Questions for Blended Learning Course Redesign

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