Hybrid-Flexible Course Design

Implementing student-directed hybrid classes

Brian J. Beatty

Table of Contents

EdTech Books

Beatty, B. J. (2019). *Hybrid-Flexible Course Design (1st ed.)*. EdTech Books. https://dx.doi.org/10.59668/33

Brian J. Beatty

San Francisco State University

Dr. Brian Beatty is Professor of Instructional Technologies and co-coordinator of the Instructional Design and Technology MA program in the Department of Equity, Leadership Studies and Instructional Technologies at San Francisco State University. Brian's primary areas of interest and research include social interaction in online learning, flipped classroom implementation, and developing instructional design theory for Hybrid-Flexible learning environments. At SFSU, Dr. Beatty pioneered the development and evaluation of the HyFlex course design model for blended learning environments, implementing a "student-directed-hybrid" approach to better support student learning.

Previously (2012 – 2020), Brian was Associate Vice President for Academic Affairs Operations at San Francisco State University (SFSU), overseeing the Academic Technology unit and coordinating the use of technology in the academic programs across the university. He worked closely with IT professionals and leaders in other units to coordinate overall information technology strategic management at SFSU. Prior to 2012, Brian was Associate Professor and Chair of the Instructional Technologies department in the Graduate College of Education at SFSU. He received his Ph.D. in Instructional Systems Technology from Indiana University Bloomington in 2002. Dr. Beatty also holds several CA single-subject teaching credentials, an M.A. in Instructional Technologies from SF State and a B.S. in Electrical Engineering from Marquette University. Dr. Beatty has more than 30 years of experience as a classroom teacher, trainer, and instructional designer at schools, businesses, and the US Navy.

👍 Like this? [Endorse it](#) and let others know.

Endorse

Acknowledgements

Brian J. Beatty

This book is an expression of my journey with Hybrid-Flexible (HyFlex) course design over more than a decade, working with the students and faculty at San Francisco State University and many others in institutions of higher education around the world. Many of the ideas and stories come directly from teaching using this approach, and learning from students and other faculty experiencing the journey alongside.

In particular I'd like to thank San Francisco State faculty Eugene Michaels, Kim Foreman, Peggy Benton, Patricia Donohue, Zahira Merchant, Jeff Brain, and Kevin Kelly for their significant contributions in initiating this work, shaping the values and guiding principles we adopted, using their design expertise to modify our practices, and trying this out for themselves so they could contribute "firsthand" insights. Special thanks to Patricia Donohue and Jeff Brian for contributing their experiences in their own voices as videos in Chapter 2.1. Teaching a Hybrid-Flexible Course.

Of course, none of this would have even started without our need to serve students better in the Instructional Technologies graduate program at San Francisco State. To those students who experienced the early versions of HyFlex course design I offer my eternal thanks for their patience, enthusiasm to be part of something new and different, and for their willingness to share their experiences in class, in course evaluations, research surveys, and in targeted messages to HyFlex students and faculty. Highlighted in this book in Chapter 2.2. Learning in a Hybrid-Flexible Course are contributions from Catherine Mone, Nate Kaufman, Gustavo Campos, Jess Kaufman, Joel Compton, David Miles, Brian Rayner, and Kate Miffitt.

Many of the participants in workshops at professional conferences, sponsored by publishers, or hosted by institutions considering HyFlex adoption have shaped the story in meaningful ways also. Some of the most impactful contributions are represented in the case reports found in Unit III; special thanks to the initial group of case report authors: Cathy Littlefield, Stephanie Donovan, Jeanne Samuel, Amanda Rosenzweig, Mark McLean, Rene Cintron, Glori Hinck, Lisa Burke, Jackie Miller, Melinda Baham, Melanie Lefebvre, Susan Balter-Reitz, Samuel Boerboom, and Zahira Merchant.

I'd also like to thank my family for their support, patience and willingness to live a life that requires flexibility itself in many ways: Nellie, my life partner, and our children Elizabeth, Teresa, Jennifer, Katherine, Angela and Christopher. Our shared academic journey allowed each of you to follow your own path through your formal learning years, discovering what worked best for your specific situation at the time. You provided lived evidence every day of the value of adapting instruction to meet the unique needs of learners, including participation mode. Special thanks to Teresa for the cover design for the book!

This book is offered to our education community as a gift to help others find their way to provide students with a better learning experience that meets their unique and individual needs for both flexibility and high quality. This work has been often challenging, sometimes rewarding, and always interesting. After you've received something important from this work, please share it with your students, faculty, administrators and others who may benefit.

I leave you with a final piece of ancient wisdom that seems very appropriate for an open access work: "It is more blessed to give than to receive." Acts 20:35, New International Version.

Brian J. Beatty

San Francisco State University

Dr. Brian Beatty is Professor of Instructional Technologies and co-coordinator of the Instructional Design and Technology MA program in the Department of Equity, Leadership Studies and Instructional Technologies at San Francisco State University. Brian's primary areas of interest and research include social interaction in online learning, flipped classroom implementation, and developing instructional design theory for Hybrid-Flexible learning environments. At SFSU, Dr. Beatty pioneered the development and evaluation of the HyFlex course design model for blended learning environments, implementing a "student-directed-hybrid" approach to better support student learning.

Previously (2012 – 2020), Brian was Associate Vice President for Academic Affairs Operations at San Francisco State University (SFSU), overseeing the Academic Technology unit and coordinating the use of technology in the academic programs across the university. He worked closely with IT professionals and leaders in other units to coordinate overall information technology strategic management at SFSU. Prior to 2012, Brian was Associate Professor and Chair of the Instructional Technologies department in the Graduate College of Education at SFSU. He received his Ph.D. in Instructional Systems Technology from Indiana University Bloomington in 2002. Dr. Beatty also holds several CA single-subject teaching credentials, an M.A. in Instructional Technologies from SF State and a B.S. in Electrical Engineering from Marquette University. Dr. Beatty has more than 30 years of experience as a classroom teacher, trainer, and instructional designer at schools, businesses, and the US Navy.

This content is provided to you freely by EdTech Books.

Access it online or download it at https://edtechbooks.org/hyflex/Acknowledge.

Welcome to Hybrid-Flexible Course Design!

A brief introduction to the book

Welcome to the HyFlex World

Hybrid-flexible course designs - multi-modal courses which combine online and onground (classroom-based) students - have been used successfully for more than a decade at many higher education institutions around the world with a wide variety of courses. At San Francisco State we call this design "HyFlex"; many campuses use this term and many others use their own term. This book uses the terms "Hybrid-Flexible" and "HyFlex" interchangeably, often using the more general term "Hybrid-Flexible" to open a chapter and the shorter term "HyFlex" when referring to detailed approaches. Other names for the HyFlex approach are referenced and used when describing other specific implementations, especially in the case reports of Unit III.

Often the initial impetus for developing a Hybrid-Flexible approach is a very real need to serve both online and onground students with a limited set of resources (time, faculty, space) which leads to a multi-modal delivery solution. When students are given the freedom and ability to choose which mode to participate in from session to session, they are able to create their own unique hybrid experience. Locally, we have started acknowledging the student control aspect, sometimes referring to HyFlex as delivering a "student-directed hybrid" learning experience.

This book provides readers with strategies, methods, and case stories related to Hybrid-Flexible (HyFlex) course design so that they (you!) may make informed and thoughtful decisions about using it themselves and begin their own HyFlex course (re)design journey. More specifically, based on the needs identified for their specific context, readers will be able to:

a. gain an awareness of the HyFlex design,
b. determine if and how HyFlex course design could help them solve critical needs,
c. find their own innovative HyFlex solution to their specific challenges,
d. begin the HyFlex implementation process using strategies similar to those used by instructors described in this book, and
e. take advantage of emerging opportunities to improve their education practice, enabling them to better serve more students.

The book describes the fundamental principles of HyFlex design, explains a process for design and development, and discusses implementation factors that instructors, designers, students and administrators have experienced in a wide variety of higher education institutions; public and private, larger and small, research-intensive, comprehensive and community colleges. These factors include the drivers, the variations in implementation approaches and constraints, and the results (e.g., student success metrics, student satisfaction). A series of worksheets in Chapter 1.4 provides specific guidance that can be used by individuals or teams engaging in HyFlex design projects at their own institution. Case reports in Unit III from institutions and faculty who have successfully implemented HyFlex-style courses provide a rich set of real-world stories to draw insights for a reader's own design setting.

Unit I: Hybrid-Flexible Course Design to Support Student-Directed Learning Paths

Unit I chapters explain the rationale for offering Hybrid-Flexible courses and programs, answering important questions related to "why?". Chapter 1.1 Beginnings provides one story of the development of the HyFlex design emerging from the background of multi-modal and blended or hybrid instructional practice in higher education. This chapter also describes other approaches identical to HyFlex that use different terms for naming, and several very similar approaches that support varied student particpation modes, but don't meet our standard baseline requirements to be considered HyFlex. Chapter 1.2 Costs and Benefits for Hybrid-Flexible Courses and Programs describes many of the common costs and benefits of implementing a HyFlex approach that instructors, students and adminstrators experience. Discussion of specific cost-benefit relationships are included in other chapters as well, especially in the Unit III case reports, but chapter 1.2 brings them together in a concise discussion. Chapter 1.3 Chapter 1.3 Values and Principles of Hybrid-Flexible Course Design explains the fundamental values and universal principles guiding HyFlex course design. Four principle pillars provide a foundation from which designers can build effecive courses and programs that meet students' needs and implement effective practices. Chapter 1.4 Designing a Hybrid-Flexible Course explains a simplified instructional design approach adapted for the HyFlex course context. The design guidance in this chapter is meant to complement and supplement effective design practice already in place and followed by instructors (and design teams) in their single-mode courses.

Unit II: Implementation and Adoption of Hybrid-Flexible Instruction

Chapters in Unit II explain how to build and deploy Hybrid-Flexible courses with specific focused discussions on the varied experiences and perspectives of major stakeholders: faculty, students, administration, and institution. These chapters discuss many of the detailed issues, experiences and design decisions that must be managed in most Hybrid-Flexible implementations; specific solutions in a variety of cases are explored in Unit III. Chapter 2.1 Teaching a Hybrid-Flexible Course describes the experience of instructors who have taught using this approach, focusing on common challenges and successes they've encountered. Chapter 2.2 Learning in a Hybrid-Flexible Course reports significant and common student experiences associated with learning in a HyFlex environment. Chapter 2.3 Supporting Hybrid-Flexible Courses and Programs explains many of the administrative factors that accompany HyFlex approaches: scheduling, workload management, logistics and more. Chapter 2.4 Expanding the Implementation of Hybrid-Flexible Courses and Programs explores the ways institutions have (or might) manage the expanding adoption of the HyFlex approach by instructors and administrators. Chapter 2.5 Evaluating the Impact of Hybrid-Flexible Courses and Programs reviews some of the research already conducted to assess the value of the HyFlex approach in courses and programs. Supplementing Chapter 2.5 is a bibliography (in Appendix A) of over 50 articles and presentations addressing Hybrid-Flexible-type approaches by any name. This bibliography is continuously revised as new research is published.

Unit III: Hybrid-Flexible Implementations Around the World

Chapters in Unit III provide specific case reports from institutions and faculty who have direct experience implementing Hybrid-Flexible courses in their own unique context. Each chapter explains 1) the need for Hybrid-Flexible, 2) the design (product and process), 3) the implementation experience, and 4) an impact evaluation (when available). Chapter authors have all designed their own Hybrid-Flexible courses either as faculty or instructional designers working with faculty. Their voices and stories provide a rich tapestry that is itself an example of a hybrid (mixed methods) flexible (changing, adaptive) approach to Hybrid-Flexible course design.

This is an "open" textbook

This open textbook is offered to you under a CC-BY open content license. This license lets anyone distribute, remix, tweak, and build upon this work, even commercially, as long as the author(s) of the original creation are credited. This is the most accommodating of the creative commons licenses offered and is recommended for maximum dissemination and use of licensed materials. [For more on Creative Commons licenses, see: https://edtechbooks.org/-qi] The authors of the chapters and case reports are enthusiastically sharing their ideas, strategies, practices and their stories for you to learn from and remix in any way you need to as you extend your own practice and better serve students around the world.

We are making a difference, and invite you to join with us.

Unit I. Hybrid-Flexible Course Design to Support Student-Directed Learning Paths

Unit I chapters explain the rationale for offering Hybrid-Flexible courses and programs, answering important questions related to "why?".

- **Chapter 1.1 Beginnings: Where Does Hybrid-Flexible Come From?** provides one version of the development story of HyFlex design emerging from the background of multi-modal and blended or hybrid instructional practice in higher education.
- **Chapter 1.2 Costs and Benefits for Hybrid-Flexible Courses and Programs** describes many of the common costs and benefits of implementing a HyFlex approach that instructors, students and adminstrators experience. Discussion of specific cost-benefit relationships are included in other chapters as well, especially in the Unit III case reports, but chapter 1.2 brings them together in a concise discussion.
- **Chapter 1.3 Values and Principles of Hybrid-Flexible Course Design** explains the fundamental values and universal principles guiding HyFlex course design. Four principle pillars provide a foundation from which designers can build effecive courses and programs that meet students' needs and implement effective practices.
- **Chapter 1.4 Designing a Hybrid-Flexible Course** explains a simplified instructional design approach adapted for the HyFlex course context. The design guidance in this chapter is meant to complement and supplement effective design practice already in place and followed by instructors (and design teams) in their single-mode courses.

Beginnings
Costs and Benefits for Hybrid-Flexible Courses and Programs
Values and Principles of Hybrid-Flexible Course Design
Designing a Hybrid-Flexible Course

Beginnings

Where Does Hybrid-Flexible Come From?

Brian J. Beatty

The Origins of Hybrid-Flexible (HyFlex) Course Design

Surfacing the Need - 2005

The development of the Hybrid-Flexible (HyFlex) course design in the Instructional Technologies (ITEC) graduate program at San Francisco State University was driven by several important institutional, faculty and student factors. Institutional factors include the location, instructional history, and enrollment characteristics of the university. Faculty factors include the capacity and capability to teach online and in the classroom and the motivation to try something new to better serve students. Student factors included the academic interests, technical abilities and time and location constraints/restraints of the current student enrollment. Many of these factors are more fully described in other chapters of this book, specifically in Chapter 1.2. Costs and Benefits for Hybrid-Flexible Courses and Programs, Chapter 2.1. Teaching a Hybrid-Flexible Course (faculty perspective), Chapter 2.2. Learning in a Hybrid-Flexible Course (student perspective), and Chapter 2.3. Supporting Hybrid-Flexible Courses and Programs (administrative perspective).

We began this journey after a department meeting in the 2005 academic year where we realized that enrollment concerns had to be addressed, and that our successful residential MA program needed to change to attract more students and to provide more participation options for current students. A suggestion was made that we "move the program online" to increase enrollment by opening up access to the instructional program to students who could not attend class in person. As it became clear that we needed an online option in our MA program, we were faced with the significant challenges of 1) no institutional support to build and grow a fully online program, 2) no proven faculty expertise in teaching fully online courses or serving fully online students, and 3) all current students were regionally located and their interest in a fully online program (which in a small program like ours would mean giving up the classroom program) was unknown but not expected to be high. Trying to implement a fully online program within even a few years seemed like an impossible task, given our conditions.

We first looked at what was already being done (and written about) in higher education. Did a course or program design already exist that would meet our needs?

Blended and Hybrid Learning Environments ca. 2006

As it became clear to us that some combination of online and classroom instruction would be needed, we assessed the current understanding of best practice. Blended learning in hybrid courses was well established as a legitimate (and sometimes superior) instructional format in higher education. (Means, Toyama, Murphy, Bakia, & Jones, 2010) As we

sought solutions to the problem of needing to serve regional students with online and classroom options that allowed maximum student choice in participation mode, we searched for methods already being used successfully elsewhere. We wanted to build upon the work of others, even if all we could find was a solid foundation from which we could craft our own design.

Within the blended/hybrid literature, we found excellent design guidance for creating teacher-directed blends or hybrid formats, but nothing that seemed to provide the student-directedness we wanted to provide. Most academic discussion and design guidance for blended and hybrid formats also required students to participate in both classroom and online activities or sessions, so there was no explicit support for students who want or need to be always online or always in the classroom.

- Sands (2002) provides a principle-based approach to designing a hybrid environment that blends classroom and online instruction under the control of the instructor. Students are expected to participate in the specified mode for each activity or lesson as designed by the instructor (or course designer).
- Orey (2002) describes a format that includes both classroom and online (distance) students in the same course sections. These online students typically are always remote and seem to have no opportunity for attending class in person (due to geography rather than teacher control). In this situation, we find more useful guidance for HyFlex, since there are always online students and always classroom students, but there is no discussion or guidance for supporting student choice of participation mode.
- Martyn (2003) describes a hybrid online model which is essentially a traditional classroom with online instructional activities; participation mode directed by the instructor. Like others, the presumption of faculty (or course designer) knowing what is "best" for every student largely ignores individual student factors (schedule or location conflicts) that are often more powerful in controlling participation than is faculty direction.
- Rasmussen (2003) presents an interesting and robust study of student and instructor interaction in a blended learning environment that mixes "always online" students with "always classroom" students. Online students in this case are remotely located and participate synchronously (at the same time) with classroom students. There is no reported flexibility for students to change from one mode to the other from week to week. (No "Flex".)
- Bonk and Graham (2006) provides a comprehensive handbook of the blended learning landscape in the early 2000's with many specific cases of localized solutions to challenges which are well-addressed by unique blends of online and face-to-face instruction. Graham (2006) defines blended learning, explains three primary axes of blending and provides a framework of design guidance to support instructors and instructional designers in creating "best" blends for given situations. Like other design guidance, the assumption for most (or perhaps all) situations is that all students will participate in all activities, whether online or in the classroom, presumably leading to effective learning for all.
- Power (2008) represents another direction for blended learning development in the mid-2000's; blending asynchronous and synchronous instructional modes for online students. This approach, usually called "blended online learning" could potentially provide more "at a distance" flexibility for students but only if the student is given control over their participation (synchronous or asynchronous). Additionally, since this design was developed as a more effective approach than classic video-conference-based distance education for students who are always remote, there is no provision for a classroom learning environment.

Solving our Problem: The Genesis of HyFlex

Clearly, a traditional blended learning approach was not going to meet our requirements. We decided that we needed a "bridge" to online; an approach to serving fully online students without abandoning our current classroom students. (Beatty, 2007a) With minimal college support (one course release for one term), I embarked on the HyFlex journey by adding a simple (yet effective) online student path in one of my traditional courses. (Beatty, 2006) Those early graduate students were enthusiastic design partners for a few terms as we tried new approaches, different technologies, and gathered data about participation patterns and student academic performance. (Beatty, 2007b) Within a year, we started to realize that we were doing something much more than building a bridge to a fully online program, we were in

fact building a new type of program, one that used hybrid classes (blending online and classroom participation modes) to provide flexible learning paths and allowed students to decide for themselves which path was "best" for them on a daily or weekly basis.

We needed a name for this approach, and settled on a portmanteau of hybrid and flexible: HyFlex.

There are other systemic organizational drivers that surface additional needs for HyFlex or similar approaches that provide flexibility for student participation. (See the case study chapters in Unit III for examples from other universities.) In the past decade, like many graduate programs in the U.S., many other graduate programs at SF State have been experiencing similar pressure to bolster declining enrollments by attracting new students and retaining current students. Some faculty in other programs (in multiple colleges) have use HyFlex courses to provide additional participation options for students, much like we did with the ITEC program. Within the academic leadership of the university, there has been growing interest in attracting students from outside our traditional region; HyFlex courses provide the capacity for programs to serve remote students in additional to providing convenience and alternatives to regional students.

Like many institutions, SF State has experienced challenges to maintaining university operations, including the instructional program, during local and regional emergencies such as, transit strikes, electrical outages, building closures, wildfires (and the smoke they generate), and major storms. University leadership has occasionally expressed interest in expanding the use of HyFlex, since for many emergency situations, the online instructional mode may remain operational even when the campus is locally closed, allowing instructional "business" to be continued. To date, however, no substantial strategic business continuity-related implementation effort has been launched.

With the growth of HyFlex at SF State beyond the original ITEC graduate program context, and in synchronicity with an academic senate process establishing high-level policy regarding online education at the university, we developed an official definition of HyFlex courses so that within our institution, we could ensure a consistent understanding of what HyFlex meant to students, faculty, and administrators. (This policy took several years of drafting, discussion, and negotiation. Thankfully, including the HyFlex definition was *not* a controversial aspect.)

> "In a **Hybrid Flexible (HyFlex) Class,** *students can choose to attend class either in an assigned face-to-face environment or in an online environment, synchronously or asynchronously. Online technology is primarily used to provide students with flexibility in their choice of educational experience, and to communicate with the faculty member inside and outside of office hours." (Original SFSU Academic Senate Policy F12-264)*

Four years later, the academic senate subsequently simplified the definition language:

> "**HyFlex courses** *are class sessions that allow students to choose whether to attend classes face-to-face or online, synchronously or asynchronously." (SFSU Academic Senate Policy S16-264, available online:* https://edtechbooks.org/-pAkt

Other Course Design Formats in the Hybrid-Flexible Genre

There have been others working on similar approaches to combining classroom students and online students; some very similar – even identical – to HyFlex and others with significant differences from HyFlex. In this section, I'll highlight some of the major efforts I am aware of; there are certainly others not represented here. (If you think another effort should be described, please let me know in the comments for this chapter, or by other means.)

Many of these instructional formats were developed during the same timeframe that we were reporting our work with the HyFlex course design, and others came afterward. All use their own branding (name, primarily) for their own purposes, whether or not they were aware of the HyFlex approach at the time. (Note: there are many other cases of

faculty and institutions using the term Hybrid-Flexible or HyFlex; just as appropriately. See Appendix A. Bibliography of Hybrid-Flexible Literature for reports from many of these cases.)

Mode-Neutral (2008)

Smith, Reed, and Jones (2008) describe the "Mode Neutral" instructional approach as one in which "progress across modes of delivery at any point throughout their study when their preferences, requirements, personal and professional commitments demand, without compromising their learning experience." This seems to be another approach that, at least as far as student participation options and control, is the same as HyFlex.

An important distinction between the development (or at least the description) of Mode Neutral compared to HyFlex is the emphasis in Mode Neutral of following a constructivist philosophy in the design and implementation of a course. The emphasis on the constructivist philosophical underpinnings of Mode Neutral sets it apart as unique in important ways. Another interesting difference is the authors' perspective on the applicability of their conceptual model across the curriculum: "We argue that it is possible to adopt a singular pedagogical approach to educational programmes that is suitable for all learners." (2008, p. 2) This claim of universal applicability is not something I would ever make for the HyFlex design, nor do I agree with the presumption that one pedagogical approach is (or even can possibly be) suitable for all learners.

Miller (2011) describes the potential for mode-neutral teaching to transform teaching and help students develop transformative leadership abilities. The arguments put forth in this paper about the course format affording opportunity to impact the way students learn, potentially leading to the development of transformative leaders (an apparent goal in the study context of Public Administration) seem very reasonable. (If supporting the development of transformative leaders through the use of innovative course design appeals to you, you may want to read this article.)

This model implements a design that is essentially the same as HyFlex, though they have branded their approach with their own unique name.

Multi-Access Learning (2009)

Irvine (2009) defines multi-access learning as "a framework for enabling students in both face- to-face and online contexts to personalize learning experiences while engaging as a part of the same course." As described and defined by Irvine, multi-access learning allows the student to choose how to participate in course activities with respect to mode (online or face-to-face). (Irvine, Code & Richards, 2013)

This model implements a design that is essentially the same as HyFlex, though they have branded their approach with their own unique name.

FlexLearning (2012)

In 2011, the Lehigh Valley Campus of the Pennsylvania State University (PSU-LV) launched the "FlexLearning" program. (McCluskey, Shaffer, Grodziak, & Hove, 2012). The mission of this program was: "Penn State Lehigh Valley will effectively address the various and diverse learning needs of our twenty-first century students through a comprehensive initiative which offers high quality, interactive, and engaging courses in a flexible delivery mode." (2012, p. 4) The core values of this program were to 1) Offer high quality academic courses, 2) Incorporate the benefits of flexible learning modalities, 3) Proactively and innovatively utilize emerging educational technologies, 4) Provide students with options through flexible delivery modes, and 5) Contribute to increased campus enrollment. In their strategic plan for FlexLearning, they begin their definition of the design by describing the experience:

"Consider the option of taking a course either in the traditional face-to-face, blended or hybrid, or completely online, that is, all these options in one and the same course. A student may even choose to start to take a course in one mode of delivery and later decide to change to a different mode of delivery with no learning deficit.

In such a course, the faculty member designs a course with the learning needs of the students as the primary concern so as to allow students to go from face-to-face to online and vice versa. The faculty member provides course content and activities within an instructional structure that would allow for maximum engagement of student appropriate for both face-to-face and online.

That is what we are calling FlexLearning." (2012, p. 13)

This model implements a design that is essentially the same as HyFlex, though they have branded their approach with their own unique name.

Converged Learning (2012)

Taylor and Newton (2012) describes the development of the "converged learning" instructional approach used at Southern Cross University across multiple campuses in Australia. As their university was designing courses and programs to meet the needs of large populations of both on-campus and distance students, a large team of faculty (39) and designers (10) started designing for both types of students in the same courses – combining online and classroom students and providing student choice in participation mode much like HyFlex. Their report on the institutional change effort that introduced converged learning is highlighted in Chapter 2.5. Evaluating the Impact of Hybrid-Flexible Courses and Programs.

This model implements a design that is essentially the same as HyFlex, though they have branded their approach with their own unique name.

Peirce Fit ® (2014)

The Peirce Fit ® model was developed at Peirce College as a way to allow students to choose between classroom and online participation on a weekly (or session) basis, creating their own "best fit" to meet their own personal schedule and location needs. (Littlefield, 2014; Donovan, 2018; Beatty, Littlefield, Miller, Rhoads, Shaffer, Shurance, & Beers, 2016) The Peirce Fit ® format began as the "FLEX" course design, but changed as the college found success with FLEX and made strategic decisions regarding the scope of the effort, branding the approach, and implementing their Hybrid-Flexible design programmatically. The Peirce Fit ® story and their evaluation of their program's impact are presented as a case study in Unit III. of this book. (See Chapter 3.1 Fitting Flexibility Across the Curriculum.) The college also provides a comprehensive informational website explaining Peirce Fit ® to potential students and others. See https://www.peirce.edu/fit for more information about this approach.

This model implements a design that is essentially the same as HyFlex, though they have branded their approach with their own unique name.

Multi-Options (2014)

Another approach that seems to be another form of HyFlex is called "Multi-Options". As described by Edler (2018), "Multi-Options is a teaching methodology that allows students to choose the format in which they will attend class. Weekly, they have the choice of attending the face-to-face session, joining synchronously online, or viewing the class asynchronously online at their convenience. Each choice has its own requirements developed to keep the workload uniform for all students. Advantages include conservation of faculty, avoiding the cancellation of poorly populated classes, promoting student independence, and allowing for maximum student flexibility regarding learning style, scheduling needs, and lifestyle. Although technological support and changes to the faculty culture are challenges, initial trials have been successful." (p. 110)

This model implements a design that is essentially the same as HyFlex, though they have branded their approach with their own unique name.

Flexibly Accessible Learning Environment (FALE) (2018)

In 2018, the University of Georgia developed an approach to combining online and classroom students that they call "Flexibly Accessible Learning Environment" (FALE). (Hill, Yang, Kim, Oh, Choi, Branch, Lee, & Keisler, 2018). Their stated definition (found at https://edtechbooks.org/-PjR is: "Flexibly accessible means that students can attend in one of three modes: face-to-face, synchronous, and asynchronous. Further, students can change how they chose to interact within the course week to week, thus meeting real-time needs and demands of everyday life. Janette Hill." (UGA website, nd.)

This model implements a design that is essentially the same as HyFlex, though they have branded their approach with their own unique name.

Blendflex (2016)

Carol Lee, director of educational technology at Central Georgia Technical College developed an approach to combining online and classroom students with student choice (flexibility) to provide more options supporting student participation and engagement, designed to improve student success in academic programs. (Central Georgia Technical College, nd.; Leiberman, 2018; University Business, 2017) According to Leiberman, the blendflex mode allows face-to-face, synchronous online and asynchronous online experiences that students can choose to attend. They can attend as many or as few face-to-face sessions as they want, as long as they complete the rest of the course online. Lee confirms this approach: "They can seamlessly at any time during the semester move back and forth within that course delivery." (Carol Lee, as quoted in Leiberman, 2018)

This model implements a design that is essentially the same as HyFlex, though they have branded their approach with their own unique name.

Comodal (2016)

Teachonline.ca (2017) describes an approach used by Frederic Audet (and others) at Laval University in Quebec City, Canada that allows students three options for participation: 1) attend the live class in person, 2) join the class live (simultaneously) online via a webinar, or 3) listen to the recording of the class on his or her own time. Audet reports "… no differences in learning outcomes or completion rates between the different modes of study on these courses, and found it takes no more lesson preparation time than a traditional lecture, once the system is set up." (2017) Gobeil-Proulx (2019) uses the term "comodal" to refer to Hybrid-Flexible (HyFlex) courses where the student experience was studied at four different locations of Laval University. "A course offered in the HyFlex format can be followed face-to-face or remotely by students, which allows them to choose weekly the mode that suits them best." (2019, p. 56) It seems that the authors prefer to use the term "comodal" rather than HyFlex; there seems to be no practical difference in the course design, however.

This model implements a design that is essentially the same as HyFlex, though they have branded their approach with their own unique name.

The following design approaches share many characteristics with HyFlex, but all seem to differ in at least one fundamental way so they are not truly Hybrid-Flexible as we define the term. They are included here to help us explain the HyFlex design and explore the edges of HyFlex in practice. As well, each approach is certainly a valid instructional design of its own, solving an important local need for some form of multi-mode instruction. The design guidance and research provided in the studies referenced can help HyFlex instructors and designers as well.

Flexible Hybrid (2014)

He, Gajski, Farkas, & Warschauer (2014) use the term "flexible hybrid" to describe their modified hybrid course that includes three different instructional formats: online, hybrid (student controlled), and flipped. Findings from their detailed and comprehensive study of the relationship between student choices of instructional format and corresponding performance factors (exam grades, self-reported perceptions, study effort, etc.) are reviewed in Chapter 2.5 Evaluating the Impact of Hybrid-Flexible Courses and Programs.

Synchronous Learning in Distributed Environments (SLIDE) (2011)

Stewart, Harlow, and DeBacco (2011) report on a project describing research on the student experience in multi-site graduate courses, with some instruction happening with students in the local classroom and others meeting physically elsewhere but connected to the local classroom where the instructor is located. "Classes sometimes met face-to-face in the same physical location; at other times part of the class met physically elsewhere. Yet all were linked through the virtual space. … Most of the interaction occurred between the local and distance learners by way of cultural guides, local students assigned to host a distance learner through Google Video chat. The distance learners were able to receive real-time attention from the instructor and were able to share differing perspectives that contributed to increased satisfaction in the course." (2011, p. 357)

This design shares some aspects with classic HyFlex, though it seems that students were NOT co-located (regional) so no flexing would be likely (or perhaps even possible). This approach is a good example of the blended synchronous environment described below.

gxLearning (2011)

Verhaart and Hagen-Hall (2012) describe a course design they call "gxLearning" (geographically extended). This paper reports on the use of two forms of distant synchronous connection technologies, room-based video teleconferencing and desktop webconferencing and compares the student experience in each. Day and Verhaart (2016) reports on approximately five years of development research using three case studies of gxLearning with varying technologies, pedagogical approaches and instructional theories applied to each case. Interestingly, one of their major findings is very similar to that reported in initial studies of HyFlex, the importance of high quality audio/video. "In all cases, the quality of the hardware and infrastructure had an impact on the student experience, whether it be lesser computing power, slow internet connection, or under spec'd audio or video equipment." (2016, p. 190).

Blendsync (2011)

Blended Synchronous (Blendsync) learning developed as an approach combining classroom (onground) students and online students with synchronous communication systems; most commonly web conferencing tools. This design tradition is a natural outgrowth of some forms of classic distance education, where remote groups of students were connected to a local group of students with an instructor using a teleconferencing system (VTC). The advent of web conferencing software and the growing ubiquity of high speed network connections allowed for more individual remote connections rather than requiring remote users to be co-located to use an expensive video teleconferencing system and its (often) dedicated connection.

A major design and research effort launched in Australia and New Zealand in 2011, with the stated goal: "Blended Synchronous Learning ('BlendSync') Project sought to investigate how three specific technology-based tools – video conferencing, web conferencing and 3D virtual worlds – could best be used to support activities that engage Higher Education students and teachers in effective real-time learning irrespective of their location." (Bower, Kennedy, Dalgarno, Lee, & Kenney, 2014, p.12) This multi-year project, involving many faculty and staff from several universities, conducted multiple case studies looking at various aspects of blended synchronous learning environments in practice, in the education setting. (Bower, Kennedy, Dalgarno, Lee, & Kenney, 2015) The project developed the "Blended Synchronous Learning Handbook" (Bower, Kennedy, Dalgarno, Lee, & Kenney, 2014), which defines blended synchronous learning as: "Learning and teaching where remote students participate in face-to-face classes by means of rich-media synchronous technologies such as video conferencing, web conferencing, or virtual worlds." (2014, p. 11)

Remote Live Participation (RLP) (2018)

Another approach that is very much similar to the blended synchronous online format has been called Remote Live Participation. Marquart, Englisher, Tokeida, Samuel, Standlee, and Telfair-Garcia (2018) report on a project combining online and face-to-face students in two course at Columbia University. Their guiding question was "Can online students be fully integrated into residential courses via web conferencing?" In their case report, they share major lessons learned

from their initial pilot. Though this approach does combine online and classroom students in the same course sections, like HyFlex does, there doesn't seem to be any intentional support for students making weekly or session-by-session choices about participation mode. As with other blended synchronous-type formats, this approach can provide helpful design guidance for those implementing HyFlex courses that include an online synchronous participation option.

Is your Course Design Approach Missing?

In this book, and in our work with Hybrid-Flexible (HyFlex) course designs locally and internationally, we often encounter differing approaches to blending participation formats in various hybrid approaches. At a high level, we constrain our use of the HyFlex label to those that are purposefully designed to 1) combine at least two complete learning paths; classroom and at least one online, and 2) support ongoing student choice (flexibility) among these learning paths. If a design doesn't meet these two basic criteria, we don't consider it to be Hybrid-Flexible no matter what name is used for branding.

We're certain that there are other instructional approaches being used that are similar – perhaps even identical – to the Hybrid-Flexible approaches described in this book. If you know of another effort that should be included, please let me know in the comments for this chapter, or contact be by other means.

References

Beatty, B. (2006, October). *Designing the HyFlex World- Hybrid, Flexible Classes for All Students*. Paper presented at the Association for Educational Communication and Technology International Conference, Dallas, TX.

Beatty, B. (2007a). *Transitioning to an Online World: Using HyFlex Courses to Bridge the Gap.* In C. Montgomerie & J. Seale (Eds.), Proceedings of ED-MEDIA 2007--World Conference on Educational Multimedia, Hypermedia & Telecommunications (pp. 2701-2706). Vancouver, Canada: Association for the Advancement of Computing in Education (AACE). Retrieved April 5, 2019 from https://edtechbooks.org/-ohe.

Beatty, B. (2007b, October). Hybrid Classes with Flexible Participation Options – If you build it, how will they come? *Proceedings of the Association for Educational Communication and Technology International Conference*, Anaheim, CA.

Beatty, B., Littlefield, C., Miller, J., Rhoads, D., Shaffer, D., Shurance, M. and Beers, M. (2016, April). *Hybrid Flexible Course and Program Design: Models for Student-Directed Hybrids*. Paper and panel session presented at the OLC Innovate 2016 Conference, New Orleans, LA.

Bonk, C. J. & Graham, C. R. (2006). *Handbook of blended learning: Global Perspectives, local designs.* San Francisco, CA: Pfeiffer Publishing.

Bower, M., Kennedy, G. E., Dalgarno, B., Lee, M. J. W., and Kenney, J. (2014). *Blended synchronous learning: A handbook for educators.* Retrieved from http://blendsync.org/handbook/

Bower, M., Dalgarno, B., Kennedy, G.E., Lee, M., & Kenney, J. (2015). Design and implementation factors in blended synchronous learning environments: outcomes from a cross-case analysis. *Computers & Education, 86*, 1-17.

Central Georgia Technical College (nd.). *BlendFlex Courses.* Available from: https://www.centralgatech.edu/wp-content/uploads/pdfs/academics/online/BlendFlexInfo.pdf

Day, S. & Verhaart, M. (2016). Determining the requirements for geographically extended learning (gxLearning): A multiple case study approach. In S. Barker, S. Dawson, A. Pardo, & C. Colvin (Eds.), *Show Me The Learning.* Proceedings ASCILITE 2016 Adelaide (pp. 182-191).

Donovan, S. A. G. (2018). *Mixed methods study of the fit instructional model on attributes of student success* (Order No. 10935064). Available from ProQuest Dissertations & Theses Global: The Humanities and Social Sciences Collection. (2115548318). Retrieved from https://search.proquest.com/docview/2115548318?accountid=13802

Elder, S. J. (2018). Multi-Options: An Innovative Course Delivery Methodology. *Nursing Education Perspectives 39*(2), pp. 110-112.

Gobeil-Proulx, J. (2019). La perspective étudiante sur la formation comodale, ou hybride flexible. [What do university students think about hybrid-flexible, or HyFlex courses?] *Revue internationale des technologies en pédagogie universitaire*, *16*(1), pp. 56-67. Available online: https://doi.org/10.18162/ritpu-2019-v16n1-04

Graham C. R. (2006). Blended Learning Systems: Definition, Current Trends, and Future Directions. In C. J. Bonk and C. R. Graham (Eds.) *Handbook of blended learning: Global Perspectives, local designs.* San Francisco, CA: Pfeiffer Publishing. (pp. 3-21).

He, W., Gajski, D., Farkas, G., Warschauer, M. (2015). Implementing flexible hybrid instruction in an electrical engineering course: The best of three worlds? *Computers & Education, vol 81*, pp.59-68.

Hill, J., Yang, X., Kim, E. E., Oh, J, Choi, I., Branch, R. M., Lee, H., & Keisler, B. (2018). *Creating a Flexibly Accessible Learning Environment.* Conference presentation at Association for Educational Communications and Technology Annual Convention. Kansas City, MO. (2018, October).

Lieberman, M. (2018). Introducing a New(-ish) Learning Mode: Blendflex/Hyflex. *Inside Higher Ed (January 24, 2018*). Available from: https://www.insidehighered.com/digital-learning/article/2018/01/24/blendflex-lets-students-toggle-between-online-or-face-face

Irvine, V. (2009). The Emergence of Choice in "Multi-Access" Learning Environments: Transferring Locus of Control of Course Access to the Learner. In G. Siemens & C. Fulford (Eds.), Proceedings of ED-MEDIA 2009--World Conference on Educational Multimedia, Hypermedia & Telecommunications (pp. 746-752). Honolulu, HI, USA: Association for the Advancement of Computing in Education (AACE). Retrieved October 1, 2019 from https://edtechbooks.org/-ZkWb.

Irvine, V., Code, J., & Richards, L. (2013). Realigning higher education for the 21st century learner through multi-access learning. *Journal of Online Learning and Teaching*, *9*(2), 172.

Littlefield, C.M. (November, 2014). *FLEX: The Next Boost in Course Delivery*. Round Table Presentation, at the annual conference of The Council for Adult & Experiential Learning (CAEL), Chicago, IL.

Marquart, M., Englisher, M., Tokieda, K., and Telfair-Garcia, A. (2018, February 22). *One class, two modes of participation: Fully integrating online students into residential classes via web conferencing.* Poster presented at the Columbia University Center for Teaching and Learning's Celebration of Teaching and Learning Symposium, New York, NY. doi:10.7916/D8KW6TK3.

Martyn, M. (2003). The hybrid online model: Good practice. *Educause Quarterly, 26*(1), 18–23.

McCluskey, C. P. S., Shaffer, D. R., Grodziak, E. M., & Hove, K. W. (2012). *Strategic Plan on FlexLearning*. The Pennsylvania State University Lehigh Valley campus, Center Valley, PA.

Means, B., Toyama, Y., Murphy. R., Bakia, M., and Jones, K. (2010). *Evaluation of Evidence-based Practices in Online Learning: A Meta-analysis and Review of Online-learning Studies*. Washington, D.C.: U.S. Department of Education.Orey, M. (2002, February). One year of online blended learning: Lessons learned. In *Annual Meeting of the Eastern Educational Research Association*, Sarasota, FL.

Miller, W. (2011). Mode-neutral and the need to transform teaching. *Public Administration Quarterly*, *35*(4), 446-465.

Power, M. (2008). The Emergence of a Blended Online Learning Environment. *MERLOT Journal of Online Learning and Teaching 4(*4). Available online: https://edtechbooks.org/-aGx

Rasmussen, R. C. (2003). *The quantity and quality of human interaction in a synchronous blended learning environment.* Doctoral dissertation. Brigham Young University. Available from: ProQuest Dissertations & theses. (UMI No. 305345928).

San Francisco State University Academic Senate (2012). Online Education Policy S12-264 (Old). Available from: https://edtechbooks.org/-VWsZ

San Francisco State University Academic Senate (2016). Online Education Policy S16-264. Available from: https://edtechbooks.org/-msh

Smith, B., Reed, P., & Jones, C. (2008). 'Mode Neutral' Pedagogy, European Journal of Open, Distance and e-Learning. https://edtechbooks.org/-nba

Stewart, A. R., Harlow, D. B., & DeBacco, K. (2011). Students' experience of synchronous learning in distributed environments. *Distance Education, 32*(3), 357-381.

Taylor, J. A., and Newton, D. (2012). Beyond Blended Learning: A case study of institutional change at an Australian university. *Internet and Higher Education 18*(2013) pp. 54-60.

TeachOnline.ca (2017). *L'enseignement Comodal: Dual Mode Teaching in Business Administration at Laval University, Québec*. Available online: https://teachonline.ca/pockets-innovation/lenseignement-comodal-dual-mode-teaching-business-administration-laval-university-quebec

University Business (2017). Models of Excellence 2017. *University Business, 20*(8), 37-41.

Verhaart, M. & Hagen-Hall, K. (2012). *gxLearning, teaching to geographically extended classes.* In M. Lopez, M. Verhaart (Eds.) Proceedings of the 3rd Annual Conference of the Computing and Information Technology Research and Education of New Zealand Conference (Incorporating the 25th NACCQ Conference), Christchurch, New Zealand. October 7-10. pp 75-81.

Brian J. Beatty

San Francisco State University

Dr. Brian Beatty is Professor of Instructional Technologies and co-coordinator of the Instructional Design and Technology MA program in the Department of Equity, Leadership Studies and Instructional Technologies at San Francisco State University. Brian's primary areas of interest and research include social interaction in online learning, flipped classroom implementation, and developing instructional design theory for Hybrid-Flexible learning environments. At SFSU, Dr. Beatty pioneered the development and evaluation of the HyFlex course design model for blended learning environments, implementing a "student-directed-hybrid" approach to better support student learning.

Previously (2012 – 2020), Brian was Associate Vice President for Academic Affairs Operations at San Francisco State University (SFSU), overseeing the Academic Technology unit and coordinating the use of technology in the academic programs across the university. He worked closely with IT professionals and leaders in other units to coordinate overall information technology strategic management at SFSU. Prior to 2012, Brian was Associate Professor and Chair of the Instructional Technologies department in the Graduate College of Education at SFSU. He received his Ph.D. in Instructional Systems Technology from Indiana University Bloomington in 2002. Dr. Beatty also holds several CA single-subject teaching credentials, an M.A. in Instructional Technologies from SF State and a B.S. in Electrical Engineering from Marquette University. Dr. Beatty has more than 30 years of experience as a classroom teacher, trainer, and instructional designer at schools, businesses, and the US Navy.

Costs and Benefits for Hybrid-Flexible Courses and Programs

Is the value worth the effort associated with Hybrid-Flexible course implementation?

Brian J. Beatty

When is implementing a Hybrid-Flexible course worth the cost?

The guiding question for this chapter is one that you or your team will have to answer for yourselves and perhaps for your institution. The Hybrid-Flexible (HyFlex) course design supports student-directed learning in several important ways that most other course formats cannot due to their inflexible approach to student participation. A few of the most important benefits are explained below and in other chapters of this book. Yet these benefits come at a cost; costs borne by students, costs borne by instructors and designers, and costs borne by administrators at institutions choosing to implement HyFlex approaches. Some of the most common and significant costs are explained in this chapter. These and other costs are further explored in other chapters, especially the case reports in Unit III.

The Value of a Student-Directed Hybrid

Why should we consider implementing a student-directed approach to class participation at all? Does shifting to a "student-directed" perspective lead to different outcomes?

Unleash the Power of Hybrid

The value of hybrid learning formats, in general, has been shown consistently over the past decade or more of educational research in higher education. A recent meta-analysis of 45 studies comparing online learning to face to face learning environments found that, "on average, students in online learning conditions performed modestly better than those receiving face-to-face instruction. (Means, Toyama, Murphy, Bakia, & Jones, 2010) The difference between student outcomes for online and face-to-face classes—measured as the difference between treatment and control means, divided by the pooled standard deviation—was larger in those studies contrasting conditions that blended elements of online and face-to-face instruction with conditions taught entirely face-to-face." (pg. ix) Two factors that contributed to the superiority of blended (hybrid) instruction over online and face to face instruction were additional learning time and additional instructional elements (resources and activities).

One challenge to the traditional approach to hybrid course design is that the student does not have the freedom to choose how to participate in assigned activities, especially regarding attendance mode, whether online or in-class. Even

though the instructor may have carefully designed activities for each mode that are well-suited for that particular mode, students with schedule conflicts, travel difficulties, or other legitimate reasons preventing their in-class participation are often left with no option but to miss those learning opportunities, typically with no alternative. Clearly this is less than ideal, and reduces the power of the hybrid learning environment. In a HyFlex class, the instructor is challenged to design effective learning experiences for students in both online and in-class modes throughout a course of study. This may remove some instructor design flexibility to require all students to participate fully online or in-class for a particular session, but well-designed instruction can almost always be created for both modes of instruction with additional effort; mostly time, but sometimes additional resources such as interactive or archiving technology solutions are needed. The additional resources provided for online students and the additional time available when the asynchronous online mode is available may directly improve learning for students who take advantage of either or both.

Mandate Class Attendance

Why put all this effort into supporting students' directing their own hybrid learning experience? Beyond the argument that students may be more able than instructors to make "best mode of participation" decisions for themselves, it may be even more important that HyFlex instruction obliterates common student excuses for non-participation associated with schedule conflicts, travel difficulties, and such. When meaningful and equivalent in-class participation alternatives are "built-in", continuously ready to support learning, and are clearly explained to all students, there is no excuse for "skipping class." In fact, instructors are supported in mandating class participation (attendance) even if an institution does not require attendance in classroom-based classes. A relatively recent (2010) meta-analysis of the impact of class attendance on student grades found a strong relationship between class attendance (in face to face instruction) and both student grades in class and overall GPA. (Crede, Roch & Kieszczynka, 2010) As long as the HyFlex course design implements effective online alternatives to in-class instructional activities, and requires student participation in either mode in each class session, the positive impact of student attendance should be present.

Is implementing a student-directed approach like HyFlex worth it to you? And to your institution? Only you can answer that question for your specific context, curriculum, students and faculty. As we begin exploring some of the main benefits and costs, you should probably ask this question from a different perspective: Under which conditions is implementing a student-directed approach like HyFlex worth the cost? Do we have those condiitions at our institution, college, department, or in our courses?

Maximize Learning Path Flexibilty for Students

Another value added to consider is the particular power of providing participation options to support students' unique needs and preferences. It is impossible to predict the "best" participation pattern for any single student, even moreso for a class of 49 students. With a HyFlex design, students have an amazing number of possible participation paths they can follow through a typical class.

For example, if we consider the first three weeks of a class with a classroom (F2F) and a single online option, we see the possible paths shown in Figure 1.2.1.

Figure 1.2.1

Possible Participation Paths for Three Weeks of Two Mode HyFlex

Week 1	Week 2	Week 3	Participation path
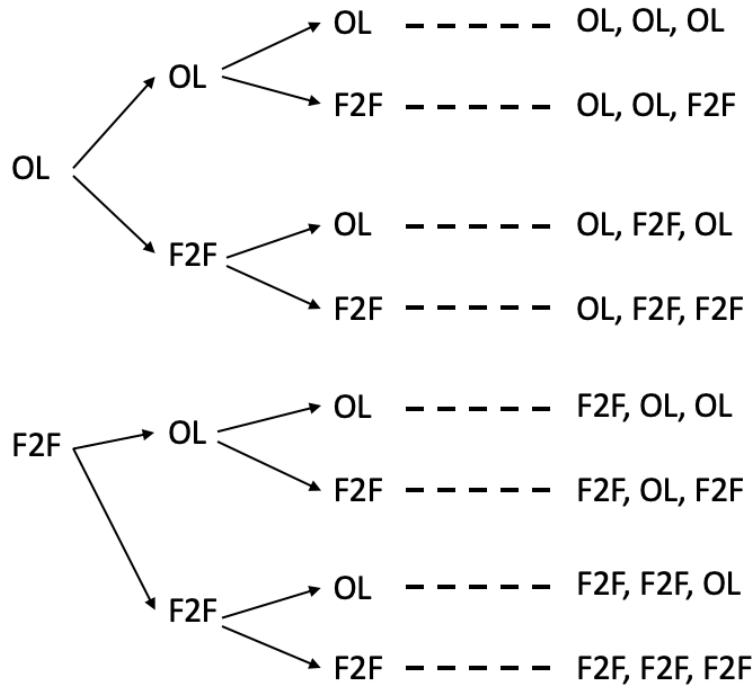
After three weeks, there are eight (2^3) different participation paths available. If we extend this to a 12 week class, we would see **4,096** possible paths (2^12) available to students. If an instructor added in a second online option, and it provided a substantially different experience for students than the other paths, we could repeat this calculation with three weekly options.

Providing a classroom option and two online options (asynchronous and synchronous) leads to **531,441** different possible participation paths (3^12) through the class.

If supporting students in choosing their own "best fit" participation path through a class is important, then the HyFlex approach may be an excellent choice.

Major Benefits

What are the major benefits of HyFlex? Below I've listed several common and significant benefits, organized by the stakeholder who is most closely associated with each.

Benefits to Students

- Increased access to courses:
  - when attending class in person is problematic, and
  - when desired classes are scheduled at the same time
- Schedule control: more control over day to day schedules associated with attending class
- More learning resources: multiple modes of participation often require more robust instructional materials, enabling richer instruction and providing additional opportunities for learning

It's no surprise that students consistently report they have difficulty managing their schedules to meet all the demands on their time: school, work, social, family, commuting. The primary benefit from HyFlex for students is usually reported as the flexible participation requirement supporting them making personal decisions about how best to participate and

complete class requirements, many times regardless of their own preference. See Chapter 2.2. Learning in a Hybrid-Flexible Course for a more detailed exploration of the benefits to students. Several case reports in Unit III describe specific student benefits realized in local implementation.

Benefits to Faculty

- Able to serve more students with the same resources (time, instructional materials)
- Develop skills and experience in teaching online without giving up classroom instruction
- Provide a built-in alternative when classroom instruction isn't possible due to scheduling conflicts

Faculty typically report that their ability to better support students who need alternatives to one-size-fits-all instruction is a highly-valued benefit with HyFlex. In addition to the three listed above, some faculty also benefit from the opportunity to conduct their own pedagogical research on HyFlex and value opportunities for subsequent publication of their work within their own academic discipline. See Chapter 2.1. Teaching a Hybrid-Flexible Course for a more detailed exploration of the benefits to faculty. Several case reports in Unit III describe specific faculty benefits addressed during local implementation.

Benefits to Administration/Institution

- Increase overall course enrollment by offering additional schedule and location flexibility to students. When implemented at a large scale, HyFlex may lead to increased per unit course load and reduced time to graduation.
- Increase individual class section (a single instance of a course) enrollment beyond the seat capacity of a physical classroom. When implemented at a large scale, HyFlex may reduce space requirements for expanding enrollment and increase the availability of bottleneck courses.
- Support innovative approaches to instruction that should contribute to greater student success, when done well. This can lead to increased student learning, provide opportunities for faculty research and publication, and create institutional marketing opportunities to external stakeholders.

The bottom line value for most administrators is supporting increased student success by providing more access (and more convenient access) to needed instruction which results in greater rates of course completion and in some cases slightly higher grades. See Chapter 2.3. Supporting Hybrid-Flexible Courses and Programs for a more detailed exploration of the administrative benefits to institutions. Several case reports in Unit III describe specific administrative benefits realized during local implementation.

Major Costs

What are the major costs to those implementing HyFlex? Below I've listed several common and significant costs associated with HyFlex implementations, organized by associated stakeholder group.

Costs to Students

- Requires personal management related to learning path: decision-making (which way to participate?) and when online is chosen, requires substantial time management skills.
- Personal and technical resources are required to participate in the online version of the course: (most commonly) hardware, network, ability to engage in online learning platforms, and the ability to learn through mediated experiences

The greatest cost, or challenge, to students is almost always the additional effort required to self-manage online participation requirements when in-class participation is not possible or desired. Many students still are not used to managing time effectively, especially when they may have low internal motivation to learn required content in required courses that aren't personally interesting to them. Distractions and non-educational options to spend time continue to proliferate in students' lives, further competing for their cognitive engagement; personal time management is a critical success factor for HyFlex students who choose online participation. See Chapter 2.2. Learning in a Hybrid-Flexible

Course for a more detailed exploration of the costs to students. Several case reports in Unit III describe specific student costs (challenges, issues) addressed during local implementation.

Costs to Faculty

- Design and develop a course that supports multiple and simultaneous modes of student participation, essentially creating both fully face to face and online formats.
- Manage the technical complexity of multi-modal instruction, especially when synchronous participation is supported.
- Administrate the participation of students in varied formats: tracking attendance and participation, practice and assessment activities, and providing interaction and feedback.

Time, time, time… the clear cost to faculty (especially when getting started) with HyFlex is the additional time it takes most to create two learning complete paths through a course in order to fully support both online and in-class participation. Some are compensated for the additional time they spend on course development; many are not, finding ways to rearrange their other work to allow for HyFlex development. Since no one can add time to their day, this is an unavoidable cost. See Chapter 2.1. Teaching a Hybrid-Flexible Course for a more detailed exploration of the costs to faculty. Several case reports in Unit III describe specific faculty costs (challenges, issues) addressed during local implementation.

Costs to Administrators/institution

- Support additional faculty development and workload; formally or informally. This may require additional financial resources.
- Provide technology-equipped classrooms to support online students as well: lecture/discussion capture, synchronous learning platform.
- Enable students to realize the scheduling flexibility value associated with HyFlex; modifications to class scheduling system, student registration system, managing clear communications

Perhaps the most important cost to the administration of an institution embarking on a HyFlex journey is the leadership's willingness to address the range of costs associated with the effort. Known costs may be substantial and must be met by decision-makers with resource control, but there must also be the commitment to surface, acknowledge and solve issues that arise during initial HyFlex implementation (and quite possibly for years to come) as innovative programs grow and attract more adoption. Though every institution has their own unique approach to academic governance (often shared among stakeholders), the high-level commitment to "do what it takes" to support a HyFlex program is a cost that must be met in order to realize the anticipated benefits to students, faculty and institution broadly. See Chapter 2.3. Supporting Hybrid-Flexible Courses and Programs for a more detailed exploration of the administrative costs to institutions. Several case reports in Unit III describe specific administrative costs (challenges, issues) addressed during local implementation.

Complete a Cost-Benefit Analysis

Before any effort to implement HyFlex is begun, whether for a single course or for an entire program or curriculum, a preliminary cost-benefit analysis has to be completed, either informally or formally. The basic guidance in this chapter should support an initial informal analysis, but when you start designing a specific HyFlex course or program, you'll find value in following a more formal approach which includes data gathering and analysis and gathering a group of stakeholders for decision-making or establishing buy-in for the effort. This CBA will explain the expected costs and benefits and can include discussion of how the cists will be met and how the benefits will be evaluated. This should support more efficient HyFlex implementation and eventual comprehensive evaluation of the effort.

In Chapter 1.4 Designing a Hybrid-Flexible Course, the initial design stage of conducting this analysis is explained further to assist you in identifying, discussing and assessing opportunities that add new value to your institution (or department/program/course), or solve difficult problems. In addition to consider the positive nature of HyFlex, the design guidance helps your team assess the expected costs and develop a plan to meet these costs at the start of the

project, or agree on an approach to meet those costs over time. Figure 1.2.1 is included here as a sample of the guidance available in Chapter 1.4.

Figure 1.2.1 Assess the Challenges and Opportunities Worksheet

HyFlex Delivery Design Worksheet Template

1. Assess the Challenges (Costs) and Opportunities (Value)

Opportunities: Adding Value		Solving Problems	
List the opportunity-related goals:	Explain how flexible delivery design would allow you to meet this goal.	List the problem-solving goals:	Explain how flexible delivery design would help meet this goal.

Challenges: Additional Costs			
Faculty	Students	Technology/Resources	Administrative
List the potential or actual costs to the faculty:	List the potential or actual costs to the students:	List the potential or actual costs associated with resources:	List the potential or actual administrative challenges:

Comments:

Page ___ of ____

CC-BY-SA-NC   Dr. Brian Beatty

References

Crede, M., Roch, S. G., and Kieszczynka, U. M. (2010). Class Attaendance in College: A meta-Analytic Review of the Relationship of Class Attendance with grades and Student Characteristics. *Review of Educational Research 80*(2), pp. 272-295.

Means, B., Toyama, Y., Murphy. R., Bakia, M., and Jones, K. (2010). *Evaluation of Evidence-based Practices in Online Learning: A Meta-analysis and Review of Online-learning Studies*. Washington, D.C.: U.S. Department of Education.

Brian J. Beatty

San Francisco State University

Dr. Brian Beatty is Professor of Instructional Technologies and co-coordinator of the Instructional Design and Technology MA program in the Department of Equity, Leadership Studies and Instructional Technologies at San Francisco State University. Brian's primary areas of interest and research include social interaction in online learning, flipped classroom implementation, and developing instructional design theory for Hybrid-Flexible learning environments. At SFSU, Dr. Beatty pioneered the development and evaluation of the HyFlex course design model for blended learning environments, implementing a "student-directed-hybrid" approach to better support student learning.

Previously (2012 – 2020), Brian was Associate Vice President for Academic Affairs Operations at San Francisco State University (SFSU), overseeing the Academic Technology unit and coordinating the use of technology in the academic programs across the university. He worked closely with IT professionals and leaders in other units to coordinate overall information technology strategic management at SFSU. Prior to 2012, Brian was Associate Professor and Chair of the Instructional Technologies department in the Graduate College of Education at SFSU. He received his Ph.D. in Instructional Systems Technology from Indiana University Bloomington in 2002. Dr. Beatty also holds several CA single-subject teaching credentials, an M.A. in Instructional Technologies from SF State and a B.S. in Electrical Engineering from Marquette University. Dr. Beatty has more than 30 years of experience as a classroom teacher, trainer, and instructional designer at schools, businesses, and the US Navy.

Values and Principles of Hybrid-Flexible Course Design

Brian J. Beatty

The Hybrid-Flexible (HyFlex) course design delivers a student-directed multi-modal learning experience. Students choose between attending and participating in class sessions in a traditional classroom (or lecture hall) setting or online environment. Online participation is available in synchronous or asynchronous mode; sometimes both and sometimes in only one online mode. When considering whether or not to offer HyFlex classes in a program or institution, it is helpful to understand the values and associated fundamental design principles that undergird the approach many have followed in more than a decade of implementation.

Four values have guided our HyFlex design effort since its beginning in 2006: learner choice, equivalency, reusability, and accessibility. (Beatty, 2007)

Fundamental Values in Hybrid-Flexible Design

- Learner Choice
- Equivalency
- Reusability
- Accessibility

The Instructional Design "Drivetrain"

Why specify fundamental values? Values about learning and instruction help instructors and instructional designers build from a solid and consistent foundation. These values help us develop learning and instructional goals, which then provide strategic direction for the selection of instructional strategies and specific activities to implement the strategies. (Reigeluth, 1983) For example, the value of "learner choice" leads to goals such as, "Students will choose to participate in XYZ learning activity in a classroom setting or in the online [virtual classroom] environment." That learning goal might lead to an instructional strategy such as "Students are provided a full set of in-class activities and a full set of online activities to choose between for every class session." At a more granular level, specific learning activities are developed to implement the strategy, such as a plan for interactive collaborative group discussion in a classroom and a corresponding plan for an interactive online discussion exercise for online students. Comprehensive design guidance also includes specific contextual factors that are likely to support effective instruction.

The design "drivetrain" that results starts with values, which drive the instructional or learning goals, which drive the selection of overall instructional strategies, which are implemented by specific instructional activities, selected in conjunction with the consideration of contextual factors. (See Beatty, 2002 for an example of this design planning approach to developing guidance for social interaction online.)

> **Values --> Goals --> Instructional Strategies --> Activities**
> *all within a specific context; with factors impacting success*

The four HyFlex values have guided the development of the HyFlex approach at San Francisco State University (my academic home since 2003) and at many other institutions around the world, exemplified by those represented in the case reports found in Unit III of this volume. I find it more useful to designers to restate the values as universal design principles. Universal design principles should be followed in all implementations of a particular instructional design theory. (Reigeluth, 1983)

Universal Principles for HyFlex Course Design: Four Pillars

The HyFlex course design is built upon four fundamental values: Learner Choice, Equivalency, Reusability, and Accessibility, each with a corresponding guiding, or universal, principle for designers and instructors to follow. These four "pillars" provide a consistent and solid foundation for resulting courses and programs.

[The format for this list is **Value**: *Principle to be followed*]

1. **Learner Choice:** *Provide meaningful alternative participation modes and enable students to choose between participation modes daily, weekly, or topically.*
2. **Equivalency:** *Provide learning activities in all participation modes which lead to equivalent learning outcomes.*
3. **Reusability:** *Utilize artifacts from learning activities in each participation mode as "learning objects' for all students.*
4. **Accessibility:** *Equip students with technology skills and equitable access to all participation modes.*

The Learner Choice Principle

> *Provide meaningful alternative participation modes and enable students to choose between participation modes daily, weekly, or topically.*

The primary reason a HyFlex course design should be considered is to give students a choice in how they complete course activities in any given week (or topic). Without meaningful choice, there is no flexibility … and therefore no HyFlex. Without flexibility all you have is a standard hybrid course. (Not a bad thing, perhaps, but also not HyFlex.) Choosing to implement this principle requires that an instructor value providing participation choice to students more than s/he values forcing everyone into the "best" way of learning a set of content.

The Equivalency Principle

> *Provide learning activities in all participation modes which lead to equivalent learning outcomes.*

All alternative participation modes should lead to equivalent learning. Providing an alternative approach to students which leads to inferior learning "by design" is poor instructional practice and is probably unethical. Equivalency does not

imply equality, however. An online learning experience (i.e., asynchronous discussion) may turn out to be much less socially interactive than a classroom based discussion activity. In each case, however, students should be challenged to reflect upon learning content, contribute their developing ideas to the discussion, and interact with the ideas of their peers. Providing equivalent learning experiences in various modes which lead to equivalent learning outcomes may be one of the greatest challenges in the HyFlex approach.

The Reusability Principle

Utilize artifacts from learning activities in each participation mode as "learning objects' for all students.

Many class activities which take place in classrooms can be captured and represented in an online-delivered form for online students. Podcasts, video recordings, discussion transcripts or notes, presentation files and handouts, and other forms of representation of in-class activities can be very useful – both for online students and for classroom students wishing to review after the class session is finished. In a similar way, the activities completed by online students, such as chats, asynchronous discussions, file posting and peer review, etc. can become meaningful learning supports for in-class students as well as provide useful review materials for online students. And indeed, artifacts from some learning activities, such as, glossary entries, bibliographic resource collections, and topical research papers, may become perpetual learning resources for all students in future courses as well. Many of the case reports in Unit III describe specific ways to reuse learning resources.

The Accessibility Principle

Equip students with technology skills and equitable access to all participation modes.

Clearly, alternative participation modes are not valid alternatives if students cannot effectively participate in class activities in one or more modes. If a student is not physically capable of attending class, then in-class participation is not an option for that student. If a student does not have convenient and reliable Internet access, then online participation may not be a realistic option for that student. Students need the technologies (hardware, software, networks) and skills in using technology in order to make legitimate choices about participation modes. It may be incumbent upon an instructor or academic program to provide resources and extra training to students (and instructors) so that flexible participation is a real option.

Another key aspect of accessibility is the need to make all course materials and activities accessible to and usable for all students. For example, audio or video recordings should include text transcripts or be close-captioned, web pages and learning management systems must be "screen reader friendly", and all forms of online discussion should meet universal design guidelines for accessibility. (CAST.org, nd.) As more students with varied learning-mode abilities enter graduate programs and public, regulatory and legal pressures for universal design for accessibility increase, this aspect becomes increasingly important.

In my experience, this has also been challenging, and I don't believe that I've been able to implement this principle fully in all cases. Furthermore, it may be that there will always be some inequity in access to alternative participation modes, much like some students learn better verbally (listening to instructions and explanations) and some learn better visually (watching others do or view visual explanation), and some learn better by doing. Of course, other students may never realistically be able to attend class in person if they are located in a distant place or unable to travel to campus. So

perhaps this principle is the least likely to be fully implemented in all cases. Even when unattainable for all, full and equitable access is still an important goal to strive to achieve.

When you begin your own design efforts to implement HyFlex courses, if you follow these four guiding principles, you are likely to implement the four core values and provide an effective learning opportunity for all students, no matter where they are lcoated and no matter which path they choose through the course.

References

Beatty, B. J. (2002). *Social interaction in online learning: A situationalities framework for choosing instructional methods.* (Doctoral dissertation, Indiana University, 2002). Dissertation Abstracts International DAI-A 63/05, p. 1795.

Beatty, B. J. (2007). *Transitioning to an Online World: Using HyFlex Courses to Bridge the Gap.* Proceedings of the ED-MEDIA 2007 World Conference on Educational Multimedia, Hypermedia, and Telecommunications, Vancouver, Canada. (June, 2007).

CAST.org (nd.). About Universal Design for Learning. Available from: https://edtechbooks.org/-tpYI

Reigeluth, C. M. (1983). Instructional design: What is it and why is it? In C. M. Reigeluth (Ed.), *Instructional-design theories and models: An overview of their current status* (pp.3-36). Hillsdale, NJ: Lawrence Erlbaum Associates.

Brian J. Beatty

San Francisco State University

Dr. Brian Beatty is Professor of Instructional Technologies and co-coordinator of the Instructional Design and Technology MA program in the Department of Equity, Leadership Studies and Instructional Technologies at San Francisco State University. Brian's primary areas of interest and research include social interaction in online learning, flipped classroom implementation, and developing instructional design theory for Hybrid-Flexible learning environments. At SFSU, Dr. Beatty pioneered the development and evaluation of the HyFlex course design model for blended learning environments, implementing a "student-directed-hybrid" approach to better support student learning.

Previously (2012 – 2020), Brian was Associate Vice President for Academic Affairs Operations at San Francisco State University (SFSU), overseeing the Academic Technology unit and coordinating the use of technology in the academic programs across the university. He worked closely with IT professionals and leaders in other units to coordinate overall information technology strategic management at SFSU. Prior to 2012, Brian was Associate Professor and Chair of the Instructional Technologies department in the Graduate College of Education at SFSU. He received his Ph.D. in Instructional Systems Technology from Indiana University Bloomington in 2002. Dr. Beatty also holds several CA single-subject teaching credentials, an M.A. in Instructional Technologies from SF State and a B.S. in Electrical Engineering from Marquette University. Dr. Beatty has more than 30 years of experience as a classroom teacher, trainer, and instructional designer at schools, businesses, and the US Navy.

Designing a Hybrid-Flexible Course

Creating an Effective Learning Environment for All Students

Brian J. Beatty

> *Hybrid* – combines both online and face-to-face teaching and learning activities
>
> *Flexible* – students may choose whether or not to attend face-to-face sessions … with no "learning deficit"

A Hybrid-Flexible (*HyFlex)* course design enables a flexible participation policy for students, whereby students may choose to attend face-to-face synchronous class sessions in-person (typically in a traditional classroom) or complete course learning activities online without physically attending class. Some HyFlex courses allow for further choice in the online delivery mode, allowing both synchronous and asynchronous participation.

In a HyFlex course, the instructor provides instructional structure, content, and activities to meet the needs of students participating both in class and online. Activities in each mode often overlap, reusing learning resources, activities, and assessments for all students when possible and practical, but in total, they are typically not the same activities for students in all participation modes. Activities in each mode must lead to be equivalent learning outcomes. No matter which participation format is chosen, teaching and learning activities should ideally:

- Present content effectively and professionally
- Engage learners with generative learning activities
- Use authentic assessment to evaluate student learning

The decision to adopt a HyFlex course design should consider the same factors used to decide whether or not to create a fully online course or a hybrid (or blended) course. Once the decision to deliver all or part of a course in the HyFlex format has been made, there are several important steps that should be completed during the design process (before developing the course) which should help instructors implement an effective HyFlex teaching and learning environment for all students in every participation mode. These steps are not all-inclusive to the course design process; good instructional design practice and a thorough systematic process should still be followed. The steps below are included here to emphasize the unique requirements and challenges of the HyFlex course design.

1. Assess the opportunities (benefits) and challenges (costs).
2. Analyze and confirm or modify expected student learning outcomes.
3. Plan student learning activities (content and interaction).
4. Prepare to assess learning outcomes.
5. Evaluate the return on expectations.

The rest of this chapter explains and provides several worksheets which will help you and your team to design an effective HyFlex course.

Step 1: Assess the Opportunities (Benefits) and Challenges (Costs)

Understanding the "why" of your HyFlex implementation is critical, connecting to many aspects of your effort – explaining your approach to faculty and students, gathering administrator support, and providing a baseline of expectations to compare performance against after implementation. If you don't start with understanding the "why" question and its answer(s), you will likely end up in a situation where you are asking someone to expend effort or resources without a convincing argument for why they should do so. Chapter 1.2. Costs and Benefits for Hybrid-Flexible Courses and Programs provides more examples of benefits that may be realized ans costs that must be supplied for your effort to be sucessful.

For example:

- Students may ask "Why do I have to choose how to participate? Can't you just tell me what to do, where to be, and when to be there?"
- Faculty may ask, "Why do I have to teach my regular class on campus and also engage online students?" Or "Why should I offer students the choice of whether or not they attend in person or online?"
- Administrators may ask, "Why should we support additional faculty time for developing another version of an existing course?" or "Why should we change our scheduling approach to allow for students to enroll in overlapping HyFlex classes?"

Opportunities (Benefits)

Planning efforts will begin with one or more opportunities. Common opportunities include:

- Increasing overall course enrollment by offering additional schedule and location flexibility to serve more students with existing resources.
- Increasing individual class section (a single instance of a course) enrollment beyond the seat capacity of a physical classroom, considering appropriate faculty workload.
- Building faculty capability and capacity for offering online classes in a "safe" environment (i.e., allowing faculty to continue to teach in the classroom while learning to teach the same course online).
- Increasing enrollment through marketing an innovative participation format that demonstrates the institution adapts to its students' changing needs and wants.

At the detail level, every institution or program will have its own unique set of opportunities, so this step should not be overlooked. Program sponsors (department chairs, deans, provosts, presidents) will all have their own expectations of value return, and only a thorough analysis at the front end of the design process will reveal these so the design can adequately address them and hopefully meet them over time. Unstated, unexplored or misunderstood expectations typically lead to serious problems later on, especially when those expectations are surfaced after the implementation as points used to challenge claims of success by designers and instructors.

Challenges (Costs)

The challenges (costs) of HyFlex implementations impact a variety of stakeholders as well.

- Designers (often the instructor) must design a course that supports effective learning in multiple modes. This may require instructional design support or additional instructor preparation time support.
- Classroom technology teams must be able to equip instructors to capture classroom activity well enough to support online learners; may also need to support engaged synchronous learners in a classroom delivery environment. This may require academic technology investment and support.
- Instructors must be able to teach effectively in multiple modes, and be able to handle the complexity of teaching students in multiple modes at the same time. This may require professional development resources.
- Administrative systems may have to accommodate flexible student scheduling. For example, if a student is enrolled in a classroom-based course and would like to enroll in a HyFlex course offered at the same time (intending to complete the course as an online student), the scheduling system must allow this possibility. This may require scheduling business process or system changes.

As with opportunities, every institution or program will have its own unique set of nuanced challenges, and all should be surfaced now, rather than later. Even if solutions are not readily available (or even fully understood), it is very important to acknowledge the issues (certain or potential) so work-arounds can be formulated and long-range planning for systemic changes can be initiated when required.

The worksheet below can assist you in identifying, discussing and assessing opportunities that add new value to your institution (or department/program/course), or solve difficult problems. In addition to consider the positive nature of HyFlex, your team must also assess the expected costs and plan to meet them at the start of the project, or agree on an approach to meet those costs over time.

Figure 1.4.1

Assess the Challenges and Opportunities Worksheet

1. Assess the Challenges (Costs) and Opportunities (Value)

Opportunities: Adding Value		Solving Problems	
List the opportunity-related goals:	*Explain how flexible delivery design would allow you to meet this goal.*	*List the problem-solving goals:*	*Explain how flexible delivery design would help meet this goal.*

Challenges: Additional Costs			
Faculty	**Students**	**Technology/Resources**	**Administrative**
List the potential or actual costs to the faculty:	*List the potential or actual costs to the students:*	*List the potential or actual costs associated with resources:*	*List the potential or actual administrative challenges:*

Comments:

Page ___ of ____

Step 2: Analyze and Confirm or Modify Expected Student Learning Outcomes

Learning outcomes (goals) not only determine the selection of content, but also guide the selection of specific instructional methods and appropriate measures of instructional outcomes (effectiveness, efficiency, and/or appeal) (Reigeluth, 1999). Derived from fundamental values about learning, such as the formation of learning community, learning goals are specific statements about what the students (or other participants) will ultimately achieve. Goal statements are typically general in nature, for example: Students develop shared meaning of historical texts. Students learn mathematics concepts through dialogic learning processes.

What are your goals for student learning? Or, what are your student learning outcomes?

Can these outcomes be met effectively in all provided student participation modes?

In completing this step, your team should be able to list the student learning outcomes; oftentimes instructors start with their existing classroom-based instructional outcomes. With those identified, the follow-on task is to decide how well each of those outcomes can be met in the online delivery mode(s), and whether or not outcome revisions are needed. In some cases, an outcome that can be effectively met in a classroom should be revised so that it can be met as effectively by students participating online asynchronously and/or synchronously (depending on the planned online mode(s)). For example, an outcome related to developing deep understanding of a concept through face-to-face small group discussions in a classroom may be over-prescribed for the online students. Online synchronous students may be able to meet the same learning outcome in the same small group-discussion manner (though in an online classroom environment), but asynchronous students may not be able to participate effectively in small group discussions (depending greatly on various context factors), so the outcome may need to be revised to remover the activity aspect (participation in a face-to-face small group discussion).

In general, I've found outcomes that include an activity statement to be much less appropriate for HyFlex courses than those focused more on actual student learning. Outcomes that include instructional aspects such as "participation in a face to face small group discussion" are both learning and instructional outcomes. If you are used to writing outcomes like this, you'll find HyFlex design may be more productive if you adapt your practice.

For support in writing effective student learning outcomes, see the resources provided by the National Institute for Learning Outcomes Assessment (https://edtechbooks.org/-uAJa) (NILOA, nd.); for a detailed discussion of learning outcomes assessment, see Kuh, Ikenberry, Jankowski, Cain, Ewell, Hutchings, & Kinzie, (2015).

Figure 1.4.2

Analyze and Confirm or Modify Expected Student Learning Outcomes Worksheet

Step 3: Plan Student Learning Activities (Content and Interaction)

In order to plan student learning activities, select content and develop interaction paths, it is important to begin with validated learning objectives and associated instructional objectives. The high level goals established by the student learning outcomes are used to develop objectives, which are then used to identify content requirements and develop plans and resources for activity and interaction in support of student learning.

An **objective** is a description of a performance you want learners to be able to exhibit before you consider them competent. An objective describes an intended **result** of instruction, rather than the *process* of instruction itself. It is important to clarify and state your instructional objectives so that the instructional decisions you make are guided by a thorough plan. "If you don't know where you are going, it is difficult to select a suitable means for getting there." Objectives will help you assess the extent to which your students have achieved the intended learning objectives.

Objectives may help you create effective assessment strategies. Many instructors share these objectives with their students. When this is done, students may be better able to measure their own progress toward learning goals. Well-written objectives clearly state what the learner is expected to be able to do, to what level of quality, and under what circumstances the performance (or knowledge) will be undertaken.

In a HyFlex course, *learning* objectives should be the same for all students; specific *instructional* objectives may vary to fit participation mode.

For each major learning goal:

1. What are the specific details about what the student must know? (content)

2. What (specifically) should the student be able to do? (tasks and skills)

At this stage and in conjunction with planning activities, you should identify content resources for each topic, and for each set of students. In many cases, the exact same resources will work for both sets of students (in-class and online). In some cases, additional content, or alternative content delivery methods must be used for online students.

Learning goals and instructional objectives, whether stated or not, form an important basis for choosing instructional activities. An important part of your task is to choose (or create) specific instructional activities that will help students meet instructional objectives and achieve learning goals. Many of these may rely upon social interaction among the participants, either in the classroom or in an online learning environment.

Instructional methods are simply the answer to the question, "What does the educator 'do' to facilitate student learning?"

Examples of instructional methods include:

- Students work in small groups to complete a joint project that requires communication and file sharing among group members.
- Format course materials and discussion posts so they can be easily downloaded and read off-line.
- Include students from other locations, especially other countries, to engage in dialog about course content.

For each major instructional objective, describe the instructional activities which you will use to help students learn and meet the instructional objective. *Note*: In the HyFlex course, some activities may include both types of student participants. These "overlapping" activities should be identified explicitly because they may provide additional learning opportunities for students.

For each week or course topic, identify additional supports (resources, social interactivity, technology, etc.) which must be gathered or prepared in order to conduct the teaching and learning session.

To summarize, for each outcome/goal or major objective:

- What activities are required in each mode?
- What additional resources are required in each mode?
- How will activities and resources be facilitated and/or provided to students in each mode?

Figure 1.4.3

Plan Student Learning Activities (Content and Interaction)

HyFlex Delivery Design Worksheet Template				
3. Plan Student Learning Activities (Content and Interaction)			Program | Course | Session		
					indicate activity level

Instructional Goal/Objective 1	In-class Activity	In-class Resources	Online Activity	Online Resources
State the goal/objective	Describe the activity	List required resources	Describe the activity	List required resources

Instructional Goal/Objective 2	In-class Activity	In-class Resources	Online Activity	Online Resources
State the goal/objective	Describe the activity	List required resources	Describe the activity	List required resources

Comments:

Page ___ of ____

Step 4: Prepare to Assess Learning Outcomes

Assessing student learning is a critical component of all complete instructional designs. Instructors with experience teaching in any delivery mode will be familiar with a variety of assessment techniques and tools, and are likely to be effective in using them to assess learning in their primary instructional delivery mode. The major challenges for learning assessment in a HyFlex course are to 1) develop assessment skills using techniques and tools effective in alternative modes (online synchronous and asynchronous, most commonly), and 2) coordinate assessment practices to avoid challenges associated with assessing learning at different times, places and perhaps with different methods for students participating in different modes.

Instructors adept at assessing learning the classroom will likely continue to use the same assessment approaches for classroom students as they would in a single-mode classroom-based class. How will assessment of the same learning outcome be carried out with online students? Will slight revisions (timing, format, etc.) be sufficient? Will new approaches be needed?

Many common assessment techniques, such as knowledge-focused tests and quizzes, can be used in all modes of instruction. Timing differences among participation modes might require some revision to alleviate concerns about, and mitigate the likelihood of, student cheating. Using randomized questions from large banks of questions is one approach that may be appropriate. Using test questions that require unique answers from students, such as, asking essay questions requiring individual reflection, connection to personal experience, or analyzing information in some other unique way may be needed. Assessing learning through project reports, individual or group presentations (delivered live or recorded and shared online), and other forms of authentic assessment are often appropriate in all modes of instruction with very little variance needed.

To summarize, for each learning outcome:

- What—exactly—will be assessed?
- How will this assessment be conducted for students in each participation mode?
- What additional issues associated with participation mode (timing, sharing, etc.) may have to be solved or at least considered for this context?

For a through discussion of assessing student learning, see Suskie (2018).

Figure 1.4.4

Assess Learning Outcomes Worksheet

Step 5: Evaluate the Return on Expectations

A rare occurrence in higher education (in my experience, at least) is for an instructor or design team to plan for and carry out a formal "return on expectations" (ROE) evaluation for an innovative course or program delivery design. (For a description of ROE, see Kirkpatrick Partners' explanation at https://edtechbooks.org/-skYu.) Most evaluations rely on anecdotal or "messy" data that usually tell an incomplete story and are limited in their ability to support effective ROE analysis. Since the HyFlex course design has been selected to meet specific and important institutional/departmental/program or course-level goals, it makes sense that an organization would want to compare performance with expectations to decide if the effort is returning the value anticipated, or if changes are needed, or even if the effort has failed and should be halted. (All three of these outcomes are quite possible.)

If you've done a thorough and accurate job at Step 1 of the recommended HyFlex design process, you should have a reliable set of expected returns (value) statements that you need to plan metrics, analysis and evaluation criteria for now – before you start developing the course materials. If you find you can't plan for effective measurement of any of the expected values, you may need to consider whether or not that value statement is appropriate; it may need to be

refined to focus on measurable results. You may also identify requirements for new methods to gather supporting data in order to complete the analysis. For example, a HyFlex course design may need to include student satisfaction surveys apart from the institution's formal student evaluation of teaching effectiveness survey. It is best to identify these needs now, and plan to develop data gathering and measurement instruments as part of the course development process.

Using the expected opportunity (value) statements from Step 1, identify the measure (data) you'll need, the analysis process required, and the evaluation criteria you or your team will use to determine how well that value has been met.

Once the HyFlex implementation has run long enough to generate the required data, then carry out the plan you developed and summarize the results. The governing mechanism overseeing the HyFlex program will then be equipped to make decisions about program success, potential revision or possible cessation.

For a thorough discussion of educational program evaluation, see the U.S. Department of Education report "Education Matters" by Giancola (2014).

Figure 1.4.5

Assess Return on Expectations Worksheet

References

Giancola, S. P. (2014). *Education Matters: Getting the Information you need from your Evaluation.* Report prepared for the U.S. Department of Education Office of Elementary and Secondary Education, School Support and Rural Programs. Available online at: https://edtechbooks.org/-MXx

Kirkpatrick Partners (nd.). Return on Expectations. Available online: https://edtechbooks.org/-skYu

Kuh, G. D., Ikenberry, S. O., Jankowski, N. A., Cain, T. R., Ewell, P. T., Hutchings, P., & Kinzie, J. (2015). *Using Evidence of Student Learning to Improve Higher Education.* San Francisco, CA: Jossey-Bass.

NILOA, (nd.). National Institute for Learning Outcomes Assessment. Available online: https://www.learningoutcomesassessment.org

Reigeluth, C. M. (1999). *Instructional-design theories and models: A new paradigm of instructional theory (2nd).* Mahwah, NJ: Lawrence Erlbaum Associates.

Suskie, L. A. (2018). *Assessing student learning: a common sense guide (3rd).* San Francisco, CA: Jossey-Bass.

Brian J. Beatty

San Francisco State University

Dr. Brian Beatty is Professor of Instructional Technologies and co-coordinator of the Instructional Design and Technology MA program in the Department of Equity, Leadership Studies and Instructional Technologies at San Francisco State University. Brian's primary areas of interest and research include social interaction in online learning, flipped classroom implementation, and developing instructional design theory for Hybrid-Flexible learning environments. At SFSU, Dr. Beatty pioneered the development and evaluation of the HyFlex course design model for blended learning environments, implementing a "student-directed-hybrid" approach to better support student learning.

Previously (2012 – 2020), Brian was Associate Vice President for Academic Affairs Operations at San Francisco State University (SFSU), overseeing the Academic Technology unit and coordinating the use of technology in the academic programs across the university. He worked closely with IT professionals and leaders in other units to coordinate overall information technology strategic management at SFSU. Prior to 2012, Brian was Associate Professor and Chair of the Instructional Technologies department in the Graduate College of Education at SFSU. He received his Ph.D. in Instructional Systems Technology from Indiana University Bloomington in 2002. Dr. Beatty also holds several CA single-subject teaching credentials, an M.A. in Instructional Technologies from SF State and a B.S. in Electrical Engineering from Marquette University. Dr. Beatty has more than 30 years of experience as a classroom teacher, trainer, and instructional designer at schools, businesses, and the US Navy.

This content is provided to you freely by EdTech Books.

Access it online or download it at .

Unit II. Implementation and Adoption of Hybrid-Flexible Instruction

Chapters in Unit II explain how to build and deploy Hybrid-Flexible courses with specific focused discussions on the varied experiences and perspectives of major stakeholders: faculty, students, administration, and institution. These chapters discuss many of the detailed issues, experiences and design decisions that must be managed in most Hybrid-Flexible implementations; specific solutions in a variety of cases are explored in Unit III.

- **Chapter 2.1 Teaching a Hybrid-Flexible Course** describes the experience of instructors (faculty) who have taught using a HyFlex approach, focusing on common challenges and successes they've encountered.
- **Chapter 2.2 Learning in a Hybrid-Flexible Course** reports significant and common student experiences associated with learning in a HyFlex environment.
- **Chapter 2.3 Supporting Hybrid-Flexible Courses and Programs** explains many of the administrative factors that accompany HyFlex approaches: scheduling, workload management, logistics and more.
- **Chapter 2.4 Expanding the Implementation of Hybrid-Flexible Courses and Programs** explores the ways institutions have (or might) manage the expanding adoption of the HyFlex approach by instructors and administrators.
- **Chapter 2.5 Evaluating the Impact of Hybrid-Flexible Courses and Programs** reviews some of the research already conducted to assess the value of the HyFlex approach in courses and programs.
  - Supplementing Chapter 2.5 is a bibliography (in Appendix A) of over 50 articles and presentations addressing Hybrid-Flexible-type approaches by any name. This bibliography is continuously revised as new research is published.

Teaching a Hybrid-Flexible Course
Learning in a Hybrid-Flexible Course
Supporting Hybrid-Flexible Courses and Programs
Expanding the Implementation of Hybrid-Flexible Courses and Programs
Evaluating the Impact of Hybrid-Flexible Courses and Programs

This content is provided to you freely by EdTech Books.

Access it online or download it at https://edtechbooks.org/hyflex/unitII_intro.

https://edtechbooks.org/hyflex/unitII_intro

Teaching a Hybrid-Flexible Course

The Faculty Experience in HyFlex

Brian J. Beatty

In Hybrid-Flexible (HyFlex) classes, students are typically given full control over their decisions to participate online or in the classroom. This provides them with the ability to make participation choices based on convenience, learning progress, social interaction preferences, or other factors important to them at the time. Faculty, on the other hand, do not have choices about participation mode, since they have to provide both an online and a classroom experience supporting student learning. This bi-modal approach with student freedom to choose mode is an essential (and perhaps defining) character of a HyFlex design.

What characterizes the faculty experience in HyFlex courses? The specific answer to this question is highly context dependent and varies from person to person and organization to organization at multiple levels. Each implementation of HyFlex experiences its own set of faculty challenges and develops a unique set of solutions to these challenges. In this chapter, I'll describe four aspects of the faculty experience that are commonly raised as important challenges or opportunities that must be met for effective instruction over the long term. These four include 1) managing a multi-modal learning environment, 2) workload, 3) student-instructor interaction, and 4) assessing learning progression. You can read about other solution sets in the case reports available in Unit III.

Managing a Multi-Modal Learning Environment

In a HyFlex course, both fully online and fully classroom-based instruction is provided. In most institutions, it is a faculty responsibility and right to provide instruction in all formats required to support learning, so in a HyFlex environment, the faculty must be able to provide effective instruction in both classroom and online modes. If the course design includes both synchronous and asynchronous online modes, this may further complicate the faculty experience.

Faculty often have a preferred instructional mode, and it may be appropriate to assume that every experienced faculty member is equipped and resourced to provide instruction in that mode. In most cases, faculty have more experience teaching in the classroom environment than in teaching online, so there may not be much, if anything, that faculty need to change in the classroom to support HyFlex students who are showing up for class in the classroom environment. Many faculty have much less experience teaching online, so more effort may be required to design, develop and facilitate the online mode of instruction in the HyFlex class. Some faculty take on an additional challenge of serving students who participate synchronously and online, creating an environment with three participation modes: classroom, online asynchronous, and online synchronous.

Classroom Instruction

Classroom instruction should be implemented using effective face to face instructional approaches. Several things may change in a HyFlex environment, however. Since students are free to choose their participation mode, the instructor may not know which (or how many) students will show up in the classroom, which complicates planning activities. Our experience has shown relatively consistent participation patterns in single classes, so over time the instructor will be able to better predict student participation. Starting out a new class and planning activities before student participation patterns are established and observed requires a certain amount of agility and flexibility from the instructor. An instructor may need to change the number, size, or components of student groups, for example, if many more or less students show up in class than are expected.

One of the four guiding values/principles of HyFlex is "**Reusability:** Utilize **artifacts** from learning activities in each participation mode as "learning objects' for all students." (See Chapter 1.2 for a full description of fundamental HyFlex values and principles.) In the classroom, the instructor should plan to share all resources used in the classroom with online students. This is usually easy with a Learning Management System (LMS). Additionally, the instructor may want to record and archive the activities of the classroom for students to review later. This requires recording technology, informed consent from students to capture classroom interactions for later review by all students in a class, and skill in using the recording technology to capture and distribute archives. Either an instructor provides the technology and skill themselves, or they use installed technology (web cams, room cams and mics, etc.) or rely on external instructional supports (AV specialists, teaching assistants, etc.) like they would for any technology-supported classroom activity.

A continuous challenge for instructors is ensuring that students are engaged in a single learning community regardless of their participation mode. Efforts to build a learning community are likely to support the development of a learning community for all students regardless of their participation mode. (See Kim (2000) or Palloff & Pratt (1999) for helpful strategies for building successful online communities.) Regardless of instructional mode, three aspects of high quality teaching are relevant in each delivery mode, and are perhaps most critical in supporting student learning in the fully online asynchronous mode since there is no live faculty engagement to rapidly address emergent (and often individual) student learning support needs. These aspects are 1) providing relevant and meaningful content, 2) engaging students in memorable activities and learning experiences, and 3) assessing learning and adapting instruction to meet student needs; supporting student self-assessment when appropriate.

Online Asynchronous Instruction

Teaching fully online asynchronous students involves a set of tasks and skills that are generally well-understood and researched, with more than three decades of practice to draw upon. There are many excellent resources that describe effective online teaching and best practices of seasoned online instructors (Boettcher & Conrad, 2016; Dabbagh, Marra & Howland, 2018). In HyFlex classes, an instructor may be experienced and highly skilled in teaching online, or may be new to teaching online. In fact, some institutions may use HyFlex course designs as a way to build an online capacity and capability in a previously classroom focused curriculum and faculty. (Beatty, 2007)

Content: Instructional content is delivered via the class LMS, providing informational resources for students in all learning modes. For instruction to all students, best practice includes using multiple forms of representation for content, such as text, video, and audio. Some content may be generated by students themselves (i.e., discussion forum posts). This content should be captured and shared in the LMS for all students, regardless of participation mode.

Engagement: The defining characteristic of asynchronous instruction is the displacement in time between the instructor and the student. Oftentimes there is also geographical displacement, which may influence instructional practice as well. Effective engagement practice includes interaction opportunities for students with content, the instructor, and other students. The most common online learning activity in higher education seems to be the asynchronous discussion forum. There are many creative ways to design and facilitate engaging online discussions; most requiring nothing more than an interesting prompt, and intentional format (debate, roundtable, etc.) and active facilitation. (Bonk & Zhang, 2008; Wright, Szymanski Sunal, & Wilson, 2006) The major challenges for instructors are 1) choosing interesting (to students) discussion formats and topics, 2) managing time in facilitating online discussions

and 3) including elements of the asynchronous student activities in the learning experience of synchronous students as well. (See Chapter 2.2. Learning in a Hybrid-Flexible Course for more about connecting online and classroom students.)

Assessment: Assessing learning for asynchronous students is very similar to that for classroom students. Formally graded demonstrations of learning (reports, presentations, exams, quizzes, etc.) are usually exactly the same for all participation modes. (See Osterhoff, Conrad & Ely, 2008 and Conrad & Openo, 2018 for a thorough discussion on assessing learners online.) Informal assessment of learning differs in that the instructor must use the interaction technology (LMS discussions, for example) to determine the asynchronous students' learning state. To do this, the instructor must review everything posted online and should regularly check-in with online students to clarify questions, provide assessment opportunities (discussion forum exchanges, for example). Effective instructional practice in asynchronous discussion forums includes the instructor supporting students' self-assessment of learning, normally informally.

Online Synchronous Instruction

Teaching fully online synchronous students involves a set of tasks and skills that are largely similar to those used in classroom teaching, though they differ significantly in that they are completely mediated through a technology interface. Teaching synchronously online has been growing in popularity and acceptance since the advent of largely ubiquitous high bandwidth networks, easy to use web meeting and webinar software tools, and affordable synchronous classroom environments provided by academic institutions. As there are for asynchronous teaching, there are many excellent resources that describe effective online teaching and best practices of seasoned online synchronous instructors (Finkelstein, 2006; Bower, Kennedy, Dalgarno, Lee, & Kenney, 2014). In HyFlex classes, an instructor may be experienced and highly skilled in teaching synchronously online, or may be new to teaching online with live students. Many experienced and effective classroom instructors find it relatively easy to teach effectively in the online synchronous setting, if they have intuitive, reliable and accessible systems. In the case of an institution (or single faculty member) using HyFlex course designs as a way to build an online capacity and capability in a previously classroom focused curriculum, some find it easier to begin their online delivery with the synchronous online participation mode rather than asynchronous.

Content: Instructional content is often streamed live from the classroom using cameras and microphones. The class LMS is used to provide informational resources for students in all learning modes.

Engagement: Students normally share video and audio from their remote location with instructors and other students in the in-person class. Effective practice includes interaction opportunities for all students, often including polls (quick questions), interactive discussions, and group discussion. The major challenge for instructors is including online synchronous students in every classroom learning activity; expecting, supporting and rewarding fully engaged participation.

Assessment: Assessing learning for synchronous students may be identical to that for classroom students. Formally graded demonstrations of learning (reports, presentations, exams, quizzes, etc.) are usually exactly the same for all participation modes. Informal assessment of learning differs in that the instructor must have adequate technology to determine the synchronous students' learning state (confusion? clarity? distraction?) and should regularly check-in with online students to allow for quick and responsive assessment. This practice is essentially the same for all synchronous modes (classroom and online) but differs primarily in the requirement that assessing synchronous students is always mediated by technology, and often relies on very small video representations of students and student self-reports of learning state or progress.

Workload

There are several areas of faculty workload that may increase, to varying extent, due to the HyFlex course design and teaching both in-class and online students.

First, developing the course plan and materials itself will take longer than developing the same for a single mode class. If a faculty has experience developing for both modes of instruction already, there aren't many new skills that are needed. The one thing that is new for an experienced faculty such as this is designing ways to support developing a learning community for students who may only participate in one mode or the other, and who may never meet each other in person. This differs from the challenge in a fully online course because of the possibility that fully online students may be treated differently (less interaction, less relationship, less community "feel") than students who meet together in a classroom setting frequently or even just occasionally. Course planning should explicitly support facilitating an active and engaging learning community shared by all students regardless of participation mode. This planning takes time.

Once the course is developed and materials acquired and deployed to students, the faculty has to manage the delivery of instruction in multiple modes. Teaching in a traditional classroom isn't likely to be a problem for most faculty, since they probably have years of experience in that mode. Teaching the online students, however, may present significant workload challenges as faculty new to teaching online (in whichever online modes have been chosen) may need time to learn new skills and develop expertise using online instructional tools and pedagogy. When the synchronous online mode is available, the instructor will need to manage both the classroom students and the online students at the same time. This is no small challenge for someone starting out with HyFlex! The significance of this challenge itself may support the decision to start with just a few HyFlex sessions in a traditional class or in using just the asynchronous online mode paired with the in-class mode.

Faculty will also be challenged with workload changes associated with having to maintain out-of-class interactions with students who expect in-person support and engagement (often in faculty office hours) and students who require online personal support. Though many faculty live lives that combine online and on-ground modes quite a bit (commerce, meetings, entertainment, etc.), moving their student support and engagement experiences into a blended modality may challenge some, and may require learning new technologies to sufficiently support ongoing learning-related interaction. For some, this may be a significant workload increase. For all, this is likely to require a redistribution of engagement time throughout the working day and week.

Returning Value to Faculty

Time: Are there ways that your institution can provide more time to faculty, either to develop a HyFlex course or to teach one? Or both? Some institutions offer release time to faculty creating a new HyFlex course (this was my case: one course release for one term) or who offer additional teaching credit for those teaching a HyFlex class. For example, if a faculty receives "extra credit" for teaching a HyFlex class, it may be possible to "bank" these credits to be "cashed in" later. If an extra credit of one-fourth of regular (single-mode) credit is assigned, then after four HyFlex classes, a faculty may be entitled to one course release.

Money: Are there ways your institution can provide financial rewards (money) to faculty to compensate for additional workload? Some institutions may provide an additional stipend (direct payment) or travel/professional development funds for developing a new HyFlex course or for teaching a HyFlex class. Some may even provide more money to those teaching increased numbers of students in a HyFlex class if the enrollment capacity was increased due to the HyFlex format. Amounts vary considerably, as you may imagine. Local policies, practices, and expectations will be most powerful in setting appropriate amounts.

Professional Rewards: Some organizations provide other professional rewards to faculty, such as opportunities for professional growth and recognition. Nominating faculty for national innovative teaching awards, creating local appreciation awards for service to students, positively identifying HyFlex classes in the Class Schedule or program websites, calling out HyFlex faculty in accreditation or other important institution reports, and other approaches have all been used successfully to recognize faculty for the extra work they have put in to meet important goals supported by teaching students in HyFlex classes.

What might work in your case? What do your instructors value? How can you provide that value?

Student-Instructor Interaction

The HyFlex instructor has to manage interactions with students in all modes of instruction. It is never acceptable to abandon a set of students in a particular mode in which the instructor may have weak skills or may not enjoy interacting. Faculty should have effective engagement skills in the classroom, in the online asynchronous environment, and in the online synchronous environment if one is provided to students. Table 2.1.1 provides several examples of differing instructor-student engagement across the three common modes of HyFlex participation.

Professional development for faculty may be directed at any or all of these environments. Some institutions may implement quality assurance programs that require evidence of interaction skills or certification of completing appropriate professional development activities or programs. Most institutions seem to assume instructors are skilled at teacher-student interaction in the classroom environment and don't normally require certification, though professional development for face to face teaching is often available.

Many institutions do provide professional development for online teaching and certification for asynchronous and synchronous online courses. Programs such as Quality Learning and Teaching (QLT - see https://edtechbooks.org/-XVsr), and Quality Matters (see https://www.qualitymatters.org) are used more and more for hybrid as well as fully online courses. An effective approach at some institutions is to include HyFlex classes in these professional development and course certification programs. You do not necessarily need a custom-developed professional development or certification program for HyFlex courses; slight program modifications and acknowledgement of instructional characteristics specific to HyFlex courses may suffice.

Table 2.1.1

Examples of Student-Instructor Interaction in Varied Instructional Modes

	Classroom	**Online Synchronous**	**Online Asynchronous**
Content	Dynamic, interesting presentation of content	Instructor addresses online students similarly to in-class students	Instructor acknowledges online students in class recordings and in recorded messages to asynchronous students
Engagement	Meaningful discussions; collaborative activities involving students and instructor	Instructor engages online students during in-class discussion and group activities	Instructor presence in online discussions is obvious, frequent, and contributes to the conversation over time
Assessment	Ongoing informal assessment of learning during	Instructor intentionally injects opportunities for interaction to support	Feedback to students during instructional activities is timely,

content presentation and activities	informal assessment of learning during content presentation and activities	accurate, and significant (not abbreviated or trivial)

Assessing Learning Progression

Assessing student learning, in general, can be very much the same in all modes of HyFlex instruction. Faculty with experience teaching in the classroom will likely evaluate learning, and the progress of learning, much the same as they have in the past.

Learning progression is also referred to as "formative assessment" or "formative evaluation" in the education literature. "The goal of formative evaluation is the improvement of student motivation and learning." (McMillan, 2007, pg. 3) In the classroom, learning progression is often assessed informally, with physical and social cues being sent and read by both students and the instructor as content is presented and class activities are in progress. Instructors may interrupt a presentation for a quick quiz (or a "show of hands"), or to ask questions of selected students. (A very many effective practices exist; you have probably experienced dozens of them over the course of your education.) For a thorough description and discussion of various formative evaluation techniques used in the classroom, see Formative Classroom Assessment: Theory into Practice. (McMillan, 2007)

When working with online students, the challenge to instructors is translating the techniques of formative evaluation effective in the classroom into the online instructional environment – in many cases both synchronous and asynchronous. Synchronous online instructional formats often afford many of the same evaluation techniques as those used in the classroom. Spontaneous quizzing, reading facial cues, conducting quick polls, encouraging question and answer sessions, completing "one minute essays" are some of the practices used in the classroom that can work well with online synchronous students. Clearly, there may be additional challenges to the instructor since all of these interactions will now be mediated by technology, and that technology may be limited in its ability to convey meaning through small video windows, imperfect audio, or other challenges. But overall, many instructors find reasonable approaches supporting their assessment of learning progression with online synchronous students. (Coordinating instructor efforts for both in-class and synchronous students presents the same challenges as those mentioned above.)

It becomes much more difficult for instructors to conduct formative evaluation for asynchronous online learning, though it is far from impossible to do so effectively. For a thorough summary o some of the most common and effective online formative assessment practices, see Gikandi, Morrow, and Davis (2011). In their review of the literature available at the time, they found that "effective online formative assessment can foster a learner and assessment centered focus through formative feedback and enhanced learner engagement with valuable learning experiences." (2011, pg 2333) Practices such as the use of discussion forums, frequent quizzes, and requiring multiple performances of understanding represented in an e-portfolio system are noted as being particularly useful. One meta-practice that many HyFlex instructors use is to design activities supporting formative assessment for all students that meet the specific needs of online asynchronous students. Essentially this creates an online formative assessment approach applied to all students, no matter how they participate in class sessions.

Voices of the Faculty

Several HyFlex faculty from San Francisco State University have provided short video reports of their experience with HyFlex, in their specific context. Their short stories highlight meaningful aspects of their own HyFlex journey.

Jeff Brain: http://youtu.be/PTCS-kbczME (approximately 4 minutes)

Watch on YouTube

Patricia Donohue: http://youtu.be/B5FTHXA1Vbk (approximately 15 minutes)

Watch on YouTube

The Student Assistant Voice: Supporting Instructors in Using Hyflex

I asked a recent graduate of the SF State ITEC MA program to talk about her experience working with one of our faculty in creating a HyFlex version of his traditional classroom-delivered course. Here is what she said:

"If you want to learn more about Hyflex or get hands-on experience organizing a course in an LMS, a nice way to get started is to work with a professor who has used this approach before. I did this during the Fall 2010 semester, and learned a lot.

To begin, ask your advisor if any instructors are looking for support or if any classes might benefit from Hyflex adaptation. Not all instructors teach full-time, and not all are interested in learning iLearn (SF State's LMS, a Moodle derivative). Some experienced professors have solid instructional technique and innovative programs, but might not be skillful in using collaboration tools. Because our courses need to meet the needs of students who may be unable to attend classroom sessions, you can help an instructor shape their materials and lead the class in a manner that works for all learners.

Based on my one experience providing Hyflex support to a part-time instructor, here's how I'd suggest you proceed …

1. **SETUP:** Meet with the instructor at least two weeks before the semester begins (several months before would be even better). Review the course materials and discuss how the professor envisions the class. It's important, in this early stage, to have a solid course syllabus and access to most or all of the course content, unless that content will be driven by guest speakers. Determine if any materials need to be converted for online use, or if there are opportunities to improve the materials through changes in instructional media. See if you can help find the most timely online materials, or offer viewpoints that reflect current student expectations about the topics under discussion. Some instructors may worry about content ownership in loading their instructional materials into the LMS; I was glad mine didn't, but if this comes up, discuss it with your advisor.

2. **ASSIGNMENT FLOW:** Next, decide on all the small details of iLearn use. How will the professor present assignments? How will students deliver their work? How will reflection, peer exchanges, and feedback occur? In most cases, instructors will simply post files, and use the forum tool for assignments, but some may want to venture into quizzes and other functionality that iLearn easily supports. When students respond, will they type their responses in the iLearn editor or attach a file? When they attach file, which file formats can the instructor accept? Does the instructor know how to reply to a post in iLearn, or do they want to reply by commenting directly on printouts? These simple mechanics should be discussed to their smallest detail, because professors may have set expectations and students have iLearn usage preferences. It helps to go over this first with the professor, then in the first class meeting, and modify flow to meet class preferences.

3. **ONLINE DISCUSSION:** An instructor who hasn't presented in Hyflex will need to understand notification, discussion, and reflection in the LMS. You'll want to make sure they understand how to use the email digest, how to comment to the class, and to use email to reply to individual work. They should know in advance that there is no private communication in iLearn. They'll need to understand that when sending a message through iLearn, the list of recipients is omitted (for privacy), so they should begin their message by stating that the message is going to all students in the class.

4. **COLLABORATION AND RECORDING:** During classroom delivery, you'll need to help the instructor start Elluminate (the web conferencing application we use for synchronous training), begin the recording session, and monitor the chat window to give online students an opportunity to participate. If you're lucky, as we were, you'll find a generous and technically inclined student to drive the Elluminate deck, or decide on a rotation among students, so everyone gets hands-on experience with Elluminate. It's extremely helpful if the instructor stands in good reach of the mics, and if the mics are turned off during small group discussions. It would also be helpful to note start times of key events in the class, such as the start of the main presentation, and post those notes on iLearn for use with the Elluminate archive.

In summary, many of us are in Instructional Technology programs because we want to improve distance education. Signing up to be a TA and move a class to Hyflex is a way you can 'act locally, think globally' and help good instructors broaden their educational reach."   Catherine Mone – ITEC 2010

References

Beatty, B. J. (2007). *Transitioning to an Online World: Using HyFlex Courses to Bridge the Gap*. Proceedings of the ED-MEDIA 2007 World Conference on Educational Multimedia, Hypermedia, and Telecommunications, Vancouver, Canada. (June, 2007).

Boettcher, J. V., & Conrad, R. M. (2016). *The Online Teaching Survival Guide, 2nd Ed.* San Francisco, CA: Jossey-Bass.

Bonk, C. J., & Zhang, K. (2008). *Empowering Online Learning: 100+ Activities for Reading, Reflecting, Displaying, and Doing.* San Francisco, CA: Jossey-Bass.

Bower, M., Kennedy, G. E., Dalgarno, B., Lee, M. J. W., and Kenney, J. (2014). *Blended synchronous learning: A handbook for educators.* Retrieved from http://blendsync.org/handbook/Conrad, D. & Openo, J. (2018). *Assessment Strategies for Online Learning: Engagement and Authenticity*. Edmonton, AB: Athabasca University Press.

Conrad, D. & Openo, J. (2018). Assessment Strategies for Online Learning: Engagement and Authenticity (Issues in Distance Education). Edmonton, AB: Athabasca University Press.

Dabbagh N., Marra, N., & Howland, J.L. (2018). *Meaningful Online Learning: Integrating Strategies, Activities, and Learning Technologies for Effective Designs*. London: Routledge.

Finkelstein, J. (2006). *Learning in Real Time: Synchronous Teaching and Learning Online*. San Francisco, CA:Jossey-Bass.

Gikandi, J. W., Morrow, D., and Davis, N. E. (2011). Online formative assessment in higher education: A review of the literature. *Computers & Education 57*, pp. 2333-2351.

Kim, A. J. (2000). *Community Building on the Web: Secret Strategies for Successful Online Communities.* Berkeley, CA: Peachpit Press.

H. McMillan (Ed.), (2007). *Formative classroom assessment: Theory into practice.* New York: Teachers College Press.

Oosterhof, A., Conrad, R. M., & Ely, D. P. (2008). *Assessing Learners Online.* Upper Saddle River, NJ: Pearson.

Pralloff, R. M. & Pratt, K. (1999). *Building Learning Communities in Cyberspace: Effective Strategies for the Online Classroom.* San Francisco, CA: Jossey-Bass.

Wright, V. H., Szymanski Sunal, C., & Wilson, E. K. (Eds.). (2006). *Research on Enhancing the Interactivity of Online Learning.* Greenwich, CT: Information Age Publishing.

Brian J. Beatty

San Francisco State University

Dr. Brian Beatty is Professor of Instructional Technologies and co-coordinator of the Instructional Design and Technology MA program in the Department of Equity, Leadership Studies and Instructional Technologies at San Francisco State University. Brian's primary areas of interest and research include social interaction in online learning, flipped classroom implementation, and developing instructional design theory for Hybrid-Flexible learning environments. At SFSU, Dr. Beatty pioneered the development and evaluation of the HyFlex course design model for blended learning environments, implementing a "student-directed-hybrid" approach to better support student learning.

Previously (2012 – 2020), Brian was Associate Vice President for Academic Affairs Operations at San Francisco State University (SFSU), overseeing the Academic Technology unit and coordinating the use of technology in the academic programs across the university. He worked closely with IT professionals and leaders in other units to coordinate overall information technology strategic management at SFSU. Prior to 2012, Brian was Associate Professor and Chair of the Instructional Technologies department in the Graduate College of Education at SFSU. He received his Ph.D. in Instructional Systems Technology from Indiana University Bloomington in 2002. Dr. Beatty also holds several CA single-subject teaching credentials, an M.A. in Instructional Technologies from SF State and a B.S. in Electrical Engineering from Marquette University. Dr. Beatty has more than 30 years of experience as a classroom teacher, trainer, and instructional designer at schools, businesses, and the US Navy.

Learning in a Hybrid-Flexible Course

The Student Experience in HyFlex Courses

Brian J. Beatty

Hybrid-Flexible course implementations are started because there are important reasons that an institution, college, department, program, or even faculty member wants or needs to teach both online and face to face students in the same class. In many cases, these reasons include providing a better learning experience for students. "Better" could mean many things, including more convenient, more adaptable to schedule needs, richer with more resources and interaction opportunities, requiring more student ownership of participation mode choices, or other aspects valued by a stakeholder: students, faculty, or adminstrators.

This chapter reviews several important aspects of the general student experience in Hybrid-Flexible courses; a more detailed description of specific student experience can be found in Chapter 2.5. Evaluating the Impact of Hybrid-Flexible Course and Programs and in the case report chapters found in Unit III.

Student Responsibility for Learning

Who is responsible for student learning? Is it the teacher? Institution? Is it the student? His or her parents? Other sponsors or campus stakeholders?

We all know the responsibility is shared by all of these parties, to varying degrees and depends greatly on the specific situation for each student. Although this responsibility for learning is shared among all the stakeholders, it's fair to say that in higher education, three stakeholders are most responsible: student (learning control), teacher/instructor (instructional control), and school/program (curriculum control).

One way many instructors fulfill their responsibility is by directing (dictating?) student behavior in ways that they believe should bring about effective learning. They often command students to "read this", "write that", "do this or that activity", etc. The common response by many students at younger ages is to just do what the instructor tells them to do. In basic schooling, this is expected and may be largely appropriate—even necessary—due to the innate naiveté of most young learners. But in higher education, and especially in graduate school, this high level of instructor-control (and the assumption of an instructor holding the majority of responsibility for student learning) may be misguided. Students at this level should be more self-directed and more aware of specific learning strategies that work well for themselves. (Students may find guides such as Barrett, Poe & Spagnola-Doyle (2009) helpful to better understand how best to learn online.) Instructors who value learner-centered rather than the traditional teacher-centered approach to instruction should be more resource-oriented, directing students as much as needed, but no moreso than needed … acting more as coaches than directors. (Reigeluth, Myers, & Lee, 2017)

HyFlex supports this "less-centered" role for the instructor by providing multiple ways of student participation in course learning activities. The HyFlex course design proscribes nothing about the way multiple perspectives are represented or supported in the specific content and/or activities used in a course, but does encourage a variety of ways that students can access content and complete course activities. When a variety of technologies and approaches are used to participate in learning experiences, it is very likely that alternative presentations of course content and interactions that support learning are used. Variety may be increased because of the nature of delivery. For example, a face to face class discussion is a different experience than a synchronous online discussion, which is a different experience than an asynchronous threaded online discussion.

When alternative learning paths are presented to students, and the students are given control over selecting their alternative, student control of learning is increased. And with increased control goes increased responsibility. HyFlex delivery leads to increased student responsibility for learning.

Are your students ready for that?

Connecting Students through Common Activities and Shared Experience

We know that communities are formed when people with a shared goal are connected to each other as they complete common activities and share meaningful experiences. Learning communities are formed among people trying to learn in order to know and/or to do something they can't do right now. (Praloff & Pratt, 1999; Smith, MacGregor, Matthews, & Gabelnick, 2004) We (faculty) like to think of our classes as learning communities, whether or not any "true" community forms.

In the HyFlex course design I've used, activities connect online and classroom students in meaningful ways, in an effort to support and encourage the development of meaningful learning community. I believe that a strong sense of community enhances the learning experience on several dimensions—cognitively as more ideas are shared and peers collaborate in developing each others' understanding of content (social construction of knowledge), and socially as students participating in both modes feel more connected to each other, to the course, to the degree program, and (to a lesser extent) to the university. I think this may be especially important to design into a HyFlex course because there could be a significant imbalance in the numbers of students participating in each mode. In an interactive graduate seminar, there may be very few online learners from week to week, and in an undergraduate lecture-driven course there may be few classroom learners from week to week. (See Chapter 2.5. Evaluating the Impact of Hybrid-Flexible Course and Programs and the case reports in Unit III for detailed participation data.)

Shared required reflection discussion posts (in an asynchronous forum) are an important and low maintenance activity that draws students together frequently and regularly in a common experience. Students in a class are essentially a class-bound cohort, and are usually required to move through content, assignments, and other activities together with week to week synchronicity. If online students were allowed to complete course assignments and activities with true "anytime" freedom, this synchronicity might not be present, and that could lessen the development of learning community.

Other important shared experiences include peer-reviews of substantial class assignments and the use of common archives of classroom and online discussions. Peer reviews of ongoing work and the social connections from sharing in a discussion experience (even when reviewing an archive) can both strengthen the learning community. Regular peer reviews of assignments (often written papers) encourage students to give, solicit and receive feedback from peers who may be online or may be meeting together in the classroom. When assignments are posted to an online space shared by all students, peer reviews that cross participation modes are afforded and may even be encouraged. In a HyFlex course, both online and classroom discussions may be archived for later review. If ongoing online discussions are referenced in live classroom discussions, the natural conceptual and social linkages between the two discussions are strengthened. When classroom student voices are included in recorded discussion archives, students who are working

online may recognize their own voice or those of other online peers (if they were part of that particular classroom discussion) and form an additional social connection.

A potential advantage of the HyFlex course design over a purely bi-modal course (where students are either fully online or fully classroom-based all the time) or a typical hybrid course (where the instructor dictates the participation mode for all students) is that students have the freedom (and capability, perhaps) to switch back and forth, so that they can be members of both learning community subgroups and can form close attachments with members of both subgroups if desired.

Discussions Drive Connections among Students

In a HyFlex course, online discussions are a primary means of connecting students who complete class activities online and in-person in the classroom. Though a natural connection point among all students is course content, in general, content itself is not interactive. Students can just as easily read a text, watch a video, or listen to a podcast on their own time in preparation for class, whether they plan to come to a class meeting or participate in online asynchronous activities in any given week. Content resources don't generally *drive* interaction. Well-designed interaction works with content to generate knowledge in the minds of learners and within the learning community itself.

What *does* drive (enable, facilitate, require) interaction? In the HyFlex courses I teach, the driver is usually an interactive discussion requirement. Students use discussions in at least two ways; as a place for open reflective discourse about their learning process and products, and as a social environment that provides an opportunity to test out ideas, receive feedback, and generally share their developing understanding about course content (asking and answering topical questions).

[Note: Some course designs also use substantial group projects that include students from multiple particpation modes in the same group. This method can work well, but it also may be complicated for students who are not prepared to work alongside both local and remote students.]

Reflection Discussions: A Shared Experience to Connect Students

One assignment commonly used in HyFlex courses both at the graduate and undergraduate level is a weekly contribution to a reflection forum. Here is a sample assignment description for the reflection post, an excerpt from an Introduction to Instructional Design course syllabus:

"Weekly you will post your thoughts about the class, your project and the instructional design field in an ongoing discussion thread. These posts are intended to help you consider questions important to you, and capture your thoughts at selected instances in time. Posts will be viewable by others, though there is no requirement for others to read or reply to anyone else's posts." (ITEC 801 Instructional Design Course Syllabus)

The rationale for this reflection assignment is two-fold. First, the instructor wants each student to reflect on and reveal something about their learning process throughout the semester on a regular basis. The reflective post, with the topic open to whatever each student wants to talk about as long as it is somehow connected to their course experience, provides evidence of their reflection for the instructor to see. A weekly assignment keeps students reflecting on a regular basis. Second, the instructor wants students to be able to read the reflections of their peers without the additional requirement to read and interact (reply) with others. In this way, students are provided their own "soapbox" in a public forum without adding to the already significant interaction work load for the course. The instructor also wants to provide students with the option of replying to others' reflections if they desire to do so. Interestingly, in classes that have used this activity, it seems that about 5% of the reflection posts elicit replies from other students. And while it is impossible to tell how many reflection posts are read by peers, any modern learning management system (LMS) can generate a daily email summary of all discussion activity (including reflections) and send it to each student and the instructor. LMS logs commonly reveal that many students read the reflection posts of their peers prior to posting their own refection in a given week.

Because all students complete weekly reflection posts and because the assignment is relatively easy to complete quickly (typical posts are 100-200 words—slightly longer than this paragraph), we have found this to be effective in connecting online and classroom students with each other. The weekly reflection activity is itself a common experience shared by all students, and students often discover other shared learning experiences in the anecdotes, questions, and insights shared by their peers in their reflections.

Reflection Posts in Practice – Do They Work?

What do higher education students write about when asked to reflect upon their learning in a course of study? Does the style or substance of their reflections change over time, or when is it made public to others in their course? When we completed an initial study of the reflections posts assigned to students in one of San Francisco State's graduate programs, we applied qualitative and quantitative analysis measures to student-generated data to understand the significance of using online reflection posts to encourage student reflective practice in a HyFlex course. (Beatty, 2007) The study we completed looked at 300 posts completed by 24 students in one semester. We wanted to know what kind of posts they were writing (social, content-focused, metacognitive, or application oriented), how much they posted, and whether or not their patterns changed over the course of a semester. (Detailed results of this study can be found in Chapter 2.5. Evaluating the Impact of Hybrid-Flexible Course and Programs.)

The context: Students are required to post a reflection (essentially a journal entry) each week to an online forum. Weekly participation accounts for 10% of their course grade. The assignment complements additional topical and application discussion posting requirements for online students and content-focused discussion participation for in-class students. Reflection posts are viewable to course peers; the LMS sends out daily email digest (all posts that day). When asked, most students report reading these email digests. Students have the option of replying to other students' reflection, but are not required to read or reply to others.

Here is a sample student reflection comment about their course experience that references this assignment:

"This term has been a valuable one for me, and this class played no small part in my success. I would have to go out on a limb and say that what I lost in social interaction by attending online was more than made up for by the process of reflection, essays, and blog posts. It is surprising to me the power of being able to record my thoughts for posterity. The intentionality of posting a thought or request is surprisingly effective in directing one's actions and goals. Perhaps it is just as important that these posts were tempered with the knowledge that they were in a public forum and I would be accountable for my statements. Thank you all for the wonderful semester."

In any semester, we've found that about 90% of students complete most or all of these assigned posts. Some students clearly do not see the value in completing them and choose to sacrifice part of their grade instead of complying (and sacrificing the potential value to their own learning). But most find value in reflecting publicly on their learning.

Topical Discussions: Generative Learning Activities Focused on Course Content

In many higher education courses, especially seminar courses, the instructor facilitates the exploration of a defined body of content and requires students to read a lot of information and make some sense of it, building their knowledge as they go. (Sound familiar?) Many classes require students to complete comprehensive projects throughout the course of study, so at the end of the term, students have learned quite a bit and show what they learned in their project artifacts, various reports assigned by the instructor, and final exams.

After new information has been presented to students, they usually need an intermediate opportunity to develop understanding before they can focus on applying new knowledge to their complex project settings. This is what interactive discussions are for … testing out new ideas and beginning to think about how new information is relevant, similar or different to what is already known, how it fits or doesn't fit within existing mental schema, how it contributes to or detracts from a sense of confidence and satisfaction in learning the content, and so on. Interactive discussions

provide a vehicle for generative learning activity, which is critical to learning complex intellectual and cognitive skills. (Lee, Lim, & Grabowski, 2008)

In an interactive HyFlex class, classroom students participate in weekly discussions about the current course topic. These are often recorded and archived for later review by all students—both online and classroom. Recordings capture more than just content; they also capture information about how students are learning—who is talking (or not)?, what is being said (or not)?, and how are understandings changing?

Online discussions typically take place in an asynchronous forum. Students working online respond to a prepared discussion prompt that asks them to "talk about" course information in a meaningful way—often challenging them to begin to apply new concepts to their project context. Students are required to post their own response, reply to several others, and then to "reply to replies" before the discussion closes after a week. And after a discussion is "closed' students can continue to read and interact in the forum even though the grading period has ended.

Besides generating learning activity, both online and classroom interactive discussions also generate additional course content. In most discussions, students bring up applications of concepts to situations they've experienced or to their current application project(s). Whether online or in the classroom, the resource set of archived discussions from all modes of a HyFlex class represents a substantial amount of learning opportunity for students (and faculty!) that would not be present, or at least not as robust as that in a single mode class.

Effective Practices: Overlapping Discussions

One method of combining classroom and online students that I have found effective is to overlap the two sets of students in a topical discussion. Often, I will use small discussion groups in class to focus on various aspects of a concept or principle we are studying. Those groups will usually create some form of summary to report back to the larger group in a facilitated debriefing discussion. Since we have access to our LMS in class, the student groups are expected to post their summaries (text, PPT, web links, etc.) to a threaded discussion forum in preparation for the whole class discussion.

When online students are part of our synchronous class, they join in the live small group discussions, either together with other synchronous online students (using our current web conferencing tool) or with one or more classroom students using a local computer workstation (typically a student laptop) to connect. Online students who complete their class activities later that week are required to join in the topical discussion that was started in class. I've found that many classroom students are drawn back into the discussion forum later in the week, in response to the participation of their online colleagues, even though they aren't required to extend their participation beyond the formal class session. Daily LMS summaries of new online discussion posts help bring about this additional participation.

This method provides a richer online discussion environment for asynchronous online students, since they can join in discussions already started, and their classroom colleagues may be more likely to respond to posts connecting to their previous work completed in class. More interaction in the discussion forum throughout the week helps all students stay more closely connected to the class (content and people), because they "see" interaction happening through the regular system messages they receive. Another benefit to the classroom students is that their discussions in class create meaningful artifacts that summarize their thinking and provide an opportunity for ongoing reflection about course content as the discussion extends beyond the end of the class session.

Overall, many instructors find this approach effective and easy to facilitate. The biggest challenge is often integrating live online students into the small group discussions taking place in the classroom, but even that usually becomes quick and efficient with a little practice and experience (both for the instructor and both sides of the student connection).

If you're an instructor planning to use HyFlex delivery, you may want to design for overlapping discussions.

The Student Voice on HyFlex

I asked one of a San Francisco State University graduate students to talk about her experience as a HyFlex student in several Instructional Technology MA program courses. Here is what she said:

"As an MA/Ed ITEC student who graduates this month, I'm feeling a sense of grateful surprise that the program wasn't exactly what I'd expected, but was in many ways much more valuable. When I began attending SFSU in August of 2009, I thought I was starting an online program with infrequent face-to-face classes. As an adult learner this suited me; I assumed I'd just power through the coursework. Once in the program, I realized this was not what I'd gotten into. I found myself being offered a full classroom experience, augmented by technology. After grousing for a few weeks about how poorly the technology worked in comparison to the fancy phone-based systems I was accustomed to in the corporate world, then realizing how limited the department's resources were and how willing everyone was to make it work, I settled into learning. I found great value in class time and meeting with peers, many of whom have extremely interesting backgrounds. Within the first semester, I had to confess that I would have missed a lot in an online-only program.

Hyflex, as it's implemented at SFSU, lets an instructor store their materials in a learning management system (LMS), then present in a typical classroom, but with an online window for students who can't come to class. Our LMS, which we call iLearn, is a custom online application created in Moodle. Think of it as a repository for files, an outliner that assembles those files to align with the course syllabus, and a suite of communication tools—forums and notifications for example—that let you receive assignments, delivery your work, and engage in discussions with your instructor and peers. An important part of the SFSU educational philosophy is personal reflection, and forums allow a natural way to reflect on what you've learned each week. Our classroom collaboration tool is the commercial product Elluminate (www.elluminate.com), a shared whiteboard with recording capabilities. Elluminate lets you attend class from home or another location, which we call synchronous use, or watch the video-taped class later, asynchronously. It's great if you have to travel for work, or drive a long distance to school and don't want to attend in person each week, or simply if you miss a class.

I took the entire ITEC 801 course online, in part just to see what it was like, and I found I could track well with the class and complete all my assignments without attending a single classroom day. Now, did I make the best use of the 801 offering? Perhaps not. But working online suited my independent needs, and I was grateful to have an opportunity to choose.

In retrospect, I have to say that I'm very happy to have chosen a 'hybrid' program rather than a purely distance course. Learners need flexibility, and to me, the Hyflex process provides this, and should be standard for any classroom work that can accommodate this approach. But you never want to underestimate what you can learn by being in a classroom with a good professor and others who share your interests. There's an alchemy there that may surprise you."

Catherine Mone – ITEC 2010

More Student Reflections on their HyFlex Experience

A number of years ago, we asked several students to provide us a summary of their perspectives of the HyFlex experience. Click each video to listen to what they said. Each video is approximately 4 minutes long.

Nate Kaufman: http://youtu.be/h60x7Miy9fk

[Watch on YouTube](#)

Gustavo Campos: **http://youtu.be/0zddgiLVt5Y**

[Watch on YouTube](#)

Jess Kaufmann: **http://youtu.be/jVIzWRXBDyY**

[Watch on YouTube](#)

Joel Compton: **http://youtu.be/6ExBNhNuTPc**

[Watch on YouTube](#)

Watch on YouTube

From Students to Students: Tips for Succeeding in a HyFlex Class

We asked three of our students to provide guidance for other students just starting out in a HyFlex class, or considering enrolling in a HyFlex class. Here is what they said.

David Miles: 10 Do's and Don'ts of a Hybrid Course

Taking classes can be a fairly daunting task when faced with the demands of busy life schedules. Here's a solution, take your courses online. You've tried that but sometimes you just feel left out of the classroom's social loop. Well have you tried a hybrid solution yet? A hybrid course will allow you to attend your class face-to-face, online or both.

Here are some tips to help you succeed in your hybrid course:

1. Don't Treat It Like One or the Other

This is a hybrid course so use the benefits of each style of the course even if you'll be doing primarily one over the other. If you're going to be primarily a face-to-face student make sure to use the online notes and, course materials and if available the class recordings to accent your own in class notes. If you'll primarily

be taking the course as an online student don't forget there are real live people in this class to interact with and a live instructor to ask questions to.

   2. Do Read the Syllabus

There's tons of information here. Everything from the instructor's office hours to course assignments can be found in the syllabus. It's a quick way to find standard information about the class. So give it a look on or before the first day

of class and give yourself an idea of what you're about to embark on.

   3. Don't Sit Idly By

Participate, participate, participate. You have to get involved in the class, especially if you're online. When there's a class discussion or forum posts by your classmates have a voice and respond. When you're online if you don't speak up people can easily forget that you're even there. Not being seen by your classmates or instructor can have a negative impact on your grade.

   4. Do Get to Know Your Classmates

Everyone who's asked to share notes in a face-to-face class knows that your classmates can be your best friends. The same applies to those students taking the course primarily online. Classmates can answer question that are unclear to you, catch you up on things you've missed and even be a sounding board for you to bounce your thoughts off. Social interaction will also alleviate the feeling of disconnect some students feel with a class solely online.

   5. Don't Forget to Reflect

Many instructors ask students to write reflection papers for each class or week that has gone by for the class. Whatever the time frame of the reflections are, try and do them as they come up. Going back in the end an looking through your notes or revisiting the entire online library for the course to write your reflections can be exhausting and probably won't look that great to your instructor either.

   6. Do Attend A Class (F2F)

Are things getting rough online? Is motivation to keep up with online work getting a little low? Well why not go in to the face-to-face portion of the class. Interaction with real living people in a "normal" classroom setting can be just the

jolt you need to get things going again. It will also give you chance to meet the people you've been interacting with in your virtual settings, talk with your instructor and get out of the house for a much needed breath of fresh air. See number seven.

   7. Don't Get Stuck In Front of Your Computer

Take a break. Schoolwork can get tough if you're spending all your time sitting if front of a computer. Many people opting for more of an online education do so because of work schedules that don't permit for attending classes face-to-face. If you're working on a computer, studying on a computer and playing on a computer chances are you'll need to step away and clear your head and give your eyes a break from staring into the glow of a computer monitor. Hybrid

courses are about having the best of both educational worlds so if you've been spending too much time in front of the computer give face-to-face a try.

   8. Do Talk With Your Instructor

One quick and simple way to get a feel for how things are going with any course is to talk with your instructor and hybrid courses are no exception. You'll have quite a number of options to do this. You can chat with them through

emails, in online forums/discussions, in person during regular office hours or in class during normal regular class hours. Instructors can help with any number of topics and should not be shied away from. Don't forget there to help you; instructors' goal is for you to succeed not to fail.

9. Don't Flake

It's easy to hide out in both face-to-face and online classes and not get a lot done. A major portion of a successful hybrid class is the interaction between all involved. If you're distancing yourself from the class it makes it that much harder for everyone else. Make sure when you a lot time to be a part of the course to actually show up and do your best to be a part of the class. Hybrid courses can have group assignments, discussions boards, forums, emails discussions and presentations all of which need every student to be involved to the most effective for everyone.

10. Do Have Fun

You're taking this class for a reason, whether it is a need for a specific degree program or personal interest; so enjoy the class you've chosen to take. Utilize all the available tools of the hybrid structure to make the most of the class. If you're a face-to-face student opt for a class or two online or pair up with another student that's primarily online and vice versa if you're planning on being primarily an online student. Classes you enjoy you're more likely to participate in, keep up with your assignments and overall do better in the class.

_____

Editor's Note: David Miles Rayner was a 2007-2008 graduate student in the ITEC MA program at SF State. David completed one HyFlex courses during his program of studies.

Brian Rayner: HyFlex Tips for Success

Do

1. *DO plan to attend class when you can.*
    a. *Peer interaction is invaluable. (They may know things you don't.)*

2. *DO turn in assignments ASAP regardless.*
    a. *More time for peer feedback.*
    b. *Time to revise, means a potentially better grade.*

3. DO make sure that you have all the necessary plug-ins for your computer to play the videos or audio files that are recorded during the live class.
4. DO take advantage of the HyFlex environment if you can't drive into the city for class. There is a lot to gain from the online learning opportunity.
    a. After all, this is instructional technology.
5. DO use the online assignments even if you do attend the live class.
6. DO use headphones if possible during online classes.
    a. It helps to minimize the echo.
7. DO try completing online materials during the normally scheduled time.
    a. If you already have the time blocked out, then you'll get it done and won't have to try to fit it into your busy schedule later.
8. DO plan ahead for online classes.
    a. Try to go through all the motions while in the classroom to see how it will work from home.

Don't

1. DON'T wait till the assignment is due to post it.
    1. You can't take advantage of peer feedback.
    2. You can't revise it to get a better grade.
2. DON'T keep your microphone on during online classes if you aren't speaking.
    1. It creates a lot of feedback and can disrupt the class.
3. DON'T wait to do online work for the night before a scheduled class.
    1. It's often more work than you think.
4. DON'T try to attend an online class if you aren't sure about how to use the technology.
    1. Get one of your peers to help you in class first.
    2. It takes away from the real learning opportunity because too much time is spent helping everyone get set up.
5. DON'T let the fact that you aren't attending the in-person instruction fool you into thinking that it's ok to procrastinate.
    1. It'll all pile up before you know it, and you'll be pulling all-nighters to finish your semester.
6. DON'T be the last to join an online learning session if there are limited seats. (You may find yourself left out.)

General Advice

When trying to determine if attending online is for you, consider how you feel about working on assignments on your own. If you tend to be a loner, then by all means, try an online class assignment day instead of driving to campus. If you are the type of person who likes meeting new people and sharing ideas with others, then definitely try to attend class in person more. There is a lot to gain from in-class interaction with your peers. Often they have ideas that you may not have heard before, or they can give you valuable feedback to make your project better than it otherwise would have been. (This was definitely the case with my projects.) Others can also potentially ask you questions about your work that helps you to develop it into a more complete work. They may ask questions that you might not have considered, or they can shed light on holes in your theories.

In a HyFlex environment, you get the opportunity to choose whether to attend in person or not. Often if I didn't have the necessary time to drive across town to get to class, I would just listen from home. Or just plan to listen to the

lecture after it is posted. Try the assignments and read the book as though you were attending in person every day. It's easy to forget that you have class when you aren't attending in-person.

When online instruction is given, where it's fully interactive, treat it as you would a corporate conference call.

- *Mute when you aren't speaking*
- *Stay on topic*
- *Gather your thoughts before you begin speaking*
- *Don't monopolize the session*
- *Do take advantage of the technology and share your desktop, or a website that others might really appreciate knowing about.*

_____

Editor's Note: Brian Rayner is a 2008 graduate of the ITEC MA program. Brian completed two HyFlex courses during his program of studies.

Kate Miffitt: Tips for Participating in Hybrid Classes

The HyFlex course format affords a lot of flexibility in how you manage your coursework and your schedule. You will find that classmates participate in different ways, with some mostly online, others mostly in-person, and a few who will participate in both formats evenly. Below are some tips geared towards the varying participation styles. Read through them, and think about what approach might work best for you.

Mostly/Only Online

When deciding if you will participate exclusively online, consider your personality in addition to your schedule. Students who work well independently, manage their time, and communicate effectively thrive in the online environment. If you like a lot of feedback and interaction or find the course material challenging, you should consider attending class in-person.

Set a schedule, and stick to it. Because you don't have a face-to-face meeting to prepare for every week, it is easy to procrastinate and put off assignments until the last minute. While you may be able to get by with this approach, ultimately you will find that you cheat yourself out of richer discussions and valuable feedback by not being involved in the class in a timely manner. Set a realistic schedule of about 8 - 10 hours a week, and then meet your deadlines.

One approach is to designate a day for reading/ working on assignments, a day for participating in discussions, and a day at the end of the week to reply to classmates and revise your posted assignment.

Think quality, not quantity. When participating in discussions, focus on writing quality posts, even if it means you will post fewer times. If you are posting to a discussion that is about a reading for the week, try to write something different than what others are writing, even if you don't necessarily agree with it. Another way to contribute original posts is to relate the reading to an experience you had in the workplace; just be sure to tie your example back to the reading. Playing devil's advocate or highlighting a different point from the reading will keep the discussion fresh and will ultimately benefit all participants. If you are giving feedback to classmates on posted assignments, take the time to really review one or two and give critical feedback. It is more valuable to help one classmate improve his/her

project by giving detailed feedback than it is to tell five classmates "good job", and you will learn more by applying the class concepts thoroughly to other projects.

Get familiar with classmates' projects. It is likely that as the semester progresses, more discussions will relate to giving classmates feedback on their project progress. One way to make it easier to interact with whoever is online

for the week is to have a basic idea of what most of your classmates' projects are about. Remember that early in the semester, everyone will post a brief project description, which is a good resource to go back to in order to be able to give feedback to different classmates.

Don't wait to ask questions, or ask for help. It is imperative that you be proactive and reach out to classmates or the instructor if you have questions or need help. If you are having trouble with a discussion topic, explain your confusion as clearly as possible so that others can respond. If you are stuck on an assignment, email the professor right away. It is likely that your confusion can be cleared up rather easily, even though it feels like it is just easier to just give up when you are alone.

Mix of Online and Face-to-Face

If you plan to participate face-to-face some weeks and online others, you will be getting the best of both mediums. However, it will require some work on your part to be able to change gears from online to in-class.

Get on a schedule that works for both. If you plan to go back and forth between meeting online and in-class, you will probably find that the deadlines for each are a little different. Because many online students participate on the weekend, they are often posting assignments and discussions after the face-to-face class has met. Therefore, you need to find a working schedule that allows you to be prepared on time for the weeks you attend in-person. That will likely mean posting ahead in the online forums so that you are also on schedule with the face-to-face class.

Be strategic in deciding in-class weeks. The hybrid approach is great in that it allows you to accommodate things that come up in your schedule (events, illness, etc.) while still participating in class. It is valuable, though, to be strategic in deciding the weeks you will be in-class in advance. If there will be a guest speaker, for example, or if the class will be going over a topic that is particularly challenging, those are good times to prioritize making it to the face-to-face session.

Mostly/Only Face-to-Face Class

Attending face-to-face classes enhances the social experience for many students. Because the class makes use of a robust LMS like iLearn, it is a good idea to think of yourself as an online student who participates in-person. You will still be expected to access course resources and post assignments online.

Check out the online discussions. It is a good idea to skim the online discussions, even if you are not going to participate in them. Keep in mind that classmates participating online have more time to craft responses to weekly topics. While the in-class discussion is likely to be more dynamic, the online discussion is more likely to be thought out and summarize key concepts. Use it as a resource and to potentially get a different perspective on topics.

Get familiar with the online format. Even if you plan to be in class every week, it is likely that you will participate online at least once. Don't wait until week 9 with a looming deadline to try to figure out how to post. Make sure you know how to use the various online tools and resources.

_____

Editor's Note: Kate Miffitt is a 2007 graduate of the ITEC MA program. Kate completed three HyFlex courses during her program of studies.

References

Barrett, S., Poe, C., & Spagnola-Doyle, C. (2008). *Power Up: A Practical Student's Guide to Online Learning.* Upper Saddle River, NJ: Pearson.

Beatty, B. (2007, October). Hybrid Classes with Flexible Participation Options – If you build it, how will they come? *Proceedings of the Association for Educational Communication and Technology International Conference*, Anaheim, CA.

Lee, H. W., Lim, K. Y., & Grabowski, B. L. (2008). Generative learning: Principles and implications for meaning making. In J. M. Spector, M. D. Merrill, J. Van Merrienboer, & M. P. Driscoll (Eds.), *Hand-book of Research on Educational Communications and Technology (3rd ed.*, pp. 111-124). New York: Lawrence Erlbaum Associates.

Palloff, R. M., & Pratt, K. (1999). *Building learning communities in cyberspace: Effective strategies for the online classroom*. San Francisco: Jossey-Bass.

Reigeluth, C. M., Myers, R. D., and Lee, D. (2017). The Learner-Centered Paradigm of Instruction. In C. M. Reigeluth, B. J. Beatty and R.D. Myers (Eds.), (2017). *Instructional-design theories and models: The learner-centered paradigm of education.* New York, NY: Routledge.

Smith, B. L., MacGregor, J., Matthews, R. S., Gabelnick, F. (2004) *Learning communities: Reforming undergraduate education*. San Francisco: Jossey-Bass.

Brian J. Beatty

San Francisco State University

Dr. Brian Beatty is Professor of Instructional Technologies and co-coordinator of the Instructional Design and Technology MA program in the Department of Equity, Leadership Studies and Instructional Technologies at San Francisco State University. Brian's primary areas of interest and research include social interaction in online learning, flipped classroom implementation, and developing instructional design theory for Hybrid-Flexible learning environments. At SFSU, Dr. Beatty pioneered the development and evaluation of the HyFlex course design model for blended learning environments, implementing a "student-directed-hybrid" approach to better support student learning.

Previously (2012 – 2020), Brian was Associate Vice President for Academic Affairs Operations at San Francisco State University (SFSU), overseeing the Academic Technology unit and coordinating the use of technology in the academic programs across the university. He worked closely with IT professionals and leaders in other units to coordinate overall information technology strategic management at SFSU. Prior to 2012, Brian was Associate Professor and Chair of the Instructional Technologies department in the Graduate College of Education at SFSU. He received his Ph.D. in Instructional Systems Technology from Indiana University Bloomington in 2002. Dr. Beatty also holds several CA single-subject teaching credentials, an M.A. in Instructional Technologies from SF State and a B.S. in Electrical Engineering from Marquette University. Dr. Beatty has more than 30 years of experience as a classroom teacher, trainer, and instructional designer at schools, businesses, and the US Navy.

Supporting Hybrid-Flexible Courses and Programs

The Administrator Experience with HyFlex Courses and Programs

Brian J. Beatty

*"Orville and Wilbur Wright became the first in flight because they applied a mechanical principle that followed their c
The key to keeping a craft in the air they grasped, was not to make it strong and sturdy. On the contrary, it had to be fle.
– and the pilot at the controls – must be able to adjust easily and quickly. In the sky, with winds rushing and ever ch
such thing as inherent stability – only a dynamic stability, which, though it might sound like a contradiction, actually
embracing instability."*

Shenk (2014) p. 185

The principle of "dynamic stability" may be very appropriate for systems embracing Hybrid-Flexible (HyFlex) courses. In HyFlex classes, students are typically given full control over their decisions to participate online or in the classroom. This provides them with the ability to make participation choices based on convenience, learning progress, social interaction preferences, or other factors important to them at the time. Faculty, on the other hand, do not have choices about participation mode, since they have to provide both an online and a classroom experience supporting student learning. This bi-modal approach with student freedom to choose mode and faculty requirements to provide both modes with equal effectiveness is the essential defining character of a HyFlex design. The instruction system that results is both dynamic and stable: student faces in class often change from week to week, in-class and online participation numbers may vary considerably, and different activities may be required in various modes, yet a consistent and effective learning experience is expected by students in the classroom and by students online, requiring extensive design work by instructors (and any available design support).

Administrative systems may also need to embrace the principle of dynamic stability in a HyFlex environment; extremely challenging when most administrative systems are designed for inflexible consistency, predictability, and repeatability. HyFlex courses demand some appreciation for, and acceptance of, uncertainty as student participation mode changes from session to session and enrollment in each mode changes each session.

What are common important considerations for administering HyFlex courses? As with the student and faculty experience, the specific answer to this question is highly context dependent and varies from organization to organization, and sometimes from administrator to administrator (department chairs, deans, registrars, etc.). In Chapters 2.1 Teaching a Hybrid-Flexible Course and 2.2. Learning in a Hybrid-Flexible Course, some issues are raised and discussed from the faculty and student perspectives. In this chapter, I'll describe four administrative considerations commonly raised as important challenges or opportunities that must be met for the effective support of HyFlex courses over the long term. These four include 1) deciding to launch HyFlex for an institution, 2) enabling student schedule

flexibility, 3) managing workload agreements, and 4) aligning support for students and faculty. You can also read about other administrative concerns and solutions in some of the case reports available in Unit III.

Since almost every institution – even those working within larger university systems – has significant control over local implementations of administrative systems, policies, and practices, when HyFlex courses are brought into the curriculum decisions must be made about factors such as these four. If you want your implementation to run as smoothly as possible, and to be effective in the long run, gathering administrative decision-makers early in the process to understand HyFlex and the unique support services or combinations of existing services required of all stakeholders is a good idea. Highly recommended!

Deciding to Launch HyFlex for an Institution

The decision to begin offering courses and programs in the HyFlex mode is one that should be made carefully and begin with an analysis of the value expected to be gained, and the feasibility of an institution being able to support the effort. (See Chapter 1.2. Costs and Benefits for Hybrid-Flexible Course and Programs for more discussion on this topic.) Even at the earliest stages of the consideration of the opportunity, it's very likely that some sense of the desired value is known by decision-makers. HyFlex is innovative enough that most administrators aren't likely to seriously consider an implementation like this without some awareness of the compelling challenges or opportunities that need to be addressed. Once one or more compelling value opportunities have been identified, a feasibility analysis will help administrators or other decision-makers make the decision to move forward with HyFlex or not. In some cases, this decision is made by individual instructors, but, even in this case some sort of value expectation and feasibility analysis is performed, though it will likely be informal and may not be well-documented.

Some institutions implement HyFlex programs strategically with substantial high-level investment of effort to develop comprehensive strategic plans. Several of the case reports in Unit III of this book include some discussion of administrative planning at this level. (See McCluskey, Shaffer, Grodziak, & Hove (2012) for one example of an institutional strategic plan for their approach, branded as "FlexLearning".)

Analyzing the Feasibility of HyFlex

If you are considering using the HyFlex approach in courses or programs, you should certainly complete some sort of feasibility analysis before moving forward with detailed design, development or implementation. Moving forward without understanding the balance of cost to benefit, value to price, advantage to disadvantage, or risk to reward (pick your favorite pair of terms) is shortsighted and may lead to wasted effort if it turns out the returns to the organization or students aren't worth the cost to the instructor or organization.

What questions should your feasibility analysis answer? (For detailed guidance, see Chapter 1.4. Designing a Hybrid-Flexible Course.)

First, you should clearly establish or validate the need to use both types of delivery – online and classroom – in the same class sections. If you find that there is no solid justification for delivering instruction in both modes at the same time, with the same general set of resources, then perhaps HyFlex isn't a good choice. The type of justification needed to move forward depends on the scope of the implementation being considered. The justification for an individual instructor may be quite simple (at minimum, instructor interest or preference) and perhaps that's solid enough for a very limited project. However, if an entire program or institution is considering implementing HyFlex in many (or all) courses, the justification may include a market analysis, thorough literature review, consultation with experts, and the engagement of an instructional design team.

Why might an organization or instructor want to deliver both modes at once? Here are some of the common reasons for moving forward with HyFlex. (See the case reports in Unit III for specific rationale used in a variety of institutions.)

1. Extend instruction to online students with existing f2f classes. (Expand market? Facilitate greater student access?)
2. Provide a socially interactive 'onground' instructional option for online students.
3. Allow students the flexibility to attend class in person or online, depending on their individual needs and wants (schedule, personality, work/family requirements, etc.).
4. Leverage online resources (archived lectures and other activities) to support unlimited student review of content. Enhance access to various learning styles or language levels through recording and multiple modes of presentation and interaction.
5. Build in capability and capacity for online delivery within an existing traditional instruction environment.
    a. Enable business continuity and/or disaster recovery plans
    b. Respond to changing needs of students and key stakeholder groups

Of course, considering the value that you can expect from HyFlex is only one side of the analysis. You also need to determine how much implementing HyFlex is going to cost various stakeholders. A few key "costs" to consider:

1. Design and development time to create new HyFlex courses, or adapt existing classroom or online courses. (Who pays? Faculty, instructional designers)
2. In the atypical case of implementing a classroom mode in an existing online course (or program), providing physical meeting facilities may be a large cost.
3. Managing faculty requirements
    a. Possibly increased workload (development time/delivery time/possible enrollment cap changes).
    b. Training faculty to teach online (or in class – faculty might benefit from teaching support in both delivery modes).
4. Determining the administration of enrollment and participation requirements (residency, seat-time, etc.).
    a. Will students be "online", "regular", or be labeled in some new way?
    b. How will classes be scheduled into rooms? (typically they won't need seats for the full enrollment)
    c. How will students be scheduled into classes? Will students be allowed to schedule two classes at once, if one or both is delivered in HyFlex mode?
5. Supporting student success through preparation and support in HyFlex.
    a. Time management (scheduling time/place to "attend" class – anytime, anywhere)
    b. Technology mediated instructional environments (LMS, email, etc.) may require additional technical support (24/7?)
    c. Self-regulation ("Am I a good online (or classroom) learner? Should I change modes?")

Once you've looked at both sides of this comparison, you may need to weight various factors to help you decide if and how to proceed with HyFlex. Every situation will have its own set of context factors and weighted variables to consider. In the end, most cases of HyFlex implementation are also cases of organization change and require effective change management strategies. See Chapter 2.4. Expanding the Implementation of Hybrid-Flexible Courses within the Institution for more on change-related factors of implementation.

Defining HyFlex

When the use of HyFlex courses in an institution grows beyond a single instructor in a few courses, and especially when administrative systems and supports are required and being asked to adapt, it's important for the institution to formally adopt a definition of their version of HyFlex (or local brand name). This increases the local legitimacy of the approach and should accelerate the development of a more stable support system across the institution, and for students, faculty and staff.

A simple definition like this one from San Francisco State may be all that is required.

> *"**HyFlex courses** are class sessions that allow students to choose whether to attend classes face-to-face or online, synchronously or asynchronously." SF State Academic Senate policy S19-264*

If your institution wants to further define your official description as way to standardize HyFlex instructional designs (course formats, materials use, activities, and more) further, you may want to do that, though you will also sacrifice an important design component of the academic freedom many faculty exercise and strongly support. You decide!

Enabling Student Scheduling Flexibility

In a HyFlex course, both fully online and fully classroom-based instruction are provided; in many cases students are given the option to attend online in either synchronous or asynchronous modes. In most institutions, it is a faculty responsibility and right to provide instruction in all formats required to support learning, so in a HyFlex environment, the faculty must be able to provide effective instruction in both classroom and online modes.

Supporting Flexibility During Registration

We've found that there are four main ways students register for HyFlex courses that most institutions use: 1) students register for a HyFlex course as they would any classroom-based course (no HyFlex difference), 2) students register in either a fully online or a classroom-based section of the same course – with sections combined (in the scheduling system) into one larger official class section, 3) students register in either a fully online or a classroom-based section of the same course – with sections combined in the LMS to create an "unofficial" larger class section, and 4) institution creates a new HyFlex course type in the registration system to accommodate scheduling flexibility while following the business rules adopted by the institution.

1. No difference

The simplest to administer for many, this approach doesn't require any changes to the way a class section is scheduled within the class scheduling system. In order to reserve the location and time for face to face meetings (both for on-campus room and in students' academic schedules), these classes are scheduled as traditional face to face classes, and students enroll in them expecting that format. Schedule notes, emails from the system or the instructor, and/or information shared in the first class meeting is used to communicate the online participation options available and introduce the students to the HyFlex format. The primary disadvantage of this approach is that students who need a fully online version of this class would not normally register for this class section since they would expect an in-class participation requirement, when the actual class format would allow their fully online attendance.

2. Split a single class section into two smaller registration sections

One way to attract students to both modes (online and face to face) is to split a regularly sized section into two smaller sections, and assign the same instructor to each section. The faculty workload might have to be reduced for each section so that total is the equivalent as one full section (see the Managing Workload Agreements section below for more about faculty workload management). The primary advantage of this approach is that students have maximum visibility of attendance options, though additional communications are needed to explain the HyFlex format with participation flexibility. The primary disadvantage may be the difficulty in balancing the two partial sections to best meet expected student demand, since in some cases more students may be attracted to either the classroom or the online section which might lead to one partial section under enrolled and the other over enrolled or with a long waitlist.

3. Combine two entire sections into a single larger class section after enrollment

A common approach when multiple sections of a single course are offered and a single HyFlex instructor is available to teach more than one section is to combine two normally sized sections into one larger section. In this case, one section is scheduled as traditional face to face (classroom) and one section is scheduled as fully online. This allows students looking for either of these modes to find and enroll in their desired format and then receive the options to participate in the other mode as well, if desired. An additional advantage is that faculty workload may be managed by assigning two identical class sections that can be taught as one single section, saving time and effort associated with some aspects of instruction.

4. Create new HyFlex course type following institution's HyFlex business rules

Class scheduling systems may have the ability to support adding new class formats that have unique scheduling parameters and that could support the student schedule flexibility that would be ideal to support HyFlex enrollment. On our campus, we use the scheduling system – unmodified – to treat HyFlex classes as online classes with face to face meeting options; a special form of hybrid class. This allows us to schedule a single class section with full enrollment (and full instructor load factors) that reserves an on-campus room at a scheduled time and alerts students to the option of online participation (either synchronously or asynchronously). We use additional class schedule notes associated with the class section to explain the participation options and flexibility to students.

Sample class note: * Marketing 431 sections 1, 2 and 3 are the same class. Students enrolled in any one of these sections may take it as an online course or as a traditional course.

This "modified business case" use of the existing scheduling system provides most of the administrative scheduling needs of HyFlex and avoids the expense of a formal system modification.

Setting Participation Expectations

Since the primary distinguishing factor among HyFlex participation options is the way students interact while learning, it makes sense to frequently clarify interaction expectations to ensure that all participants know what to expect and can make realistic choices about participation mode. (Note: The design guidance in this section is likely to be most useful for instructors and instructional designers, but it is included in this chapter because administrators may be interested in establishing (and enforcing) design guidelines that include these aspects.)

Class participation and communication protocols and expectations should be explained before students enroll in a course if possible or at least at the very beginning of the course. Many HyFlex courses are listed as traditional courses in the course catalog so students are likely to know what the in-class expectations are before signing up for a class. Most of our students are well-trained in classroom participation protocols. However, it is unlikely that students will understand the online flexible participation options, however, unless they have taken a HyFlex course before. In some cases, student understanding also depends on the instructor's specific implementation of HyFlex, if it is significantly different than a previous instructor's practice.

Once a class begins, some students will need very specific guidance about how and when to interact online with content, the instructor, and with other students. Instructors should have a detailed explanation of protocols and expectations ready to distribute and available in multiple places as appropriate for their situation. For example, most formal classes will use a syllabus and participation expectations should be included in that document. HyFlex classes will use a course website, and the participation expectations might be highlighted on the main page of the website in some way. Weekly agendas and discussion forum prompts are also excellent places to include specific participation expectations for that week, topic, or activity.

It is also useful to periodically remind all students in a class of the overall participation protocols and expectations during a course. An instructor can observe participation patterns and may sense that participation is deficient in some important way. If this happens, it may be time for a targeted or general reminder about what is required. I've found many students are receptive to those reminders and change their participation practice accordingly.

Regrettably, some students will not change their practice, even if they "appreciate" the value they are missing. This is a problem common to every course I've experienced, unfortunately. In this way, the HyFlex experience is the same as any other course experience; dependent on the volition of students to participate actively.

In summary: Communicate participation expectations clearly, frequently, and in multiple ways that fit the specifics of your instructional situation.

Preventing a "Flex": The Case of International Students

The value to students and others in being able to participate either online or in the classroom may not be available to all students, all of the time. There may be policies and practices that restrict access to the online participation option for some students, and perhaps just for some of the time. One of the cases that commonly requires a restraint from completing a course fully online is when students with a residency requirement enroll in one or more HyFlex classes at an institution. International students commonly are encumbered with residency requirements that may restrict their access to fully online classes, either completely or as a percentage of their enrollment in any given term. In the United States, these requirements are driven by F-1 visa regulations, and are mandated by federal law.

Example (2019 data; semester campus): The F-1 visa regulations require international students to be enrolled full time (12 units or more) during fall and spring terms, with no more than 3 units coming from enrollment in a fully online class (no required on-campus meetings). International students are allowed to complete as many fully online courses as they want as long as they also have at least 9 units of classes with an in-person participation requirement (this includes traditional hybrid courses, but may not include a fully HyFlex class). These requirements do not completely restrict a student from enrolling in a fully online course (one or more fully online courses are acceptable as long as enough fully face to face courses are also being completed), and don't restrict the student from completing a hybrid class that requires at least one on-campus meeting during a term.

Enrolling in a HyFlex class could present a problem if 1) the student has the option of completing all course requirements online (potentially at a distance) and 2) the student is also enrolled in one or more fully online or HyFlex courses at the same time. In a situation like this, the institution might have to require the international student to complete some HyFlex class requirements on campus rather than online. A policy like this would not be difficult to implement on a case-by-case basis, but might be challenging if numbers are large and administrative reporting requirements are extensive. One way an institution could address this issue is to require all international students enrolled in a HyFlex class to attend one on-campus class meeting; perhaps the first class meeting in a term would be a good choice. This approach would include a tracking mechanism for international students to ensure policy compliance, adding an administrative burden for someone on campus. However, if an institution did not want to treat international students differently than all others, and did not want to create another administrative tracking and reporting process for staff, it could decide to require all students to attend the first class meeting on campus (or at some other time in the semester), thus preventing the potential F-1 visa regulation problem. If a national student (not international) could not attend the required on-campus meeting, it may be much simpler to provide an officially approved online alternative for her rather than having to track all international students.

Managing Workload Agreements

In a HyFlex course, both fully online and fully classroom-based instruction are provided by the same instructor. In most institutions, it is a faculty responsibility and right to provide instruction in all formats required to support learning, so in a HyFlex environment, the faculty must be able to provide effective instruction in both classroom and online modes. This can require more work from faculty, and at many institutions this additional work is compensated. In other institutions, faculty are left to self-manage this additional work, and oftentimes this leads to a simple shifting of work from one area or set of tasks to a different one.

Some institutions provide additional resources to instructors teaching HyFlex classes. Four common supports are:

- **Additional stipend (pay)** for faculty who design, develop and teach a HyFlex course. This seems to range from about $1500 to $5000 depending on scope of effort, type of institution, regular faculty pay amount, and other factors.
- **Course release** for faculty who design, develop and teach a HyFlex course. Often this is offered for the first term a HyFlex course is offered due to the increased workload in creating a fully online version of an existing face to face course. Typically this is a "one course" release (20% release is common).
- **Assigned teaching assistants** (TAs) to help manage the workload of teaching both classroom and online versions of the course. This seems to be highly variable – even within a single institution – and ranges from a single TA in a normal sized class to 10 or more in a mega-section class (1000 students in some cases).
- **Doubling up class sections** – in some institutions when courses offer multiple class sections every term, a faculty member may be assigned to two sections (one online and one face to face) but is able to run these two sections as one large combined HyFlex section. The faculty receives compensation for two classes but (in most cases) has less than a "2X" workload, since only one set of in-class sessions is required, and all instructional materials can serve students in all participation modes with one instance.

In the case reports in Unit III you may find examples of another common compensation approach: The "Unique Local Approach". Every institution has the ability to create their own compensation approach based on the specifics of the situation. Your solution may be a combination of common approaches listed above or may be uniquely your own. You decide!

Aligning Support for Students and Faculty

In a HyFlex course or program, students and faculty need additional support from the institution in several important areas. Administrators should be prepared to provide this support to ensure learning is not hindered.

Providing Support for Students

What supports do students need when beginning a HyFlex course experience? As with all instructional delivery/course modes, there are several general supports needed, and specific supports depending on the exact implementation approach being used. (See Chapter 2.2. Learning in a Hybrid-Flexible Course for more on the student experience.)

As explained above, students need basic information about their participation options; accurate and simple, easy to understand. Do they have to attend class live and in-person? If so, when? For what purpose? Which online participation options are available to them? How do they access those? It is also useful to explain the various modes and highlight reasons why someone might choose one or another, and – just importantly – why someone should NOT choose one or another mode (especially various online options). Helping students decide which participation mode to use for a given session may be more important for those students with little or no HyFlex experience and those who have been unable or unwilling to choose wisely in previous HyFlex classes.

Another general student support needed is the ability to identify courses in the class schedule available in HyFlex mode and what special arrangements are needed to enroll and participate. For example, on some campuses for large HyFlex sections scheduled in rooms that cannot meet the full enrollment capacity, students must choose either in-person or online evaluation (testing). If they choose in-person evaluation, they are expected to show up on campus during a scheduled exam time. If they choose online evaluation, they must complete all exams online and are not allowed to complete evaluations in-person, since all in-person seats are reserved for students who registered for them. This allows the institution to manage larger enrollments that exceed room capacity, and to realize one of the key organizational value returns enabled by HyFlex: more students served with the same seating capacity.

Related to participation decisions students must make is clearly identifying the technology required to participate in various modes. Do students need personal response system "clickers" if they attend in person? Do students need other personal technology in the classroom, such as a laptop or tablet computer? Do students need headsets to participate in live online mode? Or are speakers alone good enough? If the synchronous technology used doesn't allow for student

audio input, or they aren't expected to speak in class – as in many larger lecture classes – students won't need a working microphone. Do students need special plugins, browsers, or other software applications? Do bandwidth specifications matter? In synchronous modes, especially when video and audio channels are used, bandwidth may be a limiting factor for effective participation.

You may also have special access instructions for using other instructional resources that vary from mode to mode. If you are providing hard copies of readings or handouts in class and you expect online students to access these as well (synchronously in session or asynchronously at any other time), how will they do that? You'll need to consider copyright requirements, digitizing media, creating accessible documents, and perhaps more. Clearly, the more consistent the use of resources across all modes, the simpler this will be – both for your students and for instructors and designers.

Supporting accessibility with course materials.
Another important aspect of student support is ensuring that the HyFlex guiding principle of "Accessibility" is followed. For most situations, the primary area of accessibility addressed is making all course materials and activities accessible to and usable for all students. For example, audio or video recordings should include text transcripts or be closed-captioned, web pages and learning management systems must be "screen reader friendly", and all forms of online discussion should meet universal design guidelines for accessibility. (CAST.org, nd.) As more students with varied learning-mode abilities enroll in HyFlex courses and societal, regulatory and legal pressures for universal design for accessibility across the curriculum increase, this aspect becomes increasingly important, and should be designed into the course at the very beginning.

In my experience, this has also been one of the most challenging factors to address, and I don't believe that I've been able to implement this principle comprehensively (every course, all materials, all the time). Meeting the legal and policy requirements of technical accessibility with course materials is not always sufficient to ensure equitable access that leads to equivalent learning outcomes. It may be that there will always be some inequity in access to alternative participation modes, much like some students learn better verbally (listening to instructions and explanations) and some learn better visually (watching others do or view visual explanation), and some learn better by doing. Of course, some students may never realistically be able to attend class in person if they are located in a distant place or have severe time constraints preventing in-person attendance. So perhaps this principle is the most difficult and least likely to be fully implemented; however, full and equitable access is still an important goal.

Providing Faculty Support

As faculty consider using HyFlex approaches in their teaching, what support do they need? (See Chapter 2.1. Teaching a Hybrid-Flexible Course for more on the faculty experience.)

We've seen the most significant need for faculty support in learning how to teach effectively online, which includes designing engaging online content and interactive experiences for students in all participation modes. Because the HyFlex faculty isn't giving up the traditional teaching environment (in the classroom, normally), s/he can continue to work in that context, which is normally a strength. For many faculty new to HyFlex, the main challenge is learning to teach online effectively, especially developing skills in interacting with online learners through various internet communication technologies (ICT). Presenting information is not normally a new challenge, especially with the extensive use of digital media files, presentation notes, and lecture capture solutions that become easier to use each year.

Many universities have developed robust training programs for faculty who want to transition to teaching online or in a hybrid class. Two examples are those at the University of Wisconsin – Milwaukee (visit their Faculty development for Hybrid Courses resources at https://edtechbooks.org/-elf and the University of Central Florida (visit their faculty development for teaching online resources at https://cdl.ucf.edu/teach/). A key component of any effective program, it seems, is to have the faculty experience learning as an online (or hybrid) student as they learn how to teach in that environment. Since many faculty still have no experience learning in an online class, or have had only poor (non-interactive) experiences in online classes, this is an important step. Interaction makes the biggest difference in offering quality online experiences to students. As open courseware and open educational resources become more widespread

and expand in scope, quality information (content) is even easier to find than before. Interaction with qualified and engaged faculty experts remains the real "value-add" of a university class.

In a HyFlex course, when both online and traditional students are engaged in the same learning environment, the faculty has an opportunity to leverage the efforts and interactions of students in both modes to support and enhance the learning of all students. Online forum participation can become an opportunity for traditional student interaction as well. Interactions in the classroom can be made immediately available to live online students or can be archived for review by asynchronous online students and connected to a forum discussion for ongoing engaged learning. Common forum assignments for all students can be used to draw students together in shared discussions throughout a course. (See Chapter 2.2. Learning in a Hybrid-Flexible Course for a broader discussion of student engagement in common discussion forums.) With new and emerging technologies designed to support ubiquitous social connection and interaction, the opportunities for learning interactions are limited primarily by the creativity and the amount of time available of the faculty.

If motivated and engaged faculty are provided with good design ideas, usable technology, positive experiences both learning and teaching online, and an ongoing community to support their development as HyFlex instructors, they can do this successfully.

Technology Change Leads to Shifting Expectations

As faculty, students and administers develop some experience with HyFlex courses, their expectations may change about what is considered acceptable in terms of teaching and learning support and in terms of the "return" realized by the institution. This is a natural process which should be expected, though it does inject more change into the instructional system which may reveal new areas of [potential] conflict, and requires more effort during ongoing program implementation and the evaluation of impact.

One area of expectation change is focused on technology support for various delivery modes. As newer (and better?) technologies become available or existing technologies evolve over time, original technology functions may be enhanced and new functions may become available. For example, the Learning Management System (LMS) may add a survey (or polling) function. As faculty and students begin using the survey function and find value in completing surveys, training for newer faculty will likely adapt to include the technical and pedagogical use of LMS surveys. Faculty who have been using the LMS to support instruction without the survey may feel pressure (coming from within themselves or their programs or from the outside) to begin using surveys also. (After all, shouldn't we all be using "best practices" as early as possible?) Redesigning class activities to include surveys, whether delivered in-class or online, means change, and change requires additional effort. Effort uses resources, and therefore encumbers cost. Is the returned value with the additional cost? That's the key question the stakeholders (designers, faculty, administration) should answer.

Another area of expectation change is focused on the student digital experience. Even over the past decade that we've been using HyFlex, we've seen remarkable shifts in the "learning techscape." Pervasive mobile communications technologies, ubiquitous use of video and multimedia, and the prosumer (producer-consumer) aspects of social media being used in instruction more and more are examples of technology developments that lead to changing expectations. Whether initiated by student requests ("Hey, how come we aren't using Instagram or Twitter for this course?") or faculty interest ("I just discovered Glogster and we're going to start using it the rest of the semester!"), adding new technologies makes everyone involved change their practice, and change requires additional effort. Effort uses resources, and therefore encumbers cost. Is the returned value with the additional cost? As I stated above, that's the key question the stakeholders should answer.

Even administrators inject change through shifting expectations. Let's consider the situation of "scale creep." Assume for a moment that a traditional classroom-based course is limited to 35 students because only 35 students can fit in the classroom. If a HyFlex delivery approach was used, and the pedagogy (instructional approach) allowed for more students, then the enrollment capacity could be expanded to accommodate a larger number of students since some students would likely particpate online each session. Keep in mind that if the course is designed such that one faculty

could not manage the increased workload of reading papers or grading exams, etc., then expanding the number of students would NOT be a good idea, even with HyFlex. If the course is successful with the additional number of students (let's say a total of 50, for example), an administration under extreme budgetary duress might decide to "bump up" the course enrollment by an additional 10 percent, to 55 students. Doesn't that sound reasonable? It may be reasonable, or it may not… that's not really the point I'm trying to make. A change in seat capacity, even a relatively small change of five students, injects change – to both the faculty and student experience. Change requires additional effort. Effort uses resources, and therefore encumbers cost. Is the returned value with the additional cost? Yet again, that's the key question the stakeholders should answer.

I think it is safe to say that in every healthy organization, quite a bit of change happens over time. HyFlex designers, instructors and yes, even administrators (!) should be prepared to adapt their approaches to accommodate and leverage the changes happening around them. After all, if you are involved in a HyFlex implementation, you are a change agent yourself. Since you are "doing change" to others, you should be willing to "accept change" in return. Improving our effectiveness demands it, in fact.

A Bonus Administrative Consideration - Supporting Business Continuity

What Happens When the University Cannot Host Classes? (A faculty short story…)

[Note: This short story was written by a HyFlex faculty shortly after a weather-related campus closure event a few years ago. The same scenario has played out several times in the ensuing years.]

Emergency notification received: campus has been closed due to loss of power from the storm.

What is a faculty to do? If you have a HyFlex class, you can simply require all your students to meet online for that session. This works well if they all have network access, the tools and ability to participate in the online mode, and the time to do so. In our graduate program, it's never been a problem.

We had occasion to do this on a recent night of classes after our university lost most electric power for several hours. An hour before our graduate courses were scheduled to begin for that evening, all classes were canceled. Because I am using the HyFlex design in the courses I teach, all I had to do was send an email to my students telling them to complete their participation requirements online (and asynchronous) for that week. Because the online option was already prepared for those students who were going to choose to participate that way already, I didn't have to create a single new resource or activity … the online course materials and activities were already there!

I'm sure being forced into the online asynchronous mode was not convenient or simple for some students, but it was better than missing out on up to 10% of the content of their course. Graduate students, perhaps more than many undergraduates, often want to get as much as possible from their course experiences, since they are often paying dearly, in time and other resources.

There was still some difficulty, since while the campus power was off our locally-hosted LMS was off line, so students couldn't immediately access course materials during the regularly scheduled class time. With a little schedule accommodation for quizzes and such, all were able to complete the participation requirements later during the week.

It's nice when things work out well, even when unplanned events drive a change in plans. And in our geography (San Francisco Bay Area), being able to recover quickly from an unplanned event (such as a major earthquake) that could close our campus for days or weeks is very important.

References

CAST.org (nd.) About Universal Design for Learning. Accessed online on August 20, 2019 at http://www.cast.org/

McCluskey, C. P. S., Shaffer, D. R., Grodziak, E. M., & Hove, K. W. (2012). *Strategic Plan on FlexLearning*. The Pennsylvania State University Lehigh Valley campus, Center Valley, PA.

San Francisco State University Academic Senate (2016). Online Education Policy S16-264. Available from: https://edtechbooks.org/-msh

Shenk, J. W. (2014). Powers of Two: Finding the Essence of Innovation in Creative Pairs. Houghton Mifflin Harcourt Publishing Company, NY

Brian J. Beatty

San Francisco State University

Dr. Brian Beatty is Professor of Instructional Technologies and co-coordinator of the Instructional Design and Technology MA program in the Department of Equity, Leadership Studies and Instructional Technologies at San Francisco State University. Brian's primary areas of interest and research include social interaction in online learning, flipped classroom implementation, and developing instructional design theory for Hybrid-Flexible learning environments. At SFSU, Dr. Beatty pioneered the development and evaluation of the HyFlex course design model for blended learning environments, implementing a "student-directed-hybrid" approach to better support student learning.

Previously (2012 – 2020), Brian was Associate Vice President for Academic Affairs Operations at San Francisco State University (SFSU), overseeing the Academic Technology unit and coordinating the use of technology in the academic programs across the university. He worked closely with IT professionals and leaders in other units to coordinate overall information technology strategic management at SFSU. Prior to 2012, Brian was Associate Professor and Chair of the Instructional Technologies department in the Graduate College of Education at SFSU. He received his Ph.D. in Instructional Systems Technology from Indiana University Bloomington in 2002. Dr. Beatty also holds several CA single-subject teaching credentials, an M.A. in Instructional Technologies from SF State and a B.S. in Electrical Engineering from Marquette University. Dr. Beatty has more than 30 years of experience as a classroom teacher, trainer, and instructional designer at schools, businesses, and the US Navy.

Expanding the Implementation of Hybrid-Flexible Courses and Programs

Encouraging the Adoption of HyFlex within the Institution

Brian J. Beatty

"Diffusion is the process by which (1) an *innovation* (2) is *communicated* through certain *channels* (3) over *time* (4) am of a *social system*."

Rogers (2003) pg 11.

Expanding the Reach of HyFlex within the Faculty Social System

Note: *I advocate the HyFlex delivery approach for faculty and students in courses or disciplines where there is a need to provide both online and classroom participation options to students and where instruction can be effective in both classroom and online modes. This discussion is targeted at situations where HyFlex delivery makes good sense, solving important problems or leveraging some significant new opportunity.*

If HyFlex course delivery makes sense for a particular context, it usually begins with individual faculty who are personally motivated and energized to try this approach to meet important goals associated with delivery mode. When we started this in the mid-2000's, we felt the need to maintain a quality classroom program and add the ability to extend learning opportunities to students participating remotely - in time or geography. (See Chapter 1.1 Beginnings for more of our HyFlex origin story.) In the language used in innovation diffusion discussions, our initial faculty would be "first adopters" in their social system. (Rogers, 2003) In the language of the diffusion of high technology (developed by Geoffrey Moore and the Chasm Group), these faculty would be "Visionaries", willing to take on significant risk for some big advantage or to solve a major problem. (Moore, 1991)

Figure 1

Categories of Innovation Adopters: The Technology Adoption Lifecycle

TECHNOLOGY ADOPTION LIFECYCLE (TYPICAL)

Where are your faculty, students, and administrators?
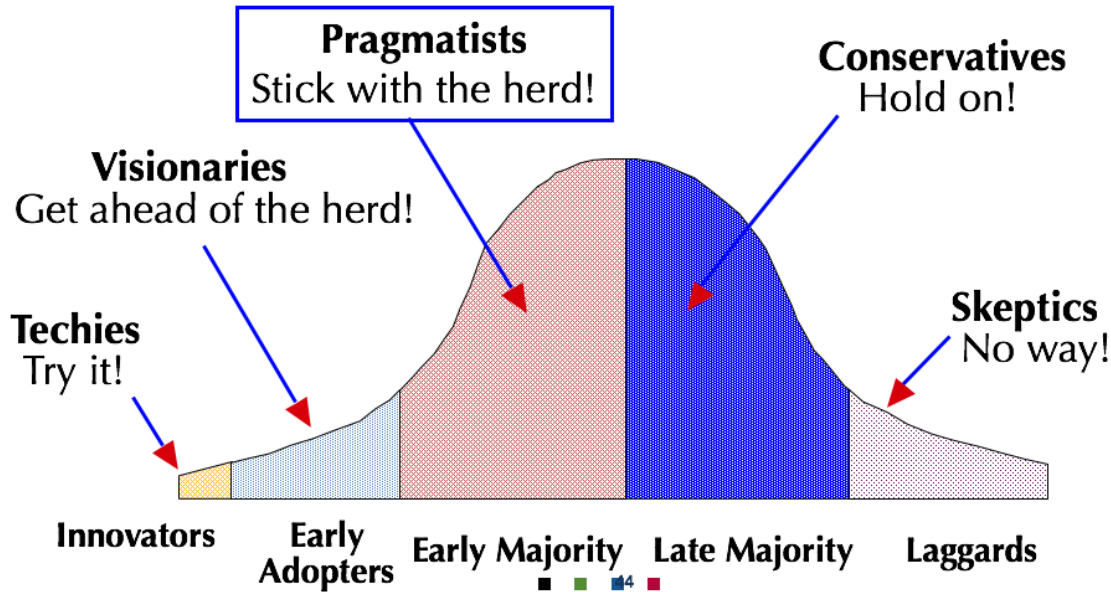
When HyFlex works with an initial faculty or course, it is natural to look for additional faculty and/or courses that it could also work well with, in order to increase the value returned to the larger organizational system. In our case, this initial expansion took place within other graduate seminar courses within our own academic program (Instructional Technologies at San Francisco State University). Furthermore, several other programs within our larger university community took notice of our success with HyFlex and developed their own implementation programs for HyFlex delivery to help solve their own specific contextualized needs; commonly needs to increase graduation rates and lower the average time to degree among our students (especially undergraduates).

In typical efforts to further diffusion into an academic organization, some faculty (and students and administrators) will not be willing or able to put as many personal resources (time, energy, etc.) into trying this new approach. Rogers (2003) found that people in a social system considering adopting an innovative practice consider the characteristics of the innovation, such as, 1) how well will it work for them, 2) the advantages it provides, and 3) how difficult it will be to adopt. Those considering adoption also rely on their peers for recommendations and information about changing their practice.

Rogers' Four Main Elements in the Diffusion of Innovations process (2003)

1. The Innovation
    a. Relative advantage
    b. Compatibility
    c. Complexity
    d. Trialability
    e. Observability
2. Communication Channels
    a. Interpersonal channels
    b. Heterophily - membership in diverse groups (enabling the cross-pollination of ideas)
3. Time
    a. Innovation decision process
    b. Adopter categories
4. A Social System
    a. Social structure
    b. System norms
    c. Opinion leaders and change agents
    d. Decision types
    e. Consequences

Educational institutions and communities of scholars are fundamentally human social systems. Quite often (almost always) Hyflex delivery is an innovative idea requiring substantial changes to important aspects of the system, such as, perspective of the role of the teacher, giving control of participation decisions to students, requiring more instructional resources and administrative support, and more. Because of these characteristics, implementing HyFlex beyond the initial adopters is characterized by many of these typical "diffusion of innovations" elements, so understanding the Diffusion of Innovations perspective's concepts and principles is important. If you are interested in supporting or encouraging faculty adoption of HyFlex delivery, you'll need to patiently work within these same parameters.

Below I'll explain a few of these elements I have found particularly helpful in understanding HyFlex adoption and I'll suggest some concrete strategies you might use with various types of adopters.

Table 1

Categories of Diffusion Groups

Category - classic	Category - (high technology)	Defining Description
First Adopters	Innovators (Techies)	Developers or discoverers of innovative practices; always looking for a new way to do something, sometimes even better!
Early Adopters	Visionaries	Sponsors of initial projects; in higher education, these are often Program Coordinators, Department Chairs, Deans, Provosts. These people often have resources (budget, policy interpretation) to support innovation.

Early Majority	Pragmatists	Faculty in Departments using or considering HyFlex for one or more courses. Looking for something that works to meaningfully and reliably improve practice.
Late Majority	Conservatives (the herd)	Faculty in programs initiating HyFlex in many courses, or administrators in an institution moving toward HyFlex on a large scale. Sometimes participates in the innovation to avoid being left behind.
Laggards	Skeptics	Resistant faculty or administrators in programs that have adopted HyFlex completely. Not willing to change practice for any reason.

Accelerate Adoption: Communicate within and among Faculty Peer Groups

It takes more than just a good idea to bring about change, especially with the majority of faculty. Communication about, around and within a new idea is just as important as the good idea itself. When HyFlex delivery is applied in the right situations, it is a good idea. When HyFlex is implemented thoughtfully, it becomes approachable even to pragmatic faculty. But that's not enough to facilitate widespread change.

The majority of faculty are pragmatic or conservative when it comes to their beliefs and practices of teaching and learning. Change doesn't come easy, and new ideas are not naturally attractive to most. Most faculty (including myself) are comfortable with their own teaching, believe that most of their students are learning effectively (or at least adequately), and that there is no compelling reason to change. Fortunately, as faculty are exposed to more data about their own students' performance and the equity gaps in performance among major groups of students in their classes and institutions, many are becoming more willing to try new approaches to better engage students in the learning process. When faculty are willing to change, to try something new, communication with other faculty is a key factor we should be ready to facilitate and leverage to support adoption.

Peer-based communication. Who do pragmatic or conservative faculty listen to? Where do they hear about new ideas that they'll listen to and consider for their own practice? Whether in faculty meetings, informal discussions about teaching methods, or through reading professional journals and participating in conferences, faculty listen to their peers. Peers can be trusted in ways that others cannot. Faculty may not be ready to listen to the great ideas of technology support staff if they don't closely identify with that group. Faculty may not listen to the ideas coming from members of the administration if they don't trust them. Faculty may not listen to other faculty teaching in another discipline (or even another academic department) if they believe there are significant differences in content, students, or delivery context between them. Overall, if the faculty is content with the status quo, they may not be willing to consider any other teaching approach, even one that promises significant improvement, unless they hear about it from a highly trusted peer.

Well-connected faculty are key players. Faculty who belong to multiple peer groups are valuable connectors. If one of these faculty adopt HyFlex, the effect may be multiplied as they communicate within and across several distinct peer groups. Faculty who are effective connectors may include those with multiple academic appointments, those with strong connections in their professional organizations and who communicate new ideas regularly at conferences, in publications, or through blogs. Faculty with administrative duties (in addition to teaching) may also be valuable connectors, since they may have peers that can become visionary sponsors in other groups.

Why change? Pragmatic faculty change their practice when they see a groundswell of support and evidence of success in a new practice. When many of their peers adopt a new practice, pragmatic faculty tend to go along with the crowd. Conservative faculty change their practice when it becomes harder to continue with their old ways than it is to adopt an innovation. In the case of Hyflex delivery, if students and other key stakeholders (administrators, research funders, etc.) start requesting flexible delivery options – because they want the real value they see elsewhere – it may become hard to resist.

Communicating as a Change Agent: Leverage the Characteristics of HyFlex for Specific Contexts

Faculty in the majority segments of an adoption population are generally willing to accept less risk in a "change" situation than are the early adopters in the same social system. Many faculty are pragmatists when it comes to curriculum design and delivery modes. Generally, pragmatists make decisions to change only when they see evidence of clear and accessible advantage in an innovative practice and when the change isn't "too" difficult. Pragmatists often change in groups, preferring to stick with the practices of their influential peers rather strike out on their own. This is very different than faculty first adopters, who are often willing to be the first ones to change because they like being ahead in some meaningful way – they want the benefit of the change more than they want the stability of maintaining the status quo.

Specific strategies that may help pragmatic faculty decide to adopt HyFlex delivery include:

1. **Highlight advantages.** Clarify the specific advantage that the HyFlex approach will provide. Connect the results of HyFlex with issues that the faculty care about and recognize as issues worth solving or opportunities worth pursuing.
2. **Take small steps.** Develop a HyFlex model that begins with current successful delivery methods and expands only as much as needed to serve the "new" students. Do not ask faculty to give up what they do well now to teach in a new way. (*Keep the strength, enhance with the new.*) You might have faculty teaching online who are now able to accommodate classroom students as well. If this is your case, what will you need to add to your existing online course to make it work for classroom students as well? More likely, you'll have faculty who are teaching courses in classrooms who will now teach online students as well. What do they have to add, at a minimum, to serve those students adequately? Beginning with new practices that are close to the existing delivery will make it easier for faculty to change. "Adequate" practices can be enhanced over time … but if a "gold standard" of HyFlex delivery is required to even begin teaching a new way, the barrier to adoption will be very high for most pragmatic faculty.
3. **Make success visible and valuable.** Publicize initial successful efforts in ways that faculty value. When faculty hear about colleagues who have found success and are recognized for that, adoption from pragmatists may be more likely. Sometimes the advantages may not be readily noticed
4. **Provide a trial period.** Allow for "tryouts" of the new delivery approach. Select a few courses and faculty for an initial pilot of HyFlex, and make sure they are free to return to their previous (single mode) delivery method if it doesn't work out for them or their students.

To review, when working with faculty considering adoption, leverage the characteristics of the HyFlex approach itself. What are its clear advantages? How compatible it is with current practice? How complex is it compared to what is being done now? How much commitment is needed to begin teaching with HyFlex? How visible are the advantages? As a change agent, you can make a difference and speed adoption *when and where it makes sense*.

Working with First Adopters – The "Techies"

The first people in your organization to adopt an innovative practice like HyFlex would fall into the "First Adopter" (or "Innovator") category of the classic Diffusion of Innovations model. In the world of technology, we might call these people "Techies." (You may want to read [Crossing the Chasm](#), by Geoffrey Moore for a good translation of Rogers' work into the high-technology field, which has strong ties to the use of technology in education.) Techies are usually willing to try any new technology, teaching practice, or both (in the HyFlex case) because it is interesting to them. They may not have any specific goal in mind or severe problem to solve. They are interested primarily in doing new things, in being on the cutting edge of a field, in being "first to market" - to use a business cliche.

Risk is often not much of a consideration for first adopters. They'll accept huge risk of something not working out, because they have experienced many failures over time with their new ventures. "Nothing risked, nothing gained" might be a common mantra in this group. They don't typically have much formal power in an organization, but even so, they play a crucial role in the diffusion of innovation process. They act as the eyes and ears – the inputs or open doors – for new practices that *might* become valuable to the organization over time.

A growing organization needs first adopters to find and bring in new technologies and teaching practices so that they can be tried out and evaluated for potential (or even immediate) value. Without first adopters, change doesn't happen nearly as quickly, because people in the other adoption groups have more invested in the status quo, have more to lose when change is considered, and are more risk-averse.

In our organization, the first adopters were a mix of academic and information technology staff and a few faculty members. The first adopters were involved in EDUCAUSE, AECT, DETCHE, and other academic technology-focused organizations in order to bring new ideas to our larger organization and (perhaps) provide an initial assessment of value. If first adopters find a good idea or tool, one of their primary roles is to hand it off to someone in the next adoption group – the Early Adopters. If the innovative tool or practice stays within the First Adopter family, it goes nowhere within the larger organization and adds no substantial value over time.

Early Adopters: Providing Initiative and Support for the First Value-driven Implementations

If an innovation is going to continue on the adoption lifecycle it must move on to the next group, the "Early Adopters." Early adopters look to first adopters for ideas, technologies, and practices that are likely to work in helping them overcome problems and/or take advantage of new opportunities. They are willing to accept a significant amount of risk of failure if the promise of value is correspondingly high. In "The Chasm Companion", this group is called "Visionaries," and rightfully so. (Moore, 1991) It takes a certain amount of vision for a future that is different (better!) than today to take a chance on an unproven practice.

First adopters can only take a new practice so far; they typically do not have the opportunity or authority to implement a new practice in any significant way. Visionaries, on the other hand, are able to initiate (sponsor) and implement an innovation that makes a difference in some part of the organization that they have influence within. Visionaries want change with a specific purpose in mind, while techies are more interested in change because it is new. How much risk will a visionary accept? That varies according to the amount of return expected. Visionaries typically keep a "big picture" perspective, and that often leads to radical shifts in practice to meet significant challenges.

In the case of HyFlex, faculty members or members of the administration may play the role of early adopters, or visionaries. An individual faculty member may recognize the need for his or her own students to have more flexible attendance options, and consult with the academic technology (or faculty development) staff on ways to redesign a course to allow for more student options. Often new technologies or teaching practices are part of the solution, and the techies on the faculty support staff are the ones who make them available and troubleshoot problems when they inevitably arise.

Mid-level managers, such as program coordinators or department chairs, may see the opportunity to expand a program's reach using distance learning methods, but may not have the people, technology, or time resources needed to create and support a fully online, fully staffed program. HyFlex courses can be an effective bridge to an online program, so management may create incentives and an encouraging climate to support the HyFlex innovation.

High-level management (deans, provosts, presidents) may see the need to increase graduation rates or overall student success, and recognize that HyFlex courses may be a vehicle to do so. Offering substantial archived materials (content, discussions, activities), options for attendance that accommodate busy lives, and more student control over learning process, HyFlex courses should contribute to increased student success: higher graduation rates and shorter time to graduation.

If your role is that of a change agent, look for visionaries in your organization. Analyze their organizational pain and opportunities for gain and consider the possible advantages of HyFlex delivery. Visionary projects are often highly contextualized, so take the time to co-develop a solution that meets their specific needs and realizes maximum value for them. You'll need these people and their success stories to move forward into the next large adoption group, the "Early Majority." If you can energize high level sponsors in supporting your adoption effort, you may find amazing receptiveness in larger, more pragmatic groups such as the faculty at large.

Early Majority: Pragmatists Travel Together to Shift their Practice

The adoption of an innovative practice within a social system begins with the initial "discovery" or development of a new way to do things that adds value to an organization. The "First Adopters" fulfill the role of explorers, finding new ways to carry out the core practices of the organization. But those savvy explorers aren't a large segment of the eventual adoption population, and the innovative practice must move on to the next group, the "Early Adopters" who develop visionary projects and find significant value in using the innovation to meet goals, alleviate significant roadblocks to change and performance, in whatever way the organization values. But still, the early adopters do not make up a very large segment of the organization. And in higher education, they are usually removed from the most powerful controlling role –the faculty. The vast majority of potential adopters (faculty) is grouped into the next two categories, the "Early Majority and the "Late Majority."

Early Majority adopters are willing to assume a small amount of risk in order to achieve the gains they see some of their peers (who have been involved in visionary projects) enjoying. Early majority adopters are largely pragmatists; they're generally comfortable with the way they carry out their business now, and aren't exactly looking for new practices … but they will listen to a new idea if they can see evidence of its value in believable and relevant ways.

Crossing the Chasm: A particular challenge in moving an innovation into this segment is that many pragmatic people don't automatically trust the visionaries in the early adopter group, and may not be willing to try out a new practice without convincing evidence of its veracity. They are risk-averse. As a change agent, your task is to develop evidence that members of this group will readily accept, to help them cross the "chasm" dividing the visionaries' optimistic perspective of all the wonderful value ready to be realized and the pragmatists' distrust of someone telling them they aren't as effective as they can be, and that they need to change and accept someone else's approach to instruction. Now, that can be a very difficult task, especially if you target the entire early majority group (all faculty) at once. You are much more likely to have success if you segment the early majority group into smaller groups that you (and the visionaries) can more readily persuade to adopt the new practice. When you have a successful implementation with a small sub-group of the larger early adoption group (for example, a specific academic program or set of influential faculty), find another sub-group that will believe the evidence from the initial sub-group's experience. And so on … . In "Crossing the Chasm," Geoffrey Moore calls this the "bowling alley" approach. (1991)

The key is to recognize that your faculty will not just jump at an innovative practice because someone, even someone with a high formal position, says, "this is a good idea and we should try it." This group waits until they see evidence that the innovation is likely to work for them, and they hear that message from people *whom they trust*.

Applying this to HyFlex courses, identify the people in the early majority group in your organization. On most campuses, this will be a mix of faculty, administrators and students. However, I would argue that faculty are the most influential segment you should address. Most faculty are comfortable with their teaching and their students' learning, and see no great need to change their practice in a [potentially] disruptive way. So why try HyFlex? Remember, members of this group are pragmatists – they need to see the value and believe that it can be successful for them, too. So, find cases of HyFlex working in situations that are similar to their own – in your own instruction or in a peer-group institution, and where the value realized would be appreciated as well.

For example, if a program wants an online program without giving up a successful face to face program, then show them evidence of a program that was able to do both at once using HyFlex. If a program wants to alleviate scheduling bottlenecks for students, show them evidence of how HyFlex participation options would allow students to enroll in two or more courses that are scheduled to meet at the same time, and participate in each course (in varying modes, of course) each week. If the great need is for more review materials for students so they can perform better on learning assessments, show them how HyFlex delivery can lead to archives of face to face interactions (discussions) and online discussions which can be rich sources of content for later review at a time and place most convenient to students.

As you think about the various groups of potential adopters in your context, I hope you are beginning to appreciate one of the "big ideas" of being a change agent stated earlier: The message to various groups of people should vary in its content, timing, and channel(s) of communication. Pragmatists respond to different claims, supported by different evidence, and carrying a lesser amount of risk than do visionaries.

Late Majority: Conservatives are Finally Convinced of the Need to Change

The second, and last, majority group in most social organizations to adopt an innovation is called the "Late Majority." You've probably heard the term "better late than never," and that perfectly describes this group's adoption timing.

Late majority adopters are often the more conservative people in the organization, at least when it comes to the innovation being considered. Members of this group are often heavily invested in the status quo practice and are very reluctant to change. They may be extremely risk averse, too. Conservatives don't generally trust the early adopters, and may only slightly more trust the pragmatists in the early majority.

"Why should I change? What I've been doing [for the past many years] has worked and still works. I don't want to do things differently. It may be good for others, but I'd prefer to keep doing things the same way, thank you very much!"

Does it matter than a new practice is showing advantages and adding value to the organization in other areas? Probably not initially, but as the pressure to change increases (for valid reasons), members of this group may be persuaded to give up their staunch opposition and "get with the program." Conservatives often begin to consider change when the pain, or disadvantage(s) of not changing becomes more severe and impacts their performance in ways that they care about. If there is no acknowledged and meaningful reason to change, they won't. Your challenge as a change agent is to acknowledge their resistance to change (often due to fear of the unknown), continuously communicate the real advantages to change (assuming there are meaningful advantages), and highlight the negative consequences of not changing – maintaining the status quo. When the risk of staying put becomes more of a threat to them than the risk of changing practice, they'll begin to change.

Clearly, not every innovation makes it into or through this group of people. Reaching this group can take a lot of time and energy. And if the innovation doesn't add enough agreed-upon value, or remaining the same doesn't entail meaningful loss (felt organizational pain), then this group will probably never change. If that's ok in your organization, don't waste your time convincing this group. A few may trickle into the new practice as they begin to trust and desire the advantages their peers in the early majority are realizing.

How does this apply to implementing a HyFlex course design in a program? Institutions that have been serving students with traditional classroom-based courses are probably well staffed with conservatives when it comes to course delivery modes. At San Francisco State, where I currently teach, I've met many. As I've shared the HyFlex "innovation" at faculty

meetings, gatherings of department chairs, and in other conversations, there is almost always a large subset of hearers that reply with, "I'd never teach that way – I like seeing all of my students each week in class so I can be sure they're learning." They often also add, "I like teaching in front of real people, not to a computer!" [Note: These conservative attitudes with large segments of faculty have been consistent over more than a decade of our local implementation.]

My response is typically to reassure them that I am not suggesting that the HyFlex delivery is right for all situations (students, content, program, and especially faculty), and that if there is some clear need for the flexibility that HyFlex offers, then it should be considered. The people I really want to spend time helping with HyFlex implementation plans, at this stage, are the "visionaries" who see a real opportunity for relieving pain: helping students learn better, graduating students faster by reducing course scheduling bottlenecks, providing online attendance options to accommodate travel or other schedule conflicts, or achieving meaningful gain: marketing courses or programs to an extended group of potential students, building gradually to an online delivery, teaching and learning competency. When these visionaries are connected to associated groups of pragmatists (for example, a visionary dean or department chair with pragmatic faculty in specific programs or schools), expanding adoption is more likely.

In the realm of faculty support for course design and practice, we've found that many conservative faculty don't really trust the idea of HyFlex – yet! Our continuing challenge is to build a value proposition that they can't ignore. Shrinking instructional budgets, transparent and detailed student success data, and growing student demand for scheduling options may raise the felt pain to levels even conservatives cannot endure without considering other instructional approaches.

Laggards (Skeptics): What can you do with those whose heels are dug in and just won't budge?

In most social organizations, there is a small group of people who simply refuse to change their practices from the way they've always done something, even when the majority of their peers have adopted a new way. This group is the non-adopters, "Laggards" or "Skeptics," and most of them will never change. Some may, especially if the system forces them to change with irresistible pressure, but they certainly won't go quietly!

In my experience in education, members of this group in schools are often the most "seasoned" faculty or administrators. These people may have decades of experience teaching a certain way, and they probably see no reason to change just because someone else has a different idea and claims some supposed advantage. When I address faculty groups and speak to them about online, hybrid, and HyFlex course delivery, members of this group are easy to identify by their questions or comments at the end of the presentation.

"You'll never get me to change." "I'll be dead or retired before they'll force me to teach this way." "This is fine for you, but I'd rather teach students than computers any day."

Personally, I've never seen a situation where faculty were being forced to adopt a new way of teaching, though I am sure it happens when an organization decides on a new delivery approach, such as moving a program from the classroom to online. In my own academic program, Instructional Technologies, existing faculty have always been free to choose their delivery mode, though we do encourage HyFlex where practical, and all faculty teach some HyFlex courses. However, once a course is delivered in HyFlex and the program starts listing it that way, new faculty may not have the option to return to classroom-only participation mode.

Because tenured, public higher education faculty in the US have traditionally had a lot of control over their specific teaching activities, changes in course delivery of existing programs may be difficult to bring about unless the faculty assigned to teach a course is willing to give it a try. Higher education faculty who work for private universities, especially for-profit schools, are not likely to have as much control over course delivery decisions, and in that situation it is more likely that faculty may be forced to change (or lose their job). If an organization is run with more centralized power structures, and if it is responsive to the changes in its operational climate, faculty are likely to have less control.

The bottom line for this adoption group is that they are not likely to change, and that's that. As a change agent, you may have more success in isolating the impact of their refusal to innovate rather than continuing to try to help them make the change.

Summarizing the Messages to Various Adoption Groups

The message you use to help others adopt should vary based on their perceptions of risk, reward (value) and the behavior of their peers. A common message to all groups at once is likely to work only with 1-2 groups, at best. Many monolithic broadcast messages (which administrators love to send as emails to all faculty) end up being ignored by everyone. Don't let this happen to you. Target your communication very specifically. Table 2 summarizes messaging to various groups and describes possible HyFlex implementation contexts that may apply.

Table 2

Summary of Adoption Group Characteristic Applied to HyFlex Implementation

Adoption Group	Risk Tolerance	General Messaging	HyFlex Context
Innovators/First Adopters aka "Techies" (Developers or discoverers of innovative practices)	Very high	"This is new, and it may apply to your field or work!"	Faculty member or Faculty Development support person develops the capacity to teach both online and face to face students at the same time (HyFlex) in response to an immediate, unique need, typically in one class. A first adopter may hear about HyFlex through a conference, journal, blog, or other communication within the instructional technology field.
Early Adopters aka "Visionaries" (Sponsors of initial projects; Department Chairs, Deans, Provosts)	High	This solution can help you resolve a big issue, or take advantage of a new opportunity to meet your important goals	HyFlex courses can help you create an online program or serve online students by leveraging the effective classroom-based program you already have. HyFlex courses can provide your students with more participation and schedule flexibility, reviewable course (content) archives, and may improve their overall performance. HyFlex course may help your students complete graduation requirements more quickly.

Early Majority aka "Pragmatists" (Faculty in Departments using/considering HyFlex for one or more courses)	Moderate to Low	"This new practice has been showing good results with others like you, in situations like yours, and it will probably help you, too."	The XXXX Department has been using HyFlex courses to [list the advantage they are realizing]. Your program might find some of the same benefits. Do you have one course you'd be willing to try this approach in?
Late Majority aka "Conservatives" (Faculty in programs initiating HyFlex in many courses)	Low to Very Low	"This new way of doing our work is becoming the new standard. Doing the work the old way isn't working for us anymore; we have to change or we'll certainly suffer more."	We've been using HyFlex courses successfully in XXXX courses (or programs) and now we're expanding our use of HyFlex to your course (or program). How can we help you transition? Here's what others have done …
Laggards aka "Skeptics" (Resistant faculty in programs that have adopted HyFlex completely)	Very Low to None	"We are doing things a new way. If you won't adopt the new way, you won't be able to continue this work. Everyone else has adopted the new way and it is working out for them. You need to change."	We've transitioned our program to HyFlex delivery because [state reasons – at this point they should be compelling to the majority of the people in the organization]. We'd like you to join with us … but if you can't, we'll find something else for you to do.

References

Moore, G. A. (1991). *Crossing the chasm: Marketing and selling technology products to mainstream customers*. New York, N.Y.: HarperBusiness.

Rogers, E. M. (2003). *Diffusion of innovations*. New York: Free Press.

Brian J. Beatty

San Francisco State University

Dr. Brian Beatty is Professor of Instructional Technologies and co-coordinator of the Instructional Design and Technology MA program in the Department of Equity, Leadership Studies and Instructional Technologies at San Francisco State University. Brian's primary areas of interest and research include social interaction in online learning, flipped classroom implementation, and developing instructional design theory for Hybrid-Flexible learning environments. At SFSU, Dr. Beatty pioneered the development and evaluation of the HyFlex course design model for blended learning environments, implementing a "student-directed-hybrid" approach to better support student learning.

Previously (2012 – 2020), Brian was Associate Vice President for Academic Affairs Operations at San Francisco State University (SFSU), overseeing the Academic Technology unit and coordinating the use of technology in the academic programs across the university. He worked closely with IT professionals and leaders in other units to coordinate overall information technology strategic management at SFSU. Prior to 2012, Brian was Associate Professor and Chair of the Instructional Technologies department in the Graduate College of Education at SFSU. He received his Ph.D. in Instructional Systems Technology from Indiana University Bloomington in 2002. Dr. Beatty also holds several CA single-subject teaching credentials, an M.A. in Instructional Technologies from SF State and a B.S. in Electrical Engineering from Marquette University. Dr. Beatty has more than 30 years of experience as a classroom teacher, trainer, and instructional designer at schools, businesses, and the US Navy.

Evaluating the Impact of Hybrid-Flexible Courses and Programs

Highlights from Selected Studies

Brian J. Beatty

The emergence of Hybrid-Flexible (HyFlex) instructional formats is relatively recent in higher education. (See Chapter 1.1. Beginnings for more of the HyFlex genesis story.) Many studies that have been reported in the literature and presented at professional conferences are descriptive case studies, telling the story of one instructor's implementation of HyFlex (or other term) with their own students at a single institution. Some studies report on broader adoption efforts in entire programs, or in rare cases, across an institution. Though fewer studies report the impact on student learning and associated metrics of interest (retention, passing grade rate, GPA, time to graduation, etc.), some have been published already, and more are expected in coming years. Several substantive Masters theses and Doctoral dissertations have been published, providing very thorough analysis of particular aspects of the HyFlex model and in some cases the impact on student performance.

This chapter highlights a small number of studies (13) that provide partial representation of the literature that goes beyond the typical descriptive case study or limited literature review. Each study described below provides basic information: title, citation, and abstract, accompanied by a very brief discussion of relevance from my perspective. These summaries are not meant to be exhaustive, rather they are included to provide you with a general sense of what we (the instructional design and technology field) have reported and to provide you with a literature trail that should be easy to follow.

To supplement the literature summaries in this chapter, in this book's appendices I've included a more substantial and dynamic bibliography of the academic research associated with Hybrid-Flexible design, including some articles associated with closely-related designs. This bibliography should help you find the articles, chapters, or larger works that interest you, and then find them in your institution's library databases or online. Most are available in electronic format through standard online sources. (See Appendix A. Bibliography of Hybrid-Flexible Literature (using various terms).)

Lastly, if you know of other work that should be included here, please use the comment area below this chapter (on the edtechbooks.org/hyflex site) or contact me by other means.

2007: Student Participation in Small Graduate Seminar Classes

Title: Hybrid Classes with Flexible Participation Options – If you build it, how will they come?

Beatty, B. (2007, October). Hybrid Classes with Flexible Participation Options – If you build it, how will they come? *Proceedings of the Association for Educational Communication and Technology International Conference*, Anaheim, CA.

Abstract

This presentation reports on the participation patterns observed in four graduate courses offered at a large, urban, public university in 2006-2007. All courses were taught by the same instructor. This instructor has been using hybrid teaching methods for more than a decade at several levels of public education, and recently developed a hybrid course design encouraging flexible student participation patterns – the HyFlex course. All students in this study were enrolled in a graduate program in Instructional Technologies leading to a Master of Arts degree. In each course, a mix of face-to-face and online students used a course website (hosted in an open source Learning Management System) to share files, access course information, review past class discussions in various formats, and engage in occasional topical discussions. In addition, online students had the option to participate in live online sessions using a synchronous web conferencing tool. All students were invited to participate either in face-to-face sessions or through online activities in any given week of the semester, depending on their needs and desires. Student participation mode (in-class or online) did vary considerably from week to week in each course. Most students reported that they valued in-class activities and static website resources more than synchronous online sessions or multimedia archives of synchronous (in-class or online) activities. Students felt a strong connection to the course instructor, and most students reported that they met or exceeded their learning expectations. The paper includes a sample of student comments regarding the HyFlex course experience, with a link to raw (aggregate) survey data (Beatty, 2007).

Relevance

This study was the first to report the results from a HyFlex course implementation (using the HyFlex term specifically) and focused on one of the most important aspects of HyFlex, understanding student participation patterns when students have legitimate choices among classroom, fully online, and any hybrid mix of the two. Limited to relatively small graduate seminars (average N=11), the overall participation pattern is reported to be approximately 60% classroom, 30% online (all asynchronous for this study) and about 10% non-attendance. A major challenge reported in these classes was having very few students – on average – participating in online asynchronous discussions from week to week, potentially limiting the effectiveness of this instructional activity in supporting deep learning. The study also reports the results of a student survey administered at the end of the class, but doesn't break down survey results by participation group in any way. The anecdotal comments of students from the survey provide a range of opinions about the students' HyFlex experience, identifying both strengths and weaknesses of the course design from their own perspectives.

2012: Managing Change: Implementing a Hybrid-Flexible type model in an institution

Title: Beyond Blended Learning: A case study of institutional change at an Australian university.

Taylor, J. A., and Newton, D. (2012). Beyond Blended Learning: A case study of institutional change at an Australian university. *Internet and Higher Education 18*(2013) pp. 54-60.

Abstract

Higher education institutions that teach both on-campus and at a distance are challenged to provide all students with equitable access to learning. While the concept of blending or converging learning environments supported by technology and Internet use is common in Australian universities, institution wide implementation is rarer. This paper provides a case study of an Australian regional university that investigated institutional processes and teaching and learning approaches that would facilitate diverse students' equitable access to learning. This investigation identified facilitators and barriers to systemic implementation of blended learning. It was found that as teaching and learning

environments are socially dynamic, strategic institutional change will only happen if there is a shared vision and energy that touches all parts of an organisation (Taylor & Newton, 2012).

Relevance

Though there are many case studies of Hybrid-Flexible type implementations in the literature, this study is unique in its primary focus on the institutional change aspects of a broad, multi-year implementation at a large public university. Using the term "converged learning" to label their approach to providing both online and classroom participation options for students, the authors tell the story of Southern Cross University's journey from offering traditional online, classroom and blended courses towards teaching in a single, converged mode that combines all three formats into a single, newly defined mode. A special focus on the change process will be interesting to administrators and others interested in guiding an institution toward and through a major change effort associated with implementing a Hybrid-Flexible approach (by any name). The Converged Delivery implementation framework provides a high-level view of an institutional approach that would work at many institutions, if there were interest and capacity for substantial pedagogical change.

2013: Student Performance in a Large Undergraduate Statistics Course

Title: Student Choice, Instructor Flexibility: Moving Beyond the Blended Instructional Model

Miller, J., Risser, M. & Griffiths, R. (2013). Student Choice, Instructor Flexibility: Moving Beyond the Blended Instructional Model. Issues and Trends in Educational Technology, 1(1), 8-24. University of Arizona Libraries. Retrieved July 5, 2019 from https://edtechbooks.org/-MkvN.

Abstract

Due to the rapid increase in online course enrollments, online and blended education receives much research attention. However, a paucity of research exists for the Hybrid-Flexible (HyFlex) instructional model. This model allows students flexibility about how to participate in lecture and is geared toward providing students with educational choices and incorporating instructional technologies that mirror the personal technologies students use every day. This article outlines the development and testing of a modified HyFlex instructional model specifically designed for large, on-campus courses where students had three attendance mode choices (live online, face-to-face, or view a recorded session). To support curricular goals, the instructor implemented technology affording live lecture streaming, polling, and backchannel communication with negligible cost to students and little cost to the department. Highlighted results indicate the modified HyFlex instructional model had no negative impact on student performance in the class, both in overall learning and on individual grades. Furthermore, students greatly enjoyed the educational choices and overwhelmingly reported the incorporation of technology increased their participation in class and comprehension of course content. The authors discuss the findings, address study limitations, and offer suggestions for future HyFlex research (Miller, Risser, & Griffiths, 2013).

Relevance

This study investigated the use of HyFlex in a large (N=161) undergraduate statistics course, comparing student performance in one section of the course delivered using a localized HyFlex approach to student performance in two others sections of the same course, similar in all aspects except for the instructor. This study details the use of several instructional technologies designed to increase student engagement in the live (classroom and online) participation modes. Three goals described by the authors include (1) provide students with attendance options, (2) serve more students with less space, and (3) standardize student experience across all participation modes. The study clearly reports the HyFlex design implemented by the research team, and explains the research conducted with useful detail. The main findings of "no significant difference" in student performance among those using different participation modes supported their decision to offer the HyFlex section to increase student flexibility in terms of accessing learning

without sacrificing academic achievement or rigor. This study also reports student self-reported satisfaction scores on the use of various technologies, the overall course design, and includes a description of anecdotal evidence gathered through student focus groups. The authors explain several shortcomings they experienced, including technical challenges and problems relying on student self-reports of participation. However, based on substantially positive feedback from students and the evidence that academic achievement was not lessened, the authors conclude that the HyFlex approach is a very promising design to serve students better, especially in large undergraduate courses.

2014: Student Performance in a Large Undergraduate Business Course

Title: Academic Students' Satisfaction and Learning Outcomes in a HyFlex Course: Do Delivery Modes Matter?

Lakhal, S., Khechine, H. & Pascot, D. (2014). Academic Students' Satisfaction and Learning Outcomes in a HyFlex Course: Do Delivery Modes Matter?. In T. Bastiaens (Ed.), Proceedings of World Conference on E-Learning (pp. 1075-1083). New Orleans, LA, USA: Association for the Advancement of Computing in Education (AACE). Retrieved July 5, 2019 from https://edtechbooks.org/-ysYq.

Abstract

The Hybrid-Flexible (HyFlex) design model is a course design model that combines Hybrid learning in a Flexible way, such that students can either attend face-to-face class sessions, participate online or do both (i.e. alternate between face-to-face mode and online mode), according to their needs and availability, without learning deficits. Student satisfaction and learning outcomes (i.e. academic performance) should be the same regardless of the mode they choose. The aim of this study is to address these issues. A total of 376 students enrolled in a HyFlex information systems course responded to an online questionnaire. One-way ANOVA tests results revealed that no significant differences were found between students who chose different delivery modes on satisfaction, multiple choice test, and written exam scores. However, significant differences were observed on continuous assessment scores. The discussion relates to the importance of conducting other studies on this particular design model (Lakhal, Khechine, & Pascot, 2014).

Relevance

This study investigated the effectiveness of a large undergraduate HyFlex course (N=439) as measured by self-reported student satisfaction scores (measured with 15 likert-like scale survey items; N=376) and student grades on three types of graded activity: multiple-choice tests, written exams, and continuous assessment (sometimes referred to as "homework assignments"). The researchers were testing for equivalency in these measures among four student groups defined by participation pattern. A unique contribution of this study is the way student groups are defined, using standard definitions of classroom, online synchronous and online asynchronous students that all allow for a small amount of participation mode variance (20-30%) and a fourth group called "hybrid" which includes everyone else. The authors report that student's self-reported satisfaction scores among the four groups showed no significant difference except for a small difference between synchronous online students and asynchronous online students in their agreement with the statement: "I am satisfied with the ease of use of the technological equipment during the course." ((Lakhal, Khechine, & Pascot, 2014) Interestingly, the overall satisfaction score for this item on the survey was 77% in agreement, so even though there were statistically significant differences, a large majority of students agreed that they were satisfied with the technology used in the course. The authors report that there were statistically significant differences between the academic performance measure for continuous assessment (homework assignments) of online synchronous students compared to the online asynchronous students, with the online synchronous students having better scores. No data is shared about the nature of the continuous assessment approach, specific grading process, or actual scores, so this finding is interesting but may not be very actionable for other instructors or designers.

2015: Student Performance in a Large Undergraduate STEM Class

Title: Implementing flexible hybrid instruction in an electrical engineering course: the best of three worlds?

He, W., Gajski, D., Farkas, G., & Warschauer, M. (2015). Implementing flexible hybrid instruction in an electrical engineering course: The best of three worlds? *Computers & Education,81*, 59-68.

Abstract

This study explored a modified version of hybrid instruction, referred to as the flexible hybrid format, in a lower division electrical engineering course offered at a large public university. The objective of the study is to use longitudinal data to investigate the impact of class attendance, out-of-class study time, and motivation on student exam performance. Generalized least squares and fixed effects models were used in the analyses. It was found that class attendance was indispensable; it was associated with exam performance even when all essential course material was made available online and students generally rated the online instruction component to be of higher quality. The benefit of class attendance was then explained by the ICAP hypothesis and spaced learning practice and it was suggested that online education might be more effective in teaching relatively simpler contents. Out-of-class effort significantly predicated performance in previous weeks, but not in the final period. The harmful effect of cramming was cited to explain this phenomenon. Hence, by implication, time management might be an issue in a flexible hybrid environment. Finally, motivation was found to be a robust predicator of performance and its effect was the strongest when the course was at its most challenging stage. Besides, the relationship between motivation and exam performance was likely to be bidirectional, as higher motivation resulted in better performance, which in turn further boosted motivation. Based on current findings, directions for future research were also suggested to verify our claims and improve our implementation (He, et.al, 2014).

Relevance

This study thoroughly examined the use of hybrid-flexible course design in a large (N=159) undergraduate engineering course; participants were largely male freshman students. The authors state that their rationale for their "flexible hybrid" approach was threefold: "(a) different students have distinct learning styles and preferences, (b) mismatches between instructional styles and student performances could hurt student motivation, and (c) multiple instructional channels support this diversity and hence potentially improve student satisfaction, motivation and performance." (He, et.al, 2014, pg.60) The findings summarized in the abstract above (and fully explained in the published article) support several emphases of HyFlex design discussed in Chapter 1.4. Designing a Hybrid Flexible Course, most importantly the need for designing an engaged learning environment for all learners, especially when learning is difficult. It's not enough to leave learners on their own to watch videos, read reference materials, complete problem sets and take quizzes online. This study suggests that in-class interactive engagement among students, TA's and the instructor contributed to superior performance on the most difficult exam in the class. This could be interpreted as evidence that one of the most important challenges to HyFlex design and implementation is ensuring that online students can be (and are encouraged to be) engaged in interactive learning experiences that lead to the achievement of important learning outcomes. Especially when learning course content is difficult, and motivation to learn may be low, additional effort from instructors (and TA's when available) to engage with online students may be helpful.

2016: Student Performance in Quantitative Graduate MBA Courses

Title: A blended model: simultaneously teaching a quantitative course traditionally, online, and remotely.

Lightner, C. A. & Lightner-Laws, C. A. (2016). A blended model: simultaneously teaching a quantitative course traditionally, online, and remotely. *Interactive Learning Environments, 24*:1, 224-

Abstract

As universities seek to bolster enrollment through distance education, faculty are tasked with maintaining comparable teaching/learning standards in traditional, blended, and online courses. Research has shown that there is an achievement gap between students taking courses exclusively offered online versus those enrolled in face-to-face classes. In an effort to mitigate these observed differences, the School of Business faculty at the research institution investigated various course models to meet the needs of a diverse, non-traditional, and multifaceted student population. Ultimately, a blended course model for statistics and quantitative method courses was developed that allowed students to choose between online, remote (via interactive television), and traditional course delivery modes each week. This model is more flexible and agile than existing blended courses that have more static components. Multiple regression analysis, χ^2, and t-tests are used to demonstrate the efficacy of our model in maintaining student performance standards (Lightner & Lightner-Laws, 2016).

Relevance

This study examined the student success in an MBA Management Sciences and Statistics course (a difficult quantitative course) at a large public university in the U.S.; students are largely non-traditional (average age 24 years, most working full time, many fully online). The rationale for using a HyFlex-type course was to "address the needs of the university's non-traditional students, while maintaining student performance levels comparable to traditional course offerings." (Lightner & Lightner-Laws, 2016, pg. 231). In other words, the authors report wanting to support student participation in the online mode (addressing the needs of non-traditional students) and close the achievement gap between online and classroom students (maintaining comparable performance levels). The results shared in this report include student performance in a single course offered five times during the study period (N-156). The student success measures showed that as just as many student completed the course successfully as before (approximately 90%) and that the achievement gap between classroom and remote or online students was effectively eliminated. (The historical achievement gap in student pass rate was reported at approximately 9%.) In this study, the authors conclude that classroom students performed just as well as before, and remote or online students performed significantly better than before, when they were constrained to traditional single mode instructional formats.

2018: Student Engagement in a HyFlex Program (Master's thesis)

Title: Multimedia Students: Engaging across platforms. An Investigation of Student Engagement in the Media and Communication Master Programme at Malmö University

Meyer zu Hörste, H., and Vanderbeke, J. (2018). *Multimedia Students: Engaging across platforms. An Investigation of Student Engagement in the Media and Communication Master Programme at Malmö University.* Master's thesis at Malmö universitet/Kultur och samhälle (2018)

Abstract

This thesis investigates student engagement in the Media and Communication Programme at MalmÃ¶ University through the lens of audience- as well as learning theories. It has two main aims: Building a systematized theoretical framework to distinguish different nuances of audience activity in a cross-mediatic learning environment, and exploring factors influencing student engagement in our Media and Communication Master Programme (MCS). Constructivist Grounded Theory (Charmaz 2006) with a multi-method approach for data collection is applied to gather rich data and analyse it accordingly through coding processes and constant comparison. Following social constructivism, it argues that each student, actively constructing knowledge, has her own subjective learning preference. This thesis takes a non-normative stand on the subject.

A matrix of audience activity, grounded in audience theories and developed through the collected data, is established. In a second step this is used to illustrate the concepts participation, engagement and collaboration and then further employed to examine factors influencing student engagement. Thereby, the matrix is tested, refined and further developed. Through this approach eight states a student might be situated in while studying as well as possible barriers for student engagement were identified. Factors influencing student engagement this study found are the personal situation of the student, the access Hyflex education allows, possibilities and challenges of physical and virtual learning spaces, the interaction between teachers and students, the structure of the programme and how students are connected with each other.

By looking at student engagement in a media rich environment from an audience- as well as education-angle this thesis expands existing research. It presents influencing factors for student engagement. More importantly the theoretical model is a useful tool to investigate different kinds of student activities and to develop educational media tools. It could also be transferred to research other audiences (Meyer zu Hörste & Vanderbeke, 2018).

Relevance

This study explores student engagement in a Hybrid-Flexible environment from not only a learning lens, but also from an audience lens, describing the course environment as "cross-mediatic", which may be the first use of that term to describe a learning environment. Readers may also enjoy reading through approximately 90 pages of interview transcripts produced during the study. The six factors affecting student engagement and eight situational learner states reveal the complexity of student experience within a Hybrid-Flexible course environment and provide a sound theoretical foundation from which to build more understanding in our field through extended research in these areas.

2018: Student Perceptions of Community of Inquiry (Doctoral Dissertation)

Title: Differences in Students' Perceptions of the Community of Inquiry in a Blended Synchronous Delivery Mode

Lafortune, A. M. (2018). *Differences in Students' Perceptions of the Community of Inquiry in a Blended Synchronous Delivery Mode.* Université de Sherbrooke Dissertation.

Abstract

The blended synchronous delivery mode offers students flexibility to access educational opportunities. In this real-time setting, the instructor is teaching in a room with face-to-face students while other students are attending from a satellite site via an online platform. Asynchronous learning activities are also taking place, usually online. In this context, just like in any delivery mode, all students should have access to equal learning opportunities; yet, studies, including this research, have found differences in face-to-face and online students' perceptions of the community of inquiry in a blended synchronous delivery mode.

The Community of Inquiry (CoI) framework was adopted as theoretical lens for this research. Developed by Garrison and Arbaugh (2007), it suggests that there are three elements essential to an educational transaction, namely the teaching presence, the social presence and the cognitive presence. Shea and Bidjerano (2010) later added a fourth presence, the learner presence. Research reveals that students who perceive all four presences to be strong are satisfied with their educational experience; however, research also shows that in a blended learning environment, there can be a difference between face-to-face and online students' perceptions of the community of inquiry. This means that both groups can have different learning opportunities.

Given that more post-secondary institutions are turning to distance education for various reasons (flexibility, access, enrolment numbers, and program diversity), it is essential to find out whether the blended synchronous delivery mode (BSDM) affects students' perceptions of the CoI. This research lays the foundation for a Master's thesis research project on students' different perceptions of the CoI in a BSDM. We examine the underlying principles of effective

pedagogy, such as social constructivism and the CoI, the different distance course delivery modes available, and their advantages and challenges. The literature review on face to face (F2F) and satellite students enrolled in a non-F2F course reveals that both groups may have a different perception of the CoI presences. To verify this hypothesis, a study was conducted at the Cégep de la Gaspésie et des Îles (CGÎM). Over the winter 2017 semester, participants enrolled in three different courses taught in the BSDM mode in the nursing program at the CGÎM answered a questionnaire measuring their perceptions of the four CoI presences. The questions helped gather both quantitative and qualitative data for the mixed-methods study detailed in this proposal. From a total of 45 participants, 20 were attending their course in person while 25 were at a satellite site.

Using a mixed approach, this research measured and analyzed differences in face-to-face and online students' perceptions of the community of inquiry in a blended synchronous delivery mode. To measure students' perceptions of the four presences, we used a questionnaire elaborated by Garrison, Anderson and Archer (2000) and later revised by Shea and Bidjerano (2010). Four specific research questions were addressed. First, we looked at whether face-to-face and online students had a different perception of the distinctive elements of the teaching presence. Then, we looked at whether face-to-face and online students had a different perception of the distinctive elements of the social presence. Third, we looked at whether face-to-face and online students had a different perception of the distinctive elements of the cognitive presence. Finally, we looked at whether face-to-face and online students had a different perception of the distinctive elements of the learner presence. We examined both overall scores for each presence, as well as the distinctive elements of each of the four presences.

For the first research question, we found that face-to-face participants perceived a stronger teaching presence. More specifically, they felt that the instructor better communicated course topics and due dates, that they helped them learn and provided helpful feedback. No statistical difference was found for the second research question. Our third research question revealed that face-to-face students felt more motivated to explore content-related topics than the online students, while students at the satellite site found that online discussions helped them appreciate different perspectives more than face-to-face students did. The fourth research question revealed that face-to-face students know how to evaluate the quality of their work, are aware of their strengths as well as weaknesses in a learning context, and take the time to review the material related to the work to be done - more than online students do.

The results of this research suggest that in a blended synchronous delivery mode, face-to-face and students at a satellite site can have different perceptions of the four presences. This means that this type of delivery mode does not necessarily offer both groups equal learning opportunities. The teachers' and students' comments provide rich insight on why this may be. More work should be done on the relationship between this delivery mode and the community of inquiry. Further research may examine the emotional presence, and the relationship between the Cognitive Load Theory and the blended synchronous delivery mode. Finally, the questionnaire based on the Community of Inquiry framework elaborated in Garrison et al. (2000) and later revised by Shea and Bidjerano (2010) could be used in professional development; for example, in instances of teacher training (Lafortune, 2018).

Relevance

The abstract above summaries the major findings presented in this study. Perhaps the greatest relevance to those considering or implementing HyFlex courses in the blended synchronous format (aka. BSDM) is the in-depth look at design factor designed to support the establishment of an effective community of inquiry in the learning setting (course). Many of the design elements reported were effective, but additional suggestions for further design enhancement are also provided.

2015: First Generation Students in HyFlex Courses (Doctoral Dissertation)

Title: A Quantitative Inquiry into First Generation Students' Readiness for Distance Education.

Love, S. (2015). *A Quantitative Inquiry into First Generation Students' Readiness for Distance Education*. n.p.: ProQuest Dissertations Publishing.

Abstract

First Generation Students (FGS) enrollment in post-secondary universities and colleges has increased. Many of the First Generation Students also enroll in distance education courses because of the flexibility and conveniences distance education courses provide. But are FGS ready to take distance education courses? Do FGS have the same level of non-cognitive skills and attributes as their Non-First Generation Student counterparts? This quantitative study sought to examine FGS student readiness for distance learning courses. Based on the results, recommendations for Administrators, Faculty and instructional designers were provided (Love, 2015).

Relevance

This study attempts to answer three questions in the general context of online and/or hybrid courses, including the specific context of HyFlex courses (N courses = 903). The primary measure used to assess student readiness was the SmarterMeasure™ student readiness indicator.

The three research questions are:

1. How do First Generation Students (FGS) and non-FGS differ in terms of student readiness?
2. What relationship is there between student readiness and success in online and/or hybrid courses?
3. How do FGS and non-FGS differ in terms of the relationship between student readiness and success in online and/or hybrid courses?

One of the most interesting findings in this study is the difference between correlation results between online and hybrid course types with several factors in the SmarterMeasure indicator and those between the HyFlex course type and the same factors. In general, the HyFlex course correlations were much less likely to be significant than those of the online or hybrid course types. The implication of this may be that the HyFlex course type supports students more broadly (a wider range of student preparation states) since it provides for both in-class, online and a unique hybrid chosen by each student.

2019: Student Equity and Engagement in a HyFlex Course (Book chapter)

Title: Challenges of Student Equity and Engagement in a HyFlex Course.

Binnewies, S., Wang, Z. (2019) Challenges of Student Equity and Engagement in a HyFlex Course. In C. Allan, C. Campbell, and J. Crough (Eds.) *Blended Learning Designs in STEM Higher Education: Putting* Learning First (pp. 209-230). Singapore: Springer Nature

Abstract

HyFlex courses are characterised by a mixture of online and face-to-face learning components. In particular, students are allowed to choose to complete any part of the course in online and/or face-to-face mode. Such courses arguably provide the highest flexibility for student learning, but also pose a number of challenges to learning design. These include not only the ones inherent to online instruction and face-to-face instruction but also those of creating equitable alignment between the two modes to achieve the same learning outcomes. In this chapter, we report on the insights drawn from designing and delivering a second-year undergraduate information technology course on two campuses, in which students could complete any learning activity and assessment online or face-to-face. We describe our approach to support student engagement, group work and a peer review in HyFlex mode, and some challenges we faced to match learning designs to available technology. We evaluated our teaching components according to student participation and their quantitative and qualitative feedback. We found that most students appreciated the HyFlex mode delivery and

while our approach was shown to be effective, it was in some way constrained by the technology available (Binneweis & Wang, 2019).

Relevance

This study reports the HyFlex course design used at two campuses of an Australian university, emphasizing the design factors and instructional practices implemented to assure student equity (given the opportunity to achieve equivalent learning outcomes) and student engagement in the learning process. Gathering information from course (presumably LMS) logs and, most substantially, student surveys, the study concludes that the design presented was effective in achieving goals of student equity and engagement as defined by the authors and reported by students.

2019: Student Perceptions of HyFlex Courses

Title: La perspective étudiante sur la formation comodale, ou hybride flexible. [What do university students think about hybrid-flexible, or HyFlex courses?]

Gobeil-Proulx, J. (2019). La perspective étudiante sur la formation comodale, ou hybride flexible. [What do university students think about hybrid-flexible, or HyFlex courses?] *Revue internationale des technologies en pédagogie universitaire*, *16*(1), pp. 56-67. Available online: https://doi.org/10.18162/ritpu-2019-v16n1-04

Abstract

Un cours offert sous le format comodal, ou HyFlex, peut être suivi en présentiel ou à distance par les étudiants, ce qui leur permet de choisir hebdomadairement le mode qui leur convient le mieux. Il est important, pour le développement de cette offre de formation exploratoire au sein des établissements d'enseignement supérieur, d'examiner la perspective des étudiants inscrits à ces cours. Nous avons proposé un questionnaire à tous les étudiants inscrits dans 9 cours comodaux offerts dans 4 facultés différentes d'une université canadienne; 311 étudiants (N = 311) y ont répondu volontairement. Trois grands constats émergent de notre analyse : le format comodal est grandement apprécié par les étudiants; les étudiants choisissent majoritairement la formation à distance; les étudiants tendent à se familiariser avec un mode et à le garder tout au long de la session.

[English translation] A course offered in the HyFlex format can be followed face-to-face or remotely by students, which allows them to choose weekly the mode that suits them best. It is important, for the development of this exploratory offer in higher education institutions, to examine the perspective of the students enrolled in these courses. We administered a questionnaire to all students enrolled in 9 HyFlex courses offered at 4 different faculties of a Canadian university; 311 students (N = 311) responded voluntarily. Three major findings emerge from our analysis: the HyFlex format is greatly appreciated by the students; most students choose distance learning; students tend to choose a modality and stay with it throughout the session (Gobeil-Proulx, 2019).

Relevance

This study reports on the self-reported perceptions of 311 students enrolled in multiple courses within multiple "faculties" in a Canadian university. The study also introduces the term "comodal" as an additional label for a Hybrid-Flexible course format. Not surprisingly, one of the findings is that "The comodal format is greatly appreciated by students." (pg. 63) This study also reports that students favored the remote (online) mode over the face-to-face mode, with 60% choosing never to attend class in person, despite occasional technical difficulties with the online technology.

The study also found that relatively few (28%) of students ever changed participation mode during the course. It seems that these students tended to find a preferred mode of participation and continued in that mode for the duration of the course.

2017: Literature Review for Blended Synchronous Delivery at the Graduate Level

Title: Blended Synchronous Delivery Mode in Graduate Programs: A Literature Review and Its Implementation in the Master Teacher Program.

Lakhal, S., Bateman, D. & Bédard, J. (2017). Blended Synchronous Delivery Mode in Graduate Programs: A Literature Review and Its Implementation in the Master Teacher Program. *Collected Essays on Learning and Teaching 10*, pp. 47-60.

Abstract

The aim of this study is to present a narrative literature review of advantages, challenges, and conditions for the success of blended synchronous course delivery mode. For this purpose, we searched the database EditLib and analyzed 16 existing papers from 2001 to 2016. The conditions for success were operationalized in the Master Teacher Program (MTP) and its challenges were addressed in building a Blended Session Protocol. This protocol also combines lived experience. It is now used in the MTP to ensure a standardized and consistent implementation of this course delivery mode into our courses. Reviewing the literature on this delivery mode and presenting an example of its use in the MTP are important issues. From a theoretical point of view, the present study results help build a theoretical basis for future research on this course delivery mode and would enrich existing literature. From a practical point of view, this study provides administrators and higher education faculty members with guidance on how to implement such course delivery mode (Lakhal et al., 2017).

Relevance

This study provides a thorough review of published academic literature associated with a blended synchronous course format at the graduate level. Many blended synchronous formats could also be called "Hybrid-Flexible" (if student choice on format from session to session is available), so the review is useful to readers adopting or considering HyFlex implementation at their institution. The 30 studies referenced in the review provide many opportunities for learning from others' experiences.

2018: Synchronous Hybrid Learning Literature Review

Title: Benefits, Challenges and Design Guidelines for Synchronous Hybrid Learning: A Systematic Literature Review.

Detienne, L., Raes, A. & Depaepe, F. (2018). Benefits, Challenges and Design Guidelines for Synchronous Hybrid Learning: A Systematic Literature Review. In T. Bastiaens, J. Van Braak, M. Brown, L. Cantoni, M. Castro, R. Christensen, G. Davidson-Shivers, K. DePryck, M. Ebner, M. Fominykh, C. Fulford, S. Hatzipanagos, G. Knezek, K. Kreijns, G. Marks, E. Sointu, E. Korsgaard Sorensen, J. Viteli, J. Voogt, P. Weber, E. Weippl & O. Zawacki-Richter (Eds.), *Proceedings of EdMedia: World Conference on Educational Media and Technology* (pp. 2004-2009). Amsterdam, Netherlands: Association for the Advancement of Computing in Education (AACE). Retrieved June 20, 2019 from https://edtechbooks.org/-woe.

Abstract

More and more universities invest in technology-enhanced learning which raises the question of how these environments need to be shaped. A specific type are synchronous hybrid learning environments in which face-to-face and remote students receive simultaneous and synchronous instruction. These new settings ask for a redefinition of the instructional design. Unfortunately, there is lacking research that outlines design principles, which is why teachers are still struggling with the implementation. Boelens, De Wever and Voet (2017) put forth key challenges and guidelines for blended learning in general, but this study specifically focuses on synchronous hybrid learning, which has not yet been investigated in the field. This paper reports on a systematic review in progress. Based on preliminary results, we can

state that most studies deliver benefits and challenges which often result in some design guidelines. Given the limited amount of studies on synchronous hybrid learning, there is need for further research (Detienne et al., 2018).

Relevance

This study presents a thorough review of the existing literature (in 2018) on the blended synchronous course format. Almost two dozen studies are reviewed. Blended synchronous formats are similar to, and often the same in essence as Hybrid-Flexible designs, though in some there is no substantial flexibility (students may not have the freedom to choose participation mode) and many may not include a designed path for asynchronous learners.

2020: Comparing Student Learning and Satisfaction between Traditional and HyFlex Delivery (Doctoral Dissertation)

Title: Traditional, Online or Both? A Comparative Study of University Student Learning and Satisfaction Between Traditional and Hyflex Delivery Modalities

Rhoads, D. D. (2020). *Traditional, Online or Both? A Comparative Study of University Student Learning and Satisfaction Between Traditional and Hyflex Delivery Modalities.* Dissertation Concordia University Irvine, 2020, 148; 27995688. Available online: https://edtechbooks.org/-Sdh

Abstract

The purpose of this mixed method causal comparative and phenomenological study was to discover and examine the impact, if any, of 16-week traditional and five-week Hyflex delivery modalities on student learning and satisfaction within undergraduate courses. Quantitative satisfaction data was collected through a Likert survey as well as through data extraction from the institution's student information system. Qualitative data was collected from students through open ended survey questions as well as from select faculty through interviews. For each of the two hypotheses, statistical analysis was presented through descriptive statistics as well as through comparative analysis. The quantitative analysis was followed by qualitative analysis that explored themes and patterns that emerged.

The participants in this study included a total purposive sample of eighty-one students from fifteen undergraduate courses, offered in the traditional and non-traditional programs of a small private college in Southern California, and offered over the course of five academic semesters. While statistical findings on student performance/learning did not reveal a significant difference between course delivery modalities in the area of final grade average, statistical findings did reveal a significant difference between course delivery modality and student satisfaction in the area of two distinct measures of student satisfaction. Additionally, non- statistical findings reflected a positive relationship between course attendance flexibility and student satisfaction.

Relevance

This study presents a comparison of student learning outcomes and self-reported student satisfaction in 15 courses over a multi-year period, providing evidence of the success of this institution's HyFlex course program. This report provides a comprehensive explanation of the HyFlex course design as compared to the traditional course. In addition, since this is a dissertation report, a substantial review of relevant literature is included with in-depth discussion of the fundamental principles of HyFlex design.

This study is also described in Chapter 3.9 of this volume, In that report, additional evidence for institutional cost savings (real and prospective) is provided and explained.

For more studies associated with Hybrid-Flexible Course Design, see [Appendix A: Bibliography of Hybrid-Flexible Literature (by any name)](#)

Brian J. Beatty

San Francisco State University

Dr. Brian Beatty is Professor of Instructional Technologies and co-coordinator of the Instructional Design and Technology MA program in the Department of Equity, Leadership Studies and Instructional Technologies at San Francisco State University. Brian's primary areas of interest and research include social interaction in online learning, flipped classroom implementation, and developing instructional design theory for Hybrid-Flexible learning environments. At SFSU, Dr. Beatty pioneered the development and evaluation of the HyFlex course design model for blended learning environments, implementing a "student-directed-hybrid" approach to better support student learning.

Previously (2012 – 2020), Brian was Associate Vice President for Academic Affairs Operations at San Francisco State University (SFSU), overseeing the Academic Technology unit and coordinating the use of technology in the academic programs across the university. He worked closely with IT professionals and leaders in other units to coordinate overall information technology strategic management at SFSU. Prior to 2012, Brian was Associate Professor and Chair of the Instructional Technologies department in the Graduate College of Education at SFSU. He received his Ph.D. in Instructional Systems Technology from Indiana University Bloomington in 2002. Dr. Beatty also holds several CA single-subject teaching credentials, an M.A. in Instructional Technologies from SF State and a B.S. in Electrical Engineering from Marquette University. Dr. Beatty has more than 30 years of experience as a classroom teacher, trainer, and instructional designer at schools, businesses, and the US Navy.

Unit III. Hybrid-Flexible Implementations Around the World

Chapter authors have all designed their own Hybrid-Flexible courses either as faculty or as instructional designers working with faculty. Their voices and stories provide a rich tapestry that is itself an example of a hybrid (mixed methods) flexible (changing, adaptive) approach to Hybrid-Flexible course design. This list is dynamic – additional chapters are added as they are contributed by those doing the work. (If you are interested in proposing a case report chapter, please see the ongoing call for proposals at the end of Unit III.)

- [**Chapter 3.1 Fitting Flexibility across the Curriculum**](#), written by Cathy M. Littlefield and Stephanie Donovan, tells the story of implementing "Peirce Fit®" (local branding for their hybrid-flexible approach) at Peirce College in Philadelphia, PA.
- [**Chapter 3.2 One-size Fits None**](#), written by Dr. Jeanne C. Samuel, Dr. Amanda H. Rosenzweig, Dr. Mark Mclean, and Dr. Rene Cintron, tells the story of implementing HyFlex at Delgado Community College in the Louisiana Community & Technical College System in the New Orleans, LA metropolitan area.
- [**Chapter 3.3 New Technologies Deliver on the Promise of HyFlex**](#), written by Glori Hinck and Lisa Burke tells the story of implementing HyFlex at the University of St. Thomas in Minneapolis and St. Paul, MN.
- [**Chapter 3.4 Using HyFlex in Statistics for Engineers and (Data) Scientists**](#), written by Jackie Bryce Miller and Melinda E. Baham, tells the story of implementing HyFlex at the University of Michigan and references earlier implementation at The Ohio State University.
- [**Chapter 3.5 HyFlex in Northern Ontario**](#), written by Melanie Lefebvre, tells the story of implementing HyFlex at Cambrian College in Sudbury, Ontario, Canada.
- [**Chapter 3.6 HyFlex at Montana State University**](#), written by Susan Baltzer-Reitz and Samuel Boerboom, tells the story of how HyFlex implementation at Montana State University Billings began in 2018.
- [**Chapter 3.7 A Faculty Transitional Journey from Single Mode to HyFlex Teaching**](#), written by Zahira Merchant, tells how a faculty new to HyFlex experienced joining an existing faculty already practicing HyFlex delivery in a graduate program.
- [**Chapter 3.8 Hyflex Learning within the Master of Teaching Program@KU Leuven**](#), written by Annelies Raes, Marieke Pieters & Piet Bonte, tells the story of the development of a unique hybrid virtual classroom to support EDU (HyFlex-style) courses in the Master of Teaching Program at KU Leuven in Belgium.
- [**Chapter 3.9 Increasing Flexibility, Satisfaction, and Efficiency Using the Hybrid Flexible Approach**](#), written by David Rhoads of Vanguard University, tells the story of HyFlex implementation at San Diego Christian College as an approach to improve enrollment in class sections to better use existing instructional capacity. This chapter includes a summary of the program evaluation conducted during David's doctoral dissertation.
- [**Chapter 3.10 A Modified Version of HyFlex**](#), written by Elise Verdooner and Matthea Marquart of Columbia University's School of Social Work, tells the story of the implementation of a version of HyFlex called "Remote Live Participation (RLP)" which provides synchronous participation in the classroom as well as online.
- [**Chapter 3.11 Video Lab HyFlex: Practical Experience with Practical Applications**](#), written by John Doyle of Cabrini University, tells the amazing story of implementing HyFlex in a video production course, in response to the need for remote and in-person participation options for students during the COVID-19 pandemic.
- [**Chapter 3.12 One University's Hybrid-Flexible 'Studyflex' Course Experience in Melbourne, Australia**](#), written by John Bevaqua, Meg Colasante, and Swapna Verma of Monash and Deakin Universities, tells the story of "StudyFlex", a form of hybrid-flexible course that supports students in creating their own unique path through a course to best support their studies. This case reports the pilot of StudyFlex in five different courses and the results of that trial.
- [**Chapter 3.13 HyFlex Teaching and Learning at Bow Valley College**](#), written by Svetlana Miftahov-Rapoport of Bow Valley College, tells the story of the development of the "Modern Classroom" concept at the college to support HyFlex teaching and learning during the pandemic. This chapter reviews the development of their local approach, the focus on implementing Universal Design for Learning principles, and includes the student voice through survey results and video commentary.
- [**Chapter 3.14 Evolving HyFlex from Emergency Measure to Sustainable Program: Northern State University**](#), written by Ben Harley and Danette Long of Northern State University, tells the story of the development of Northern's HyFlex effort to support effective teaching and learning during the pandemic and goes on to explain how the implementation effort has changed to emphasize HyFlex for the long term. This chapter explains their approach to faculty development and the HyFex certification program launched in the fall of 2021.
- [**Chapter 3.15 HyFlex Learning: Starting from where you are**](#), written by Shirley Tan and Loh Gin Hin of Temasek Polytechnic in Singapore, tells the story of their implementation of HyFlex in response to the classroom restrictions during the pandemic (2021) and their efforts to expand the use of HyFlex in the curriculum by using simple technologies and faculty development practices.

- [Chapter 3.16 HyFlexK12: A Hybrid and Flexible Learning Option Given the Appropriate Circumstances and Conditions](), written by Jerusalem Rivera-Wilson of the University at Albany and Gina Riley of CUNY Hunter College, tells about their experiences of HyFlex in K-12 education. Several mini-cases are included which show examples of the range of situations where HyFlex may be appropriate in the K-12 setting.
- [Chapter 3.17 A Pandemic HyFlex Story at Central Michigan University](), written by Dr. Ben Andera of Central Michigan University (CMU), tells the story of the implementation and rapid expansion of HyFlex at CMU from 2020-2022. Included in this story are the perspectives of faculty, students, administration (including the university president), and the author - who served as the implementation lead. Also included are the technology designs for three different classroom types and links to videos created by CMYU staff to support faculty learning to use the HyFlex classrooms.
- [Chapter 3.18 HyFlex Programming as a Delivery Approach for Changing Student Demographics and Demands]() written by Dr. Chelsea McNeely, Dr. Brooke Hildebrand-Clubbs, Dr. Sarah Dietrich, and Abby Ruessler of Southeast Missouri State University (SEMO), tells the story of the implementation of over 100 HyFlex course sections at SEMO over the past few years in response to changing student demographics and participation preferences. Two completely HyFlex programs are profiled, the MA Higher Education Administration and the MA Teaching English to Speakers of Other Languages (TESOL).
- [Chapter 3.X Contribute Your HyFlex Story](), is a perpetually open call for case reports from designers, faculty, and institutions who have experienced Hybrid-Flexible course design and implementation firsthand, even if they use a different name for this approach.

Fitting Flexibility Across the Curriculum
One Size Fits None
New Technologies Deliver on the Promise of HyFlex
Using HyFlex in Statistics for Engineers and (Data) Scientists
HyFlex in Northern Ontario
HyFlex at Montana State University Billings
A Faculty Transitional Journey from Single Mode to HyFlex Teaching
Hyflex Learning within the Master of Teaching Program@KU Leuven
Increasing Flexibility, Satisfaction, and Efficiency Using the Hybrid Flexible Approach
A Modified Version of HyFlex
Video Lab HyFlex: Practical Experiences of Courses with Practical Applications
One University's Hybrid-Flexible 'Studyflex' Course Experience in Melbourne, Australia
HyFlex Teaching and Learning at Bow Valley College
Evolving HyFlex from Emergency Measure to Sustainable Program: Northern State University
HyFlex Learning: Starting from where you are
HyFlexK12

Fitting Flexibility Across the Curriculum

Peirce College

Cathy M. Littlefield & Stephanie Donovan

The processes and experiences described in this chapter took place at an associate, bachelor's, and master's degree-granting, private, not-for-profit, non-residential, Mid-Atlantic urban institution. Student demographics are as follows: 80% identify as students of color, 70% are female, 61% is equal to or over the age of 30, 65% identify as first-generation college students, 85% receive Financial Aid, and 67% are Pell Grant Eligible.

As an institution steeped in a long, rich history as a pioneer of serving the adult learner, innovation has always run deep in the organizational culture.   Most recently, in response to declining retention, enrollment, and credit hours, an innovative course delivery option was piloted in Spring 2014. In this new model, now called Peirce Fit®, students choose, every week, whether to participate online or on-campus within a single course. Online participation is registered when students submit a gradable assessment during a given week of class, for example, contribute to a threaded discussion or complete an online quiz. On campus participation is registered when a student attends class on campus.

Before Peirce Fit®, classes were offered exclusively online or on-campus for the entirety of the course. Courses at this institution are delivered in a 7-week accelerated format, which requires both online and on-campus learners to complete course work asynchronously.   Following the pilot study, the College decided to implement the Peirce Fit® model across the institution, beginning with courses in the Graduate Division and Health Programs division in Fall 2016.   Enthusiasm for this model, in part, focused on removing the lack of in-person attendance as a barrier to student retention in a single course. In this chapter, we will discuss the institutional needs for modifying the traditional delivery model, the goals of the new model, the implementation challenges faced, and the impact of the new model on students, faculty, and the delivery of instruction.

Rationale—Why Now?

Developing and deploying innovative, flexible, academic instructional models supports the need to respond to a changing higher education landscape. Innovation and institutional efficiency are and always have been priorities at the Peirce College. During challenging times, the college frequently turns to innovative delivery methods as a way of meeting the students where they are and providing opportunities for learning that are student-centric, fresh, and unique. In the early 1990s, the College was on the forefront of the online learning paradigm, and in 2014, turned to innovation again as a way to bridge the gap between course offerings, and declining retention and persistence concerns, while creating sustainable enrollment.

Four years before the pilot, the College introduced three new undergraduate health programs to its existing curriculum. Even though enrollment in these programs grew, the on campus and online sections were relatively small as a result of giving students an option for delivery mode. The College saw this as an opportunity to explore the efficacy of offering exclusive online or on-campus instruction. In the new model, students are provided the flexibility to decide every week how they will attend; fully online or on campus. During the transition to the new model, preserving on-campus delivery remained an important aspect. Research (Malone, 2014) confirmed adult learners appreciate flexibility, as such, by design we maintained a face-to-face component. Offering flexibility rather than directing students to a singular learning modality was the most appealing option for meeting the collective needs of the students and the College. The design approach was organized and intentional, with the conscious plan to provide flexibility students desire, as well as continuous enrollment and degree completion.

Roadmap for Implementation

A steering committee was convened and charged by the Vice President Academic Advancement to guide and document the pilot in the academic year 2014-15 and develop a recommendation for a new hybrid delivery model. Initially organized into two workgroups, the steering committee was comprised of the department program chairs, the dean of academic operations, the instructional design specialist, and the student learning assessment specialist. Specifically, the workgroups were committee was charged with:

1. Articulating a working definition of Peirce Fit® for the pilot;
2. Evaluating courses piloted in the Peirce Fit® model and determining which elements of the pilot should remain as recommendations in the final report;
3. Undertaking an environmental scan and exploring how higher education institutions were using hybrid course delivery models;
4. Establishing a quality assurance plan for Peirce Fit® courses;
5. Exploring course load implications for Peirce Fit® faculty and the College;
6. Exploring faculty development implications for faculty teaching Peirce Fit® courses;
7. Exploring financial aid implications for students enrolled in Peirce Fit® courses;
8. Assessing financial implications to the College for offering Peirce Fit® courses/model (include budget projections);
9. Submitting a final report and recommendations to the College's Executive Leadership Team

The Peirce Fit® model was conceived of and piloted before the College's knowledge of Beatty's HyFlex model (EDUCAUSE, 2010). While attending the Council for Adult and Experiential Learning (CAEL) conference in November 2014, a faculty member learned about the HyFlex model. Upon her return from the conference, she shared the discovery of HyFlex with members of the College's executive leadership team responsible for managing the pilot and its subsequent college-wide implementation. Discovery of the Hylex model during the pilot phase was key to advancing the work of the steering committee and the early adopters. Specifically, we looked to the HyFlex principles of learner choice, equivalency, reusability, and accessibility to guide how we set about transforming on campus only and online only courses to Peirce Fit® courses. The principle of equivalency informed how faculty set expectations for both groups of students within a single course. Early versions of Peirce Fit® included a weekly table denoting the course learning outcomes for a given week and the assessment(s) for online and on-campus learners.

As the pilot was underway, the President and Executive Leadership Team identified Peirce Fit® as a strategic initiative, and the pilot status was removed. Consequently, the steering committee was restructured and a new sub-team was tasked with undertaking the financial analysis of Peirce Fit®, to include the development of an across-the-institution implementation timeline, financial analysis, required resources, identification of operational challenges, and marketing opportunities. In Fall 2014, a presentation was made at a faculty meeting designed to discuss the driving forces for change, including managing canceled classes, enrollment, retention, persistence, attendance, and the need for students to maximize financial aid in relation to timely degree completion.

The College began implementing the Peirce Fit® model in Spring-Summer, 2014-2015, with the conversion of Health Programs courses and Graduate Studies courses. Faculty received one course release time to undertake this work. Additionally, a faculty development program was created to facilitate the conversion and implementation process. In fiscal year 15-16, the Peirce Fit® model was implemented in six additional degree programs, including Accounting, Business Administration, Human Resource Management, Integrated Leadership, Information Technology, and Technology Management. In fiscal year 16-17, the College completed its conversion of courses to the Peirce Fit® model with the remaining programs in Paralegal Studies, Legal Studies in Business, Criminal Justice Studies and General Studies.

Implementation Process

The design of the Peirce Fit® model, originally termed FLEX, originated from the work of the implementation team, which was comprised of four subteams; Marketing & Communications, Instruction, Faculty & Student Support, and Assessment. The Instruction subteam was charged with:

1. Determining course shell management (masters - one for FLEX and on for online?);
2. Determining threaded discussion opportunities for different uses;
3. Demonstrating technologies that could support the FLEX delivery; (Adobe Connect, Google Hangout, Camtasia Relay, YouTube, ApprenNet)
4. Developing pedagogy best practices for the FLEX environment (Ex; flipped classroom);
5. Establishing minimum design criteria for FLEX courses (how are FLEX courses different); (Early Adopters)
6. Implementing a plan for strengthening the student and instructor experience in a FLEX course; (chart, lesson plans, learning activities)
7. Articulating faculty expectations for teaching FLEX; (FAQ)
8. Implementing classroom management and student management strategies in a FLEX environment (Ex; student no shows); (FAQ, lesson plan)
9. Determining the course schedule for FLEX and online-only offerings;
10. Authoring and securing approval of "Note to Instructor" language
11. Documenting how one would FLEX a course
12. Developing an expedited QA process and rubric
13. Developing an attendance policy
14. Developing FAQs for students and faculty

While the process was fully planned, documented, and executed, the Peirce Fit® model is, in fact, a living instructional model and institutional initiative. As an institution, all divisions are engaged in the iterations that move the model forward with a focus is on continually striving to strengthen and improve instruction and opportunities for students.

Challenges

The implementation of Peirce Fit® across the College was not without challenge, and we continue to refine aspects of the model as part of our ongoing learning and refinement. The brevity of the pilot phase created a sense of curiosity among the faculty as to the rationale for implementing the Peirce Fit® model. Viewed as an opportunity to engage faculty, two focus group sessions were held to garner feedback and perspectives. In 2016, focus groups were held on campus for the full-time faculty and online for the adjunct faculty. The focus groups consisted of nine probing questions related to the understanding of Peirce Fit®, perceptions, likes, challenges, classroom management strategies, perceived student perceptions, and needed support. The following themes and frequency emerged from the transcripts:

Table 1

Focus Group Themes

Theme	Number of Coding References	Number of Words Coded	% of total
Impact on Teaching & Learning	70	2,944	**45%**
Faculty Workload	32	1,306	**20%**
Attendance	13	634	**10%**
Flexibility	12	566	**9%**
Faculty Understanding of Peirce Fit®	14	524	**8%**
Technology	12	330	**5%**
Adjunct Faculty	7	180	**3%**
Total	**160**	**6,484**	**100%**

Additionally, several sub-themes were identified:

Table 2

Focus Group Sub-Themes

Theme	Sub-Theme	Sub-Theme
Impact on Teaching & Learning	Student expectations	Lesson planning, classroom experience
Faculty Workload	More work - teaching twice	Low on-campus attendance can make instruction difficult / time intensive
Attendance	Offers students a plan to avoid absenteeism	Planning for small on-campus attendance
Flexibility	Student choice is important for adult learners	Students not changing from week-to-week & lack of understanding of what Peirce Fit® is

Faculty Understanding of Peirce Fit®	Desire for students to attend at least the first class on campus	Lack of consistency in how Peirce Fit® is applied to instruction
Technology	More robust technology for instruction (lecture capture and synchronous delivery)	Students using cell phones for assignments
Adjunct Faculty	Balancing the requirements of Peirce Fit®	1-hour wait time & concern for recruitment

The consolidated data were presented to the VPAA, and the following recommendations were adopted:

1. Strengthen professional development for faculty focused on instruction, teaching, and learning
2. Evaluate faculty workload
3. Ensure consistent messaging across institution related to Peirce Fit®
4. Adopt and implement new and more robust instructional technology tools
5. Survey faculty for areas in which support is needed
6. Evaluate foundational courses that should not be offered in Peirce Fit®

Impact of the Plan

The approach was deemed successful. With a clearly articulated plan, the Peirce Fit® model was implemented in an accelerated fashion as a means to address an institutional need. As such, a quick victory was identified when data revealed a decrease in absenteeism. However, the approach which included gaining longitudinal faculty perceptions identified area of opportunity, to include the previously identified themes. For other academic institutions who aspire to innovate, it is critical to have a strong project management plan and to engage key stakeholders along the way. Success will be more likely with a cross-institutional team; a high level of coordination, and fully engaged collaboration. A testament to the success of this plan was the willingness of the faculty to be engaged and willing partners in this process, and to continually strive for the flexibility Peirce Fit® affords our students.

Conclusion

The changing higher education landscape and inherent challenges lead to faculty experimentation with an innovative hybrid delivery model that would significantly alter how instruction is delivered at this College. For students, the model would provide flexibility in how they attended each class within a course, and for the College, the model pointed toward real opportunities to improve operational efficiency. Following a pilot study, this College decided to implement the Peirce Fit® model with hopes to address challenges currently being faced.

Under the leadership of the Vice President, Academic Advancement, faculty continue to experiment, refine, and improve the Peirce Fit® model as part of the academic and curriculum planning process. In Fall 2017, the College implemented a new learning management system (LMS) called Canvas. Canvas offers more robust learning technologies than the previous LMS used at the College. In many ways, access to this new technology aligns with the Peirce Fit® model and has been a positive experience for both students and faculty in the Peirce Fit® environment. However, learning is ongoing and mastering the Peirce Fit® model has proven to be an iterative process, and each academic year, the model is improved.

References

EDUCAUSE. (2010, Nov). 7 things you should know about...the HyFlex course model. *EDUCAUSE Learning Initiative.*

Malone, S. (2014). Characteristics of adult learners. *Training & Development*. 41(6).

Cathy M. Littlefield

Peirce College

Cathy M. Littlefield, Ed.D., M.B.A., serves Peirce College in the capacity of Professor and Faculty Chair of the Business Division and joined Peirce College in 2012. As faculty Chair of the Business Division, Dr. Littlefield oversees the Accounting, Business Administration, Human Resource Management, and Organizational Leadership programs. Additionally, her responsibilities include the organization, administration, continuous program review, planning, development, and general effectiveness of the Division. As a business professional with nearly 30 years of experience in hospitality, human resources, business ownership and higher education, Dr. Littlefield combines practice with scholarship. She has been teaching graduate and undergraduate students at the university level since 2009, and while at Peirce, was hired as the first full-time faculty member of the graduate division. She holds a Master's in Business Administration and a Doctorate in Education and her research interests include organic collaboration, collaborative learning and work environments, advisory board development, team development, course design and technology integration within the scope of teaching and learning. Dr. Littlefield is a published author of scholarly work and has presented at numerous professional conferences.

Stephanie Donovan

Peirce College

Stephanie Donovan, Ed.D., MBA, RHIA is Faculty Chair, Health Programs with more than 15 years of successful experience teaching and administering undergraduate programs in health information management and healthcare administration. Stephanie specializes in strategic planning, organizational development, leadership and management, electronic health records, and health law. An advocate for higher education reform, Stephanie is an active contributor to developing innovative instructional delivery models and reducing barriers to degree completion. Stephanie enjoys traveling with her family. Bar Harbor and Kennebunkport, Maine and Cape May, New Jersey are among her favorite destinations.

One Size Fits None

Delgado Community College and Louisiana Community & Technical College System

Jeanne C. Samuel, Amanda H. Rosenzweig, Mark McLean, & René Cintrón

In 2014, Jeanne Samuel discovered a model for delivering courses that extended the hybrid model already in use at Delgado. The new model, HyFlex, solved several institutional challenges: (1) meeting enrollment demands without enough physical space, (2) creating a flexible class schedule to support the needs of our part- and full-time working students and for 'life happens' moments, and (3) attracting more students by appealing to adult learners' preference of choice (LCTCS, 2019) and control in their learning environment. HyFlex course design meets the needs of active military and veterans, an important student group at Delgado Community College. In 2015, HyFlex was a form of personalized learning in use at Delgado Community College before the term was in vogue. With an increase of New Orleans area school closures due to weather events, HyFlex design has been discussed as an important part of our disaster recovery plan.

Institutional Goals for HyFlex

1. Serve more students in the same physical space.
2. Increase student enrollment (by appealing to students' desire to control aspects of their learning environment).
3. Increase student retention (by providing student participation flexibility).
4. Prepare for business continuity in the event of a natural disaster.

Flexibility to Serve the Needs of Growing Demographic

By Fall 2018, 68% of our student population was female, the average age of our students continues to rise. Fall 2018 data show that 34% of our students were age 25-34 with the average age of 27.9 years. Our part-time student population is growing while full-time student demand is decreasing. From Fall 2014 to Fall 2018, full-time student enrollment decreased from 43% to 36% while part-time enrollment rose from 57% to 64%. In addition, from Fall 2017 to fall 2018, although a low number, we experienced a decline in demand for degrees and certifications and an increase in non-degree seeking students. Students taking any online class rose 13.8% between Fall 2014 and Fall 2018 (36% of all students in Fall 2018). And, students attending fully online rose 14.2% during the same period (13% of all students in Fall 2018). Importantly, although Delgado has a presence on average in 20 states, 68% of students enrolled and attending at the main City Park campus live close to the campus. 85% of students attending our West Bank campus live near the campus. The data show that HyFlex course design is a good fit for Delgado Community College and may become an important part of our course delivery and marketing strategies.

Serving More Students

During the Fall 2014 semester, two instructional designers and one assistant dean from Delgado Community College's Business and Technology Division met to discuss the merits of adopting the use of the HyFlex delivery model for business courses. The Business department was already employing a space-sharing model for their hybrid courses. Typically but not exclusively, at our institution hybrid delivery requires students to attend one day face-to-face (F2F) and the rest online. Unlike the flipped classroom model, the day that students meet face-to-face was not necessarily lecture-free. Face-to-face classes are scheduled (1) Monday and Wednesday (2) Tuesday and Thursday. For our HyFlex model, two different classes were scheduled in the same room during the same time slot on different days, one day each week. This meant that the number of students served in the classroom raised to a maximum of 50 from 25 for two courses. Had the additional two courses (four sections) in the HyFlex pilot shared the same timeslot, this would have raised the physical space gain overall from 150 to 300 seats. The pilot was conducted on the institution's West Bank campus, which has a four-day work week Monday - Thursday. Please see Table 1 below.

Table 1

Room Capacity by Delivery Mode

Typical Room Use for Hybrid Course	HyFlex Room Use
· 1 room	· 1 room
· 25 seats	· 25 seats
· 1 class meets Tues and Thurs	· 1 class meets on Tues
	· 1 class meets on Thursday
Number of students served = 25 students	Number of students served = 50 students

Improved Student Success

Since 2017, all courses in the Business programs are delivered as fully online, F2F, and hybrid options per term. Students may also register for 8-week terms rather than 16-weeks. In other words, students have the option to register for "full term" courses (16-weeks) or "shorter-term" courses (8-weeks). The 8-week option provides additional flexibility to students by enabling sequential or concurrent completion of courses. Furthermore, the sequential option allows students to register for courses in the second 8-weeks as a result of completing a related pre-requisite course in the first 8-weeks of the semester.

In addition to the aforementioned benefits of adopting the HyFlex course delivery model, we also anticipated that improved student success (retention, progression and completion) might be an additional benefit. Delgado is a member of a 12-institution community and technical college system, the Louisiana Community and Technical College System (LCTCS). As with similar institutions, only 18% of LCTCS students withdraw for academic reasons (LCTCS, 2019). Research regarding the achievement gap in higher education between students enrolled in online courses compared to those completing face to face courses is mixed. (Carrone, 2008; Helms, 2014; Jaggars & Bailey, 2010) Although this gap at Delgado Community College is closing, looking at the aggregate data, students who attend fully online are less successful than those who attend fully F2F. Delgado is in the process of reviewing course delivery mode and student success by instructor to identify opportunities for improving student success online. Preliminary results are consistent with previous studies; the relationship between delivery mode and student achievement is mixed. However, anticipated outcomes for HyFlex course delivery is promising. A 2010 metadata analysis of research comparing the achievement gap between online students and student attending class in-person cited one study that found that students perceived that the face-to-face course better prepared them (qualitative). (Jaggars & Bailey, 2010) Another study citing a United

States Department of Education (USDOE) meta-analysis noted that classes offering both face-to-face and online instruction had better outcomes than a course delivered with only one of the delivery modes. (Helms, 2014)

Since HyFlex affords both types of instruction via flexible attendance, the HyFlex approach should enable higher student retention and completion than single delivery mode classes. With HyFlex design, students can attend as they need or prefer without penalty for missing an in-person class. If a student is falling behind or wants in-person support, they may come to class in person. If they need to be away or are comfortable with the concepts that week, they may elect to complete work online.

Another way the team expected to see the impact of HyFlex delivery, is increased student enrollment over time. Often, online classes fill up first leaving students with only F2F and hybrid options. The more HyFlex offerings we have, the more access to the online mode we can provide to students needing flexibility, which should lead to a greater number of students enrolling overall. Ideally, we can cross-list or pair face-to-face and online classes in the Learning Management System (LMS), Canvas as appropriate to provide more participation flexibility to students.

College Priorities Shape Faculty Support

By 2018, the focus on course design and delivery shifted from HyFlex course delivery to incorporating Open Educational Resources (OER) and other affordable learning initiatives. Helping faculty create, adapt, or adopt OER exposed not only a College support need, but a System-wide support need. There are not enough instructional designers at institutions to help faculty create OER courses. As a result, with LCTCS funding, a Fundamentals of Instructional Design course was created and taught to LCTCS faculty and staff during the 2018-2019 academic year. Within the course, HyFlex was promoted as a multimodal course design model. We refer to it as multimodal because we design at one time for all delivery modes and deploy (hide/show) the course content as needed or desired. We know that reasons for students not completing courses are primarily external in nature, our principal objective for adopting HyFlex was to permit students the flexibility of when and where to attend class; online or in-person without fear of an academic penalty.

Planning and Redesigning for HyFlex Delivery

The Delgado team met during the Fall semester of 2014 to agree on our concept of HyFlex and how to implement it at our institution. During the initial meetings, the focus was on discussing the design and teaching principles, planning templates, and reviewing examples of HyFlex implementations at other institutions. A community of practice was formed that included three business faculty from Delgado Community College's West Bank Campus. The faculty were tasked with drafting new course syllabi, activities, and assessments. The instructional designers modified available HyFlex templates and assisted the faculty with course material development; for example, creating similar activities and assessments in an alternate delivery mode. One of the early challenges was how to use the HyFlex model for a course that primarily uses third-party publisher resources. Another challenge was more significant. At the same time, during the Fall 2014 semester, the institution was moving from being a Blackboard LMS institution to one that uses Canvas by Instructure. Initially, creating two different learning objects that satisfy one gradebook item was difficult in Blackboard. Mastery Paths, a Canvas feature now available, manages choice and remediation graded activities.

In early 2015, we also submitted a proposal for grant funding from the Louisiana Board of Regents to pilot HyFlex at Delgado. This grant provided compensation for the faculty and course designers. In addition, it paid for technology training, course authoring software, and a supplemental library of PowerPoint themes, graphics, and sounds. During the initial discussions with the faculty, we explained what HyFlex is conceptually. We agreed on the common definitions:

- **Face-to-Face (F2F)** learning experiences are designed around a physical environment. Learning is conducted in the same space, at the same time. There is little to no flexibility in regard to participation. This is compared with online as the *brick* (and mortar) environment.
- **Online at a Distance** learning experiences are designed around virtual participation. Both time and place (space) may differ. The class may require different time, different place or same time, different place attendance. It used to be referred to as *click* when compared to F2F. There is potentially a high level of participation flexibility.
- **Hybrid** learning environments range from partially online to almost all online depending on how an institution defines the hybrid classroom. Within this *brick* and *click* environment is the HyFlex model.
- **HyFlex** provides students the opportunity to attend fully online, fully face-to-face, or somewhere on the spectrum between the two environments depending on personal choice or need. HyFlex is a version of the hybrid model with flexible participation. Asynchronous attendance is participating at a different time while synchronous is participating at the same time.

Similar to the approaches found in our research, we decided to designate the course in the class schedule as a hybrid-delivered course and explain to the enrolled students the course participation option on the first day of class. In addition, we agreed that students could change their attendance preference weekly (topic-based week). The single course syllabus and course schedule would contain information for all modality participation options. At a glance, students would know weekly expectations and course work for either online (in-lieu of) participation or in-person participation. Providing the weekly work options by participation mode provided the course aspect of choice; students could personalize their attendance based on a preference for one type of participation activity over another. As stated earlier, HyFlex became a student-centered option to balance work and life (supporting student success) and no longer just a solution to physical space challenges.

Implementation

The faculty involved in the HyFlex pilot were asked to think about the vision for their course, the merits of each delivery mode, and how students benefit most from each learning environment. We agreed that some activities may be adapted for both environments. An excerpt of delivery mode benefits follows in Table 2.

Table 2

Learning Environment Benefits by Delivery Mode

Face-to-Face	Online

- Establishing social presence and support
- Nonverbal communication (affect and body language is observable)
- Explaining assignments (access to instructor)
- Negotiating expectations and responsibilities
- Diagnosing students' conceptual problems and providing immediate feedback
- Brainstorming
- Role play
- Student demonstration of psycho-motor skills
- Sustaining group cohesion, collaboration, and support
- Reflective, on-task discourse
- Broader participation in discussions
- More time to think before responding
- Critical analysis
- Flexibility
- Self-paced learning and practiceSelf-assessment quizzes with immediate feedback
- Near real-time, automatic grading of multiple choice, T/F, fill-in-the-blank tests

Our goal was to make activities and assessments for each week similar regardless of the delivery mode. Webcams, microphones, and software were provided to the faculty piloting HyFlex. Software such as Screencast-o-matic and Big Blue Button for recorded lecture were provided for faculty to easily narrate lectures. In 2016 we began to add touchscreens to the classroom lecterns to facilitate live annotation of presentations. Basic and advanced Canvas LMS training was provided to faculty. In addition, a self-paced course about HyFlex course design was created. Figure 1 shows an index of content in the introductory module in the HyFlex course design course. Other course information included HyFlex teaching best practices, HyFlex course and management best practices. The faculty HyFlex checklist was suggested but not completed. Tips for faculty were created and listed later in this chapter. This course was not well-attended by faculty and is now under revision.

Figure 1

Introductory Module From HyFlex Professional Development Course

The following video provides an Introduction to HyFlex presentation from 2015.
(YouTube: https://youtu.be/Bu4aVBxf760) Figure 2 is an example of the partial notes handout to accompany the introductory video.

[Watch on YouTube](#)

Figure 2

Partial Notes Handout for HyFlex Introductory Video

BENEFITS OF HYFLEX

- The model presents _____ through course content, which may work well for courses where students arrive with _____ levels of expertise or background in the subject matter
- Courses built on the HyFlex model help to break down the boundary between the virtual classroom and the physical one
- Provides students with options to meet the _____ of various learning needs and disabilities
- Flexibility in scheduling will make courses _____ to all kinds of learners
- _____ problems arising from having to cancel class due to weather and other issues

_____
_____
_____
_____
_____
_____
_____

WHAT TECHNOLOGY IS NEEDED?

- Online technology is primarily used to provide the students with flexibility in their choice of educational experience, and to communicate with the faculty member inside and outside of office hours.
- Delgado Community College will use _____ Active Learning Platform during the Fall 2015 and Spring 2016 semesters to create a classroom environment accessible across the delivery and participation modes (Fully F2F to fully online).

_____
_____
_____
_____
_____
_____
_____

The instructional designers and faculty's emphasis was on creating online equivalent activities and assessments for transitioning hybrid courses to HyFlex. The lead instructional designer for the HyFlex pilot created a Canvas course for posting the before and after course artifacts and discussion boards to discuss the process and problems, shown in Figure 3.

Figure 3

Sample Content From Canvas HyFlex Community Course

Oct 29, 2015	Individual Meetings: If you have not sent me the information to review, please post it in the HyFlex Weekly Documents Module. 10am - Thomas 11am - DeLarge 12pm - McLean Discussion Board to Post Materials so everyone can review and share.
Oct 22, 2015	HyFlex Meeting - PreWork (please click on link to see the detail announcement)
Oct 8, 2015	Please view the Lynda.com Adult Learner course. You will receive email information about the course along with a viewing guide 📄. Please refer to an email you will receive about accessing Lynda.com courses. Your Sample Session Documents are posted with comments in the HyFlex Weekly Documents Module.
Oct 1, 2015	Please take some time to review the HyFlex Overview File. 📄 This will help at the meeting to determine fixed terminology, and potential assignment scenarios. A timeline will also be discussed at the meeting.
Sept 15, 2015	Please take some time to review the HyFlex video, HyFlex interactive video or the HyFlex handout before the meeting on Thursday at 9:30 in WB1-108.

HyFlex implementation varied due to the current course design and faculty teaching preference. For example, the computer application course was designed as a lab and focused on concrete skills. Students used guides, videos, and checklists, instead of higher-order thinking or problem-solving emphasized in many other business courses. Third-party materials were used for most of the coursework. In the management course, student learning was based on real-world experiences and scenarios. This allowed for more student exploration and content choice. The third-party publisher materials were supplemental. The HyFlex version of the management course used LMS tools, videos, scavenger hunts, and similar instructor-created and curated activities for both the online and in-class sessions. These materials were personalized, creative, and relevant. The process of creating materials for HyFlex delivery options improved the engagement aspect of the course materials for all course sections, not just those delivered as HyFlex.

An initial HyFlex course lesson planning template was modified by an instructional designer (refer to Figure 4) from various templates found on the web, including one by Dr. Brian Beatty.

Figure 4

Early Version of HyFlex Lesson Planning Document

Allows the instructor to plan and develop the material needed to design and implement a module.

Learning Goal(s)/Objective(s)	
Chapter or Tools to support or guide the LOs	
What the student will know after completing the learning goals	
How the student will demonstrate knowledge/understanding of learning goals	

PRE-WORK (BEFORE CLASS)

Content Description	
Activity Intended for:	☐ F2f ☐ Online ☐ Both
Resources Needed	
Media/Technology Needed	
Special Requirements	

Preparing for Weekly Activity Regardless of Mode

Instructions for all students	

In Class Activity

Learning Objective	
Activity Intended for:	☐ F2f ☐ Online ☐ Both
Resources Needed	
Media/Technology Needed	
Activity description	
Interactivity	What type of group work or interactions will be required or needed/expected for this LO Activity to completed

Out of Class Activity

Learning Objective	
Activity Intended for:	☐ F2f ☐ Online ☐ Both
Resources Needed	

Media/Technology Needed	
Technology Support	List any support links and numbers, common issues to be aware
Activity description	
Interactivity	

HOMEWORK

Activity Intended for:	☐ F2f ☐ Online ☐ Both
Resources Needed	
Media/Technology Needed	
Technology Support	List any support links and numbers, common issues to be aware
Activity description	

QUESTIONS/ISSUES

The faculty ultimately created their own template. Figure 5 is an example of a completed template.

Figure 5

Example of HyFlex Lesson Planning Template

In-Class Exercise	Out-of Class Exercise
Flower Drawing Exercise	**Assignment:** TBD
• Ask class to draw a picture of a flower on paper	Option: create assignment unrelated to drawing exercise
• Some/all place flower on white/chalkboard	Create a scavenger hunt assignment. Students collect pictures based off of a key word. Once uploaded, they compare their pictures to your picture. You choose a picture that you know will not be found/used.
• Show picture instructor expected	
• Why don't student drawings match instructor expectations?	
• Apply to Communication Process (slides 3-9)	
o Encode (sender)	Option: utilize LearnSmart objective specific
o Transmit to receivers	
o Decode (receiver)	
o Feedback (drawings)	Option: utilize Video Exercise above
o Noise	Have students find movie clips about miscommunication and post them in a DB. Have a few prompts to help them explain why they believe this is a good example. Because there is not a dynamic class discussion occurring when students are viewing the Presentations, you can have certain static images and ask the students to describe what they see.
o Communication medium options	
Powerful Formal Presentations – lecture and discussion (slides 12-14)	
Listening Skills – lecture and discussion (slides 15-17)	Then play a movie clip that has the image in it. Ask if their perception changed once they knew the backstory or understood the communication.
Direction of Communication – lecture and discussion (slides 18-22)	**Assignment/Resource:** TBD; voice-over slides with fill-in-the blank questions
	Assignment/Resource: TBD; voice-over slides with fill-in-the blank questions
	Assignment/Resource: TBD; voice-over slides with fill-in-the blank questions

Our methodology was to carve out as much time as we could for the content creation and curation activities, for example:

- Develop online lessons and assignments
- Produce media (e.g., production video, graphics, Captivate or Screen-cast-o-matic or Big Blue Button)
- Acquire course content that from textbooks, articles, images, and videos

Next the instructors revised the course syllabi to include:

- The organization and rationale of the course design (HyFlex)
- Expectations regarding student responsibility for learning
- List of tasks with due dates by participation option (Make it very clear which tasks are to be done in class and which are to be done outside of class and how the tasks are related)
- Time management tips
- Resources for technology support (technology and quality of audio are typical student pain points)

Faculty communicated the course design to students in various formats as seen in Figures 5, 6 and 7. Faculty laid out student learning outcomes, the activities to be completed, and the activities to do before class and after class. For activities to do during class, there was an online equivalent clearly marked. As stated earlier, often, it is not course content that prevents a student from being successful. External factors create barriers. HyFlex course design provides a solution to students for time-management as life events occur. Figure 6 shows the planning document with student learning outcomes and class assignments delivery mode by week.

Figure 6

Representation of Chapter Assignments With Clearly Identified In-Lieu of Class Assignments by Week

Week # Date	Unit/Topic and Learning Outcome *By the end of this week, you will know or be able to…*	Learning Activities and Assignments *…this is how you learn how…*	Learning Assessment, Tests or Exams *…this is how you will demonstrate your knowledge and this is how much it will impact your grade.*
Week 13 4/11-4/17 (Mon-Sun)	Chapter 13 – Communicating • **Describe the communication process and various kinds of communication in organizations. (CO11)** • Discuss important advantages of two-way communication. • Identify communication problems to avoid. • Describe when and how to use the various communication channels. • Give examples of ways to become a better "sender" and "receiver" of information. • Explain how to improve downward, upward, and horizontal communication. • Summarize how to work with the company grapevine. • Describe the boundaryless organization and its advantages.	• Read & Study Text • Review Chapter Learning Objectives and PPT Slides • Attend Class • Actively Engage in Class Discussion and Classroom Activities • Complete Assignments in Canvas/CONNECT **OPTIONAL:** Complete equivalent assignments in Canvas in lieu of attending class. See the Canvas chapter module for additional details. Assignments must be completed during specified timeframe and become available at time of class.	*BEFORE Class* • **Learn Smart** (10pts – DUE 4/11 BC) • **Is This Effective Communication?** (Video Case; 10pts – DUE 4/11 BC) *DURING or IN-LIEU of Class* • **In-Class** Participation (10pts IC) - or - • **Canvas** Assignments equivalent to class (10pts – DUE 4/15 LOC) *AFTER Class* • **Quiz** (10pts – DUE 4/17 AC) • **Communication at Cupcake Kingdom** (Click & Drag; 10pts – DUE 4/17 AC)

Figure 7 offers less detail. It shows the course calendar document with class assignments and delivery modes by week (chapter).

Figure 7

Representation of Chapter Assignments With Clearly Identified In-Lieu (Online) of Class Assignments by Chapter

Part 4 - LEADING (Chapters 10-13)

Chapter 10	• Before Class (due 3/21) • Optional In Lieu of Class (available 3/21-3/28) • After Class (due 3/28 - MON due to Spring Holiday)
Chapter 11	• Before Class (due 3/28) • Optional In Lieu of Class (available 3/28-4/1) • After Class (due 4/3)
Chapter 12	• Before Class (due 4/4) • Optional In Lieu of Class (available 4/4-4/8) • After Class (due 4/10)
Chapter 13	• Before Class (due 4/11) • Optional In Lieu of Class (available 4/11-4/15) • After Class (due 4/17)

Faculty included a reference to the HyFlex delivery approach in the course syllabus. In addition, the faculty developed several handouts for students. The handouts explained the HyFlex participation options and the weekly participation schedule, instructions regarding the HyFlex "in-lieu of class" assignments, related points, and due dates. An example of the weekly handouts for students is provided in Figure 8.

Figure 8

Instruction for In-Lieu of (Online) Class Assignments

In-Lieu of Class (online material)

WEEK 13 (IN-LIEU OF CLASS) - CHAPTER 13

Complete the following assignments **IN LIEU OF CLASS** and in order to receive **PARTICIPATION** credit for this week.

1) Scavenger Hunt - Exercise (7 points)

- Complete the Find Assignment
- Complete the Unveiling Assignment
- View the Communication Process Video (7 minutes)
- Participate in the Discussion regarding what you observed

2) Formal Presentations (2 points)

- View the Formal Presentations Video (4 minutes)
- View the Nonverbal - What Do You See? Video (1:30 minutes)
- Complete the Nonverbal - What Do You See? Assignment

3) Direction of Communication

- View Direction of Communication Video (5 minutes)

4) Feedback (1 point)

- Complete a brief survey to provide feedback on what you learned and the In-Lieu of Class experience.

The items listed above must be completed in sequential order and are **due by 4/15 (FRI) @ 11:59pm**.

Click **NEXT** in the bottom-right corner of each page to move to the next page.

Early in the term and throughout, the faculty met with students to demonstrate how the online portion of the class works. The faculty planned to create an online HyFlex student orientation. To date, the orientation has not been created. As faculty and instructional designers collaborated in developing HyFlex courses, the following were found to be helpful HyFlex faculty tips:

HyFlex Faculty Tips:

- Introduce information in a user-friendly format employing numerous headings, lists where applicable, boxes with definitions, and graphics to make it easier for students to remember the information (consider ADA-compliance)
- Provide context by illustrating how knowledge of the subject may be useful to your life outside the class today or in the future
- Accommodate various types of learners by using illustrations, visual analogies, demonstrations, graphs, diagrams, and tables, etc.

Implementation & Sustainability Issues

During our HyFlex pilot, 2014-2015, we limited the number of faculty participating; despite knowing it would slow HyFlex adoption at the College. A well-designed HyFlex course requires deliberate curation, creation, and design. These requirements are the main reason for not scaling HyFlex adoption at the College more quickly. There are competing priorities for limited resources and the College has no full-time instructional designers. We discovered that brainstorming for ideas about activities with faculty took time. In addition, we were limited by who was available to assist faculty with adding the engaging, equivalent learning, practice, and assessment content. Creating the materials from scratch is time-consuming. In fact, developing online content was the most time-consuming aspect of designing a HyFlex course since we were starting with hybrid courses. The move to HyFlex delivery required the development of the equivalent online material to replace the in-person component. In other words, the online portion of the hybrid course

already existed (publisher material, instructor created assignments, etc.) in each of our courses. However, significant time was required to replicate the in-class experience in an online format.

It also takes additional time to test and revise, as needed, the new activities. As stated earlier in the chapter, when we piloted HyFlex we had just transitioned from being a Blackboard LMS institution to a Canvas by Instructure institution. The adoption of the Canvas LMS and use of the Mastery Paths feature, provided an easier way to automatically grade multiple options for assignments

During Spring 2019, two faculty members, one who teaches history and the other English, started to plan implementation of HyFlex in their Summer 2019 courses. This is the first extension beyond the business faculty. The two instructors presented a HyFlex session during the 2019 Delgado Summer Institute. They shared that they experience difficulty in finding classrooms with working podiums (many had audio issues or camera issues). Although the College has webcams in over 100 classrooms, there is still some work needed to add similar technology to more College classrooms on all College sites. In addition, we need to improve how we communicate to faculty what resources are available to them and how to use the resources. The College has two hi-tech, multipurpose classrooms setup specifically to stream lectures to two or more different locations at the same time. The multipurpose classroom at the main campus has two microphone arrays and a high-resolution robotic camera that tracks the lecturer. The goal is to provide one hi-tech classroom per campus or site for live streaming and lecture recording for on-demand viewing or reviewing. The College provides three applications for recording lectures. Hands-on trainings is offered to faculty multiple times per year.

Impact

In summary, our HyFlex program is achieving college goals as demonstrated by the information and examples provided in the previous sections and summarized below:

Goal 1: Serve more students in the same physical space.
The HyFlex program enables an increase in number of students served in current classrooms while avoiding the expense of adding new classrooms.

Goal 2: Increase student retention (by providing student participation flexibility).
The HyFlex program enables an increase in student retention and completion by providing the flexibility students require to manage their class participation and personal schedule.

Goal 3: Increase student enrollment (by appealing to students' desire to control aspects of their learning environment).
The HyFlex program enables an increase in enrollment as students have control to pursue multiple delivery options based on their individual learning needs.

Goal 4: Prepare for business continuity in the event of a natural disaster.
The HyFlex program enables business continuity by providing the flexibility required for ongoing operations and as a critical component of a disaster recovery plan in the event of a natural disaster.

During the initial implementation, three business instructors delivered four HyFlex courses:

- Business Computer Applications
- Business Communications
- Principles of Management
- Principles of Marketing

The first HyFlex modules were introduced to students near the end of the Fall 2015 term. The business computer applications course, held in a computer classroom, piloted two content modules of Microsoft ™Excel in three sections. Feedback surveys from the computer application course students reported that they were excited by the option of

choice but most preferred to attend in the F2F format. As the computer application course was transitioning from a flipped classroom, lab format, students may have preferred attending in-person in order to access to classroom computers to complete course work. One of the greatest take-aways for Dr. McClean, who piloted a marketing course and a management course, was the positive reaction from students that they were given a choice on how to manage their work/school/life commitments. In other words, the comfort in knowing they had an "in-lieu of class" option when conflicts with in-person (F2F and hybrid) class times arose was a life-saver. It is difficult, if not impossible from this small sample, to measure whether the attendance choice impacted course retention.

A management class section and one communication class section piloted HyFlex. For the business management class:

- 70% of students felt that the directions were clear
- 88% felt that the online lesson length worked
- 63% felt online was effective but would not always choose to participate online
- 67% liked having the participation option
- n = 24 all worked online the week of the survey

For the business communication course:

- 100% of students felt that the directions were clear
- 100% felt that the online lesson length worked
- 53% felt online was effective but would not always choose to participate online
- 47% felt online was so effective that they would choose to attend class again online
- 73% liked having the participation option
- n = 15 all worked online the week of the survey

During the Spring 2016 semester, the Principles of Management instructor documented 3 sections of the week 3 attendance. Please refer to Table 4.

Table 4

Attendance Week 3 by Participation Mode for Principles of Management

Section	Total Students	F2F		Online	
		#	%	#	%
A	11	9	82%	2	18%
B	19	15	79%	4	21%
C	22	16	73%	6	27%
Total	52	40	78%	12	22%

The faculty comments about their HyFlex teaching experience were:

- Definitively will use HyFlex course design in the future since it pushes us to be more creative and explore different assignment options to promote student engagement
- Overall student performance appears to be better; some students will not work regardless of creativity, engagement, and flexibility
- Takes more time than expected to develop alternate delivery content

The student comments about their HyFlex teaching experience were:

- Students say they love the option; the ability to keep up if they missed class; do not feel abandoned as they do with many online classes
- "It allowed me to accomplish my career goals by helping me take advantage of real-world opportunities I could not have if I had been attending a traditional course"
- "I am able to graduate more quickly and keep up with my full-time job"
- "I am battling combat-related illnesses…opportunity to make up work for points rather than penalized for things that are sometimes out of my control"

In the Spring 2016 business marketing and management classes, 21 (72%) of the students attended the class online instead of attending the F2F class while 8 (28%) attended class online in addition to attending the F2F class. Overall, of the 65 combined students, 30 (46%) took advantage of the online (in-lieu of) class option. When asked whether they were likely to select the in-lieu of class option again, 24 (83%) said very likely (8) or likely (16) and 5 (17%) said not likely (3) or won't (2). Some of the reasons students were less likely to select the in-lieu of options were that they learned better interacting with others [in person] and was that for the management and marketing courses, online was perceived to be more work than attending class in person. Although the goal was to create similar alternate activities, at times working online may require a larger time commitment of students.

In addition to student satisfaction with the format, the number of students capable of being enrolled in this format increases. Before implementation, course sections had a capacity, ratio between enrollment and seats available for enrollment, of 41%. This increased to 61% during the initial implementation of HyFlex with no increase in the enrollment cap before or after implementing HyFlex course design. In regard to grades earned and progressing through the academic program, we found no significant difference between the traditional model and the HyFlex model. In other words, students were successfully completing courses at the same rate in HyFlex course sections than in sections delivered in the traditional hybrid format. This is considered a win because of the increase in enrollment translating to more students than before completing courses successfully.

Conclusion

The unique mission of community and technical colleges in Louisiana provides students with the opportunity to earn credentials in a timely fashion leading to valuable employment and/or transferability, whether the credential is the high school equivalency, industry-based certification, transferable or career technical degree. Moreover, community and technical college graduates, in partnership with business and industry, must be properly equipped to meet the ever-evolving needs of tomorrow's workforce. HyFlex presents an opportunity to provide greater access (increased enrollment), promote retention, and lead to higher levels of completion in order to accomplish this unique mission. By Fall 2020, we plan to market HyFlex programs to adult learners with some college to encourage them to return to college to complete their certificates and degrees. HyFlex is an appropriate design strategy for our demographic described earlier in this chapter.

While current business courses are not *advertised* as HyFlex, lessons learned from the HyFlex experiment continue to be applied today. For example, instructors include more flexibility into course design as a result of their HyFlex experience. As time and technology enables, business studies will continue to adopt and apply the flexibility provided by the HyFlex design in support of student success. College-wide, there is renewed emphasis for HyFlex design and delivery and we plan to one day advertise programs offering flexible attendance. As mentioned earlier in the chapter, in

2019, an instructional design course for faculty was created. HyFlex is referred to in this course as multimodal design. Multimodal in this context refers to the ability to design at the same time for all delivery modes. This enables later deployment of the course as F2F, hybrid, online, or HyFlex (refer to Figure 9).

Figure 9

HyFlex Instructional Design Lesson

HyFlex Course Design (Multimodal)

To-Do Date: Mar 10 at 11:55pm

6 / 10 (60.00%)

HyFlex is a model that is a hybrid course that permits flexible participation. The design/delivery model is attributed to Dr. Brian Beatty of San Francisco State University. Institutions implement HyFlex in a variety of ways. Many student management systems do not have codes for HyFlex course delivery. Therefore, they are often coded as hybrid courses. Delgado implemented HyFlex in their Business Marketing program. It supports students when "life happens". Learners selected whether they would attend online or in-person per topic (week). The course design is efficient. You design at the same time for all delivery modes. You may then deploy the course for delivery as face-to-face, online, hybrid, or HyFlex. In other words, HyFlex is a multimodal design model. Build once and deploy for multiple delivery modes.

Resources

https://library.educause.edu/~/media/files/library/2010/11/eli7066-pdf.pdf

https://www.onlineuniversities.com/blog/2013/01/the-hyflex-learning-model-online-eds-most-customizable-idea-yet/

https://secure.onlinelearningconsortium.org/effective_practices/using-hyflex-course-and-design-process

https://regents.state.la.us/assets/docs/Presentations/2016_eLearning_Workshop/04-HyFlex_Design_(Jeanne_Samuel).pdf

https://journals.uair.arizona.edu/index.php/itet/article/view/16464/16485

https://iase-web.org/icots/10/proceedings/pdfs/ICOTS10_4H2.pdf

Canvas Accessibility Check February 3, 2019

Faculty teaching the fully online option of Delgado's Criminal Justice program expressed concern that the enrollment in face-to-face classes is dropping as they increase the number of online sections. They are considering HyFlex as a solution to an instructor shortage and student preference for online. The Criminal Justice faculty want to continue to serve students who prefer to learn in-person. Our HyFlex experience provides us with a foundational framework to use when adopting, adapting, or creating course content for OER courses. One of our next steps includes applying design learning to improve the learner experience. In addition, design learning (use of personas and experience maps) aids in identifying HyFlex implementation opportunities.

References

Carone, K. (2008). Characteristics of adult learners with implications for online learning design. *AACE Journal 16*(2), pp. 137-159.

LCTCS data LCTCS (nd). Louisiana's Community and Technical Colleges. Available online: http://lctcs.edu

Helms, J. (2014). Comparing Student Performance in Online and Face-to-face Delivery Modalities. *Journal of Asynchronous Learning Networks, 18*(1), pp. 147-160.

Jaggars, S. S., and Bailey, T. (2010). *Effectiveness of Fully Online Courses for College Students: Response to a Department of Education Meta-Analysis.* Community College Resource Center, Teachers College, Columbia University, New York, NY. Available online: https://edtechbooks.org/-TYhw

Jeanne C. Samuel

Delgado Community College

Dr. Jeanne Samuel is the Dean of Distance Learning & Instructional Technology (DLIT) for Delgado Community College, New Orleans, LA. Jeanne is very interested in game theory for learning and assessment for learning. As a lifelong techie, she has spent decades providing both technology support and teaching in the fields of technology and computing. She loves to learn new things and solve puzzles. Shortly after receiving her PhD from LSU with a focus on Education Technology, she became the Director of Faculty & Staff Development at Delgado Community College, New Orleans, LA. During that time, she researched and promoted HyFlex course design and delivery. She has been the Dean of DLIT at Delgado since Spring 2015. Her interests are in technology adoption (From "S" to "J": A theoretical technology adoption rate model (2009, IJEA, 1(2), 55-68) and motivational strategies to promote student learning and completion (2012, The effect of test design on student motivational strategies for learning and student retention).

Amanda H. Rosenzweig

Delgado Community College

Dr. Amanda Rosenzweig earned a PhD in Curriculum and Instruction from the University of New Orleans in 2012, and has a MS in Biology from the University of Louisiana at Monroe. Teaching at Delgado Community College (DCC) since 2003, she is a professor of biology and the college-wide Biology Department Chair. Her Dr. Rosenzweig has immense contribution to the online learning community. Her current roles at DCC include Canvas Learning Management System (LMS) Administrator and Canvas LMS Training Coordinator. Dr. Rosenzweig created and currently serves as the facilitator for Teach and Learn/eProfessor, a five-course series on course development and instructional design. The courses created are a repository of ideas, best practices, analyses and other information that foster student success. Her enthusiasm and drive to ensure student success and progressive change is evidenced by the honor bestowed as recipient of the Seymour Weiss Excellence in Teaching Award.

Mark McLean

Fletcher Technical Community College

Dr. Mark McLean is the Vice Chancellor for Finance and Administration at Fletcher Technical Community College in Schriever, Louisiana. Mark previously served as the Assistant Chair of Business Studies at Delgado Community College in New Orleans and led the West Bank Campus Business Studies team. Mark was awarded the LCTCS President's Inaugural Faculty Fellowship and recently earned his Ph.D. in Human Capital Development from The University of Southern Mississippi. Mark's research focus is leadership in the evolving higher education industry. His dissertation identified and prioritized essential leadership competencies for college CEOs in a metrics-driven environment. Prior to joining Delgado and Fletcher, he spent nearly 20 years in professional services with Deloitte in a variety of director level roles, both domestic and abroad. Mark earned a B.S. in Management from the University of Pittsburgh and his MBA from Loyola University of New Orleans.

René Cintrón

Louisiana's Community & Technical Colleges

Dr. René Cintrón is, first and foremost, dad of three amazing daughters. He is the Chief Education and Training Officer for Louisiana Community and Technical College System, a public, multi-institution system serving a diverse student population seeking workforce development training, academic programs of study, and the high school equivalency. The 12 independently accredited institutions collectively serve 160,000 students, transfer 15,000 students, and graduate 32,000 individuals on an annual basis. In his role, René provides statewide leadership and is directly responsible for workforce development, academic affairs, and institutional effectiveness efforts across Louisiana. He has placed focus on accelerating the student experience from pre-application to post-graduation with tools such as data exchange, short-term credentials, compressed programs, prior learning assessments, co-requisite scheduling, and other efforts that lead to students achieving their educational goals in a timely manner. René is an Air Force veteran, grew up in the U.S. island of Puerto Rico now living in Greater New Orleans, and holds a Ph.D. in Organization and Management.

This content is provided to you freely by EdTech Books.

Access it online or download it at .

New Technologies Deliver on the Promise of HyFlex

University of St. Thomas

Glori Hinck & Lisa Burke

The University of St. Thomas offered its first fully HyFlex course during the summer of 2017, in an initiative called "Take St. Thomas Home for the Summer." Business school leaders were interested in supporting instructional innovation and new course delivery models, and a finance instructor agreed to try the HyFlex model in his undergraduate course.

Working in conjunction with staff from STELAR (the "St. Thomas eLearning and Research" center), the instructor developed an undergraduate finance course that supported traditional classroom-based student participation as well as equivalent activities for online participants, using new online technologies (including Canvas, Panopto, Proctorio, and Zoom) and a new active learning classroom space with multiple displays and a smartboard. Student response to this offering was positive with an additional section added each term to accommodate students on the waitlist.

Due to this successful initiative, the university is expanding HyFlex course delivery and variations of this model to additional courses and programs. This chapter will describe our journey from our first introduction to the model at an online learning conference through current adoption status.

History of Online Learning at the University of St.Thomas

The University of St. Thomas, Minnesota's largest private university, has been a very traditional liberal arts institution for most of its 135 years, with campuses in St. Paul, Minneapolis and Rome. While blended programs were offered at the graduate level starting in the 1990s, it wasn't until 2012 that the first fully online program, an M.A. in Special Education, was developed in partnership with an online program management company, Bisk.

In 2016 the St. Thomas eLearning and Research group (STELAR) was created in order to provide internal instructional design and online course design and development services as we phased out our relationship with the OPM. In addition to migrating those special education courses into the university's instructional technology environment, during the summer of 2017, STELAR staff worked with faculty to develop a portfolio of online courses in an initiative called *Take St. Thomas home for the Summer*. Through this initiative, we developed and offered FINC 321 in the HyFlex model of course delivery as a proof of concept.

Faculty Development for Online and HyFlex Learning

The university's Center for Faculty Development and STELAR work in partnership to support faculty, with STELAR providing the bulk of faculty training on topics related to online teaching and learning. Initially, faculty training was offered through ad hoc on-campus instructional designer consultations, an annual multi-day on-campus workshop for

blended teaching, and through faculty registrations in online Quality Matters and Online Learning Consortium workshops. As STELAR expanded its training offerings, three 5-week online certificate courses were developed by instructional design staff in order to better assure that full time and adjunct faculty had the knowledge needed to design and facilitate online courses, with some training bootcamps for specific departments and programs to prepare them for teaching blended, online and HyFlex courses.

This chapter describes our journey from our initial offering of a HyFlex course as part of the *Take St. Thomas Home for the Summer* initiative to our current expansion of the HyFlex model into the School of Education.

Why?

Our development of HyFlex courses started in the Opus College of Business, where the academic leadership team wanted to better use technology to support instructional innovation and new attendance models. At the 2016 OLC Innovate conference, several attendees from the business college attended a panel, "Hybrid Flexible Course and Program Design: Models for Student-Directed Hybrids," and liked how HyFlex maximized student choice. Discussions ensued about offering HyFlex graduate courses in a new business analytics program. One instructor in the program taught his courses using the classroom and web-conferencing components of this model as a proof of concept during the 2016-17 academic year and found that students liked the ability to choose their attendance modality from week-to-week. He was surprised to find that the group of students who attended online changed from week to week. He also reported that one student -- who was typically in class – experienced a minor car accident on her way to class one evening, and was able to attend class remotely online from the crash site while waiting for the police.

There was spirited discussion around converting the entire M.S. in Business Analytics program to HyFlex, but because enrollment in the on-campus courses was robust, and because course content was changing dramatically from term to term, few of the faculty were interested in adopting the HyFlex model as there was concern about the asynchronous online material requiring significant rework with each new term.

While enrollment in those courses was growing, student enrollment in on-campus undergraduate summer school courses was stagnant, and undergrads were often taking summer courses online elsewhere and then transferring the credits to St. Thomas. As part of the effort to increase summer course enrollment (and revenue), business faculty were given the option of offering online or HyFlex courses in summer 2017. The premise behind developing a good HyFlex course allows us to create a single course that accommodates different learning preferences, decreases the need for multiple sections offered in a single modality, and meets the needs of both undergraduate and graduate students who have work or other commitments that might prevent them from attending class on campus. That said, it is also seen as a lot of work and we have had few faculty who have been willing to do that work to date.

What?

Our approach is still evolving and is fragmented at times as we work to apply the model to various courses and programs. While STELAR has shared information about HyFlex in various university communications and conference presentations, no formal goals or directives have been developed by the Office of the Provost other than promoting this as an instructional innovation through funding faculty course development grants.

In the 2018-19 academic year, a grant was offered for the "development of a co-located or hyflex course that allows students to participate on-campus or remotely within the same course section on a session-to-session basis." Further explanation of the model suggested that "the course may be created in one of two formats: 1) the Co-Location model, which allows students to choose from two participation methods: regularly scheduled in-person sessions or interaction via Zoom webconferencing, or 2) the HyFlex model, which provides students the choice of three participation methods: in-person, through Zoom webconferencing, or asynchronously through Canvas." That seems to have gained some new faculty interest, and we have several new programs engaged in offering either co-located or HyFlex courses in the 2019-20 academic year.

For the purposes of this chapter, we will focus on our first official HyFlex course, FINC 321, as it served as a proof of concept both for the use of online and classroom technologies, and will describe how this is informing subsequent courses and programs.

FINC 321 Financial Management

Our first official HyFlex offering involved a core summer undergraduate business course in which students could choose to participate in one of three tracks for each of the bi-weekly class periods:

- *Face-to-face* in an active learning classroom
- *Synchronously* online through web-conferencing with Zoom Rooms
- *Asynchronously* online using Canvas and viewing classroom recordings

Initial HyFlex Technologies

The course relied heavily on cloud-based and other technologies including:

- The Canvas learning management system, together with Proctorio for online test proctoring and VoiceThread for media-rich online asynchronous discussions
- A classroom computer and cameras optimized for live Zoom broadcasting, and Panopto recording for playback later
- A KappIQ Smartboard to support and capture whiteboard activities
- SHARP SVSI video distribution and the Axis streaming assistant
- An iPad to control the Zoom Room software
- A Catch Box throwable microphone and instructor lavalier mic.

One to two students were paid to assist during each class period, helping with set-up, monitoring the Zoom chat and reminding students to use the Catch Box microphone when speaking. They also controlled the wall-mounted classroom camera with a joystick to improve the quality of the video capture when the instructor moved around. One of these student assistants was enrolled in the course and their salaries were paid out of the business school's workstudy budget.

The video and images below help to illustrate how these technologies worked together.

Figure 1

Explanation of HyFlex Technologies: Video

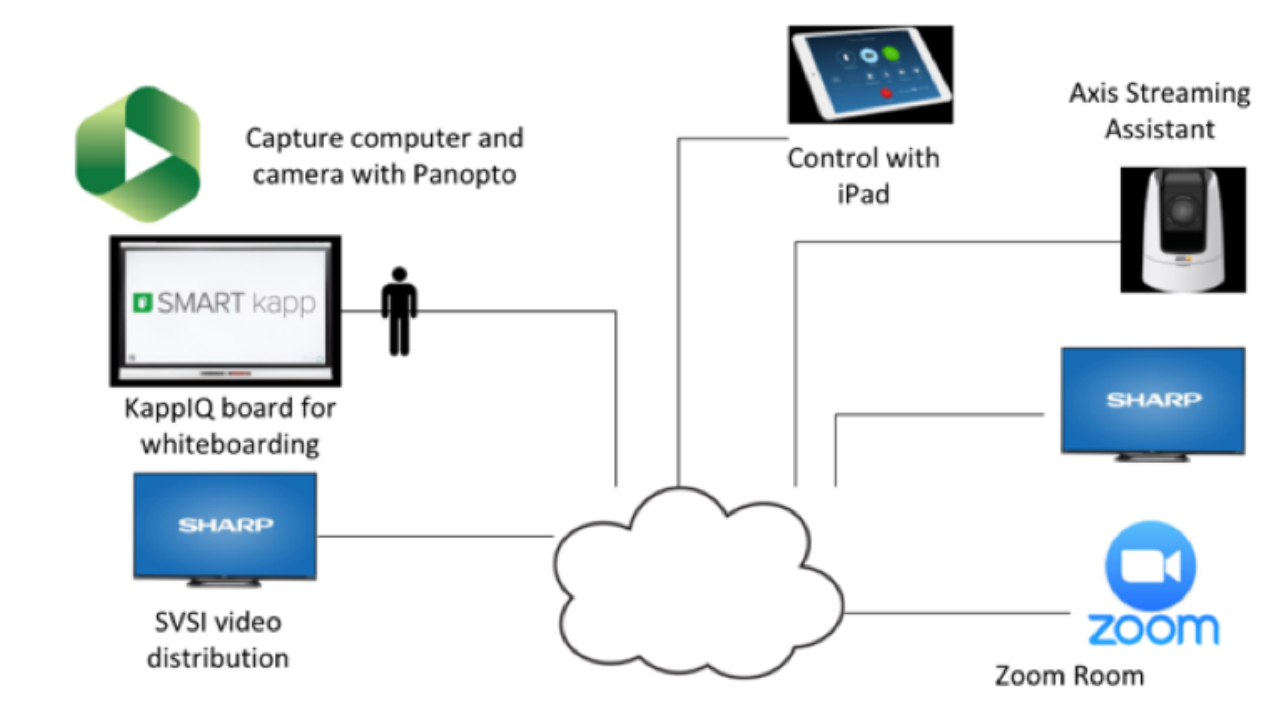[Watch on YouTube](#)

Figure 2

Classroom Technologies

Figure 3

Instructor Technologies

Technology	Purpose
SmartBoard	Display PowerPoints and allow live annotation
Zoom	Highly interactive virtual conferencing tool
Panopto	High quality video recording of class lectures
VoiceThread	Content and video creation / sharing tool
Proctorio	Online proctoring service ensuring exam integrity
Canvas LMS	Organizes and helps ease use of technology

Figure 4

The HyFlex FINC 321 Active Learning Classroom

The technology we use to support HyFlex delivery continues to evolve. Technologies used with each course are evaluated at least yearly and on an individual course-by-course basis. Key technologies for most courses are a reliable web-conferencing system, SmartBoard, and high quality camera and audio.

HyFlex FINC 321 Pedagogy

The on-campus and Zoom (synchronous online) students engage with each other and the instructor in the classroom and their interactions are captured in a Panopto video recording for viewing by the asynchronous students. These videos, along with additional course materials, are available to all students on Canvas. Students in all tracks complete the same readings, assignments and exams, with online students taking exams on the same day as in-class students through Proctorio. Daily participation points are assigned based on active classroom participation for on-campus and

Zoom students and in the first year, asynchronous students submitted a written response to a discussion board prompt.

Pedagogical Continuous Quality Improvement

Several pedagogical changes were made during the second FINC 321 offering. VoiceThread is a supported tool on our campus. Rather than participating in a text-based discussion board for participation points, asynchronous students were required to create a short VoiceThread video presentation in response to instructor prompts.

This change was made to more closely model the classroom pedagogy which required students to verbally support their positions in response to instructor prompts and questions. Per the instructor, this change resulted in a "dramatic improvement in engaging online students". Changes made in classroom delivery included a deliberate effort to increase engagement of synchronous students in the lecture and discussion through better integration of Zoom. The instructor also worked to improve the quality of the videos through increased use of the Smartboard annotation tool to make recordings more dynamic allowing the students to better see and hear how an analysis was built. In addition, he tried to improve camera angles so that the video viewing experience of the asynchronous student was closer to a classroom experience. However, this was not as effective as hoped. In part, because the student assistants often did not change the angles based on the classroom activities. In fact, in the third year, the camera view will be static and positioned to directly face the instructor rather than mobile and following the classroom 'action'. Students are required to view the videos, but this is not tracked or documented.

Figure 5

Learner Choice

Learner Choice

Live in Classroom	Live Remotely via Zoom	Asynchronously Online
Participate in live lecture	**Participate** in live lecture	**View** recorded lecture
Participation points through **Class Discussion**	Participation points through **Class Discussion**	Participation points through **VoiceThread Discussion**
Same Homework	Same Homework	Same Homework
In-class Exams	**Online Proctored Exams** Same Day	**Online Proctored Exams** Same Day

Figure 6

Canvas Modules

Canvas Modules

Class 1 Overview

Overview

In this module, we will review the major learning objectives of Finance 321 and the unique HyFlex format of this class. We will also start the initial understanding of "Maximizing Shareholder Wealth" and the evolution of American business.

Objectives

Students will be able to:

- Understand the syllabus and Hyflex class model
- Articulate the primary goal of business
- Identify ways that business has MSW throughout history

Tasks:

SYNCHRONOUS ONLINE STUDENTS

Read
- Textbook Chapter 1
- Class Session 1 Agenda

Watch
- Participate in class lecture via Zoom

Do
- Actively participate in class discussion via Zoom
- Complete Assignment #1 and submit via Canvas

ASYNCHRONOUS ONLINE STUDENTS

Read
- Textbook Chapter 1
- Class Session 1 Agenda

Watch
- View video of class lecture

Do
- Participate in online Discussion Board #1 via Canvas
- Complete Assignment #1 and submit via Canvas

ON-CAMPUS STUDENTS

Read
- Textbook Chapter 1
- Class Session 1 Agenda

Watch
- Participate in class lecture

Do
- Actively participate in class discussion
- Complete Assignment #1 and submit via Canvas

How?

Business Leads the Way

The initial discussions in support of HyFlex adoption involved the business college and appeal of HyFlex as a way to maximize course enrollments. Faculty aptitude, interest, and skill set figured heavily in choosing an instructor for our first pilot of a true HyFlex course. It is important to note the short timeline (~3 months) between spring planning and summer delivery had a significant impact on initial HyFlex adoption.

The business college leadership supported and encouraged HyFlex delivery and paid the faculty grant awards while ITS/STELAR, working closely with the instructor, managed the project including classroom equipment, AV and classroom support, and instructional design services. A partnership with university leadership and the Registrar was also essential. Information about HyFlex as a course delivery option has been communicated through the STELAR website including blog posts such as Interest Building Around the HyFlex Model of Course Delivery.

Implementation Issues

Structure of the Model

The most significant implementation issue was simply determining how our HyFlex model would be structured, and what resources were needed to make it successful. In our first HyFlex offering, the time from the initial decision to delivery of the course was less than 3 months, putting a heavy workload on faculty and staff alike. The heavy faculty workload was addressed by awarding faculty course development grants, limiting enrollment in sections, and paying faculty to facilitate any additional sections.

Technology

Overall there have been few significant technology issues. However, we did have equipment failure at a key point (last day of class) and not all students liked using the catch box for audio. We are exploring other audio options but have not

yet identified an acceptable replacement.

Communication with Registrar

There were initial challenges with communicating this model to the registrar and HyFlex classes were not correctly represented in the university course catalog.   The registrar's office has since created an official new course type category called *HyFlex*in our student information system that more accurately describes the student experience:

"Instruction is delivered concurrently via in-person class meetings, synchronous online class meetings, and asynchronous methods. Learners choose how they participate and engage each week."

However, there is a delay between the time a course type is created and when it can be utilized and during the summer term 2019 the course description still included two sections, one online and one in-class and only the online section accurately described the model. Interestingly, student enrollment in the online section was 42 students with a waitlist of 10 while the face-to-face section had only 9 students with no waitlist.

Equivalency

In FINC 321 we realize we need to better address equivalency and improve student-student interaction in the asynchronous online mode of delivery. As described previously, per the instructor, switching to VoiceThread helped to address this and we will continue to evaluate and make improvements.

Data Collection

We would like to collect more data related to comparison of student outcomes but the required IRB process for online informed consents has so far prevented collecting meaningful outcomes data. Moving forward, we will either streamline our online informed consent process through the use of online tools or will collect the data for institutional use only.

Impact

Increased Enrollment

Our initial goal was simply to successfully deliver a HyFlex course for the first time with approximately equivalent student learning outcomes while increasing summer term enrollment. This goal was met and enrollments greatly exceeded expectations.   Enrollment in our first HyFlex finance course more than doubled the previous typical summer enrollment from 16 students to 39. During the second summer, the enrollment cap was increased with 48 students enrolled. In year 3 there are 51 students enrolled with a wait list of 10 and the instructor reports multiple additional emails from students requesting entry into the course. While typical enrollment caps are 40 students per section, our HyFlex sections are capped at 25 with instructors receiving course credit for additional sections.

Student Satisfaction with HyFlex FINC 321

Anecdotally per instructor, course evaluations and student outcomes were approximately the same as previous summer traditional offerings for the same course. In the video below, Instructor Jim Shovein discusses student satisfaction.

Figure 7

Student Satisfaction
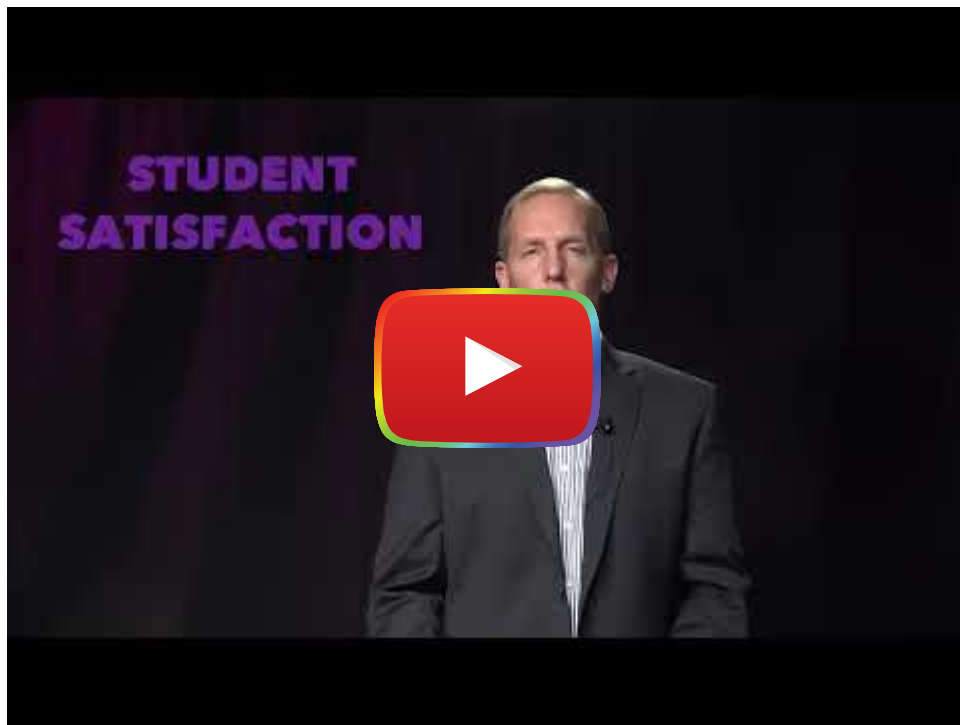
[Watch on YouTube](#)

2018 FINC 321 Student Survey Results

19/48 (40%) Response Rate

The majority of students reported participating asynchronously online and this was also reported as the preferred mode of participation.
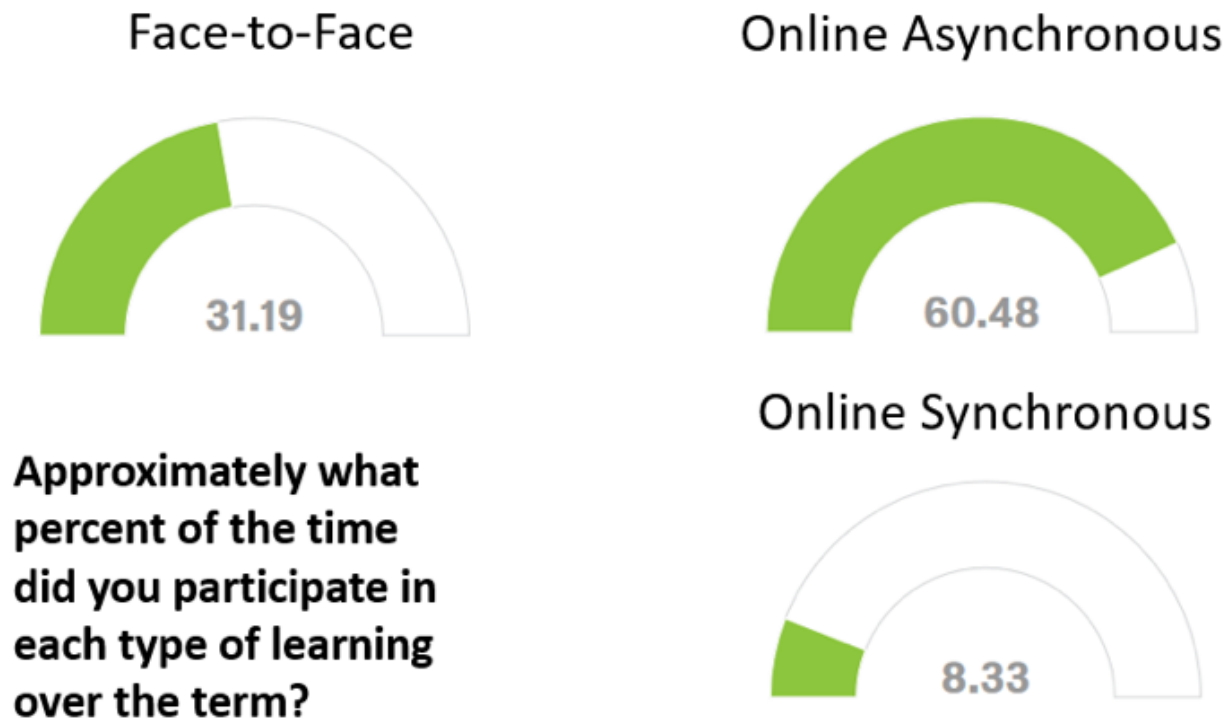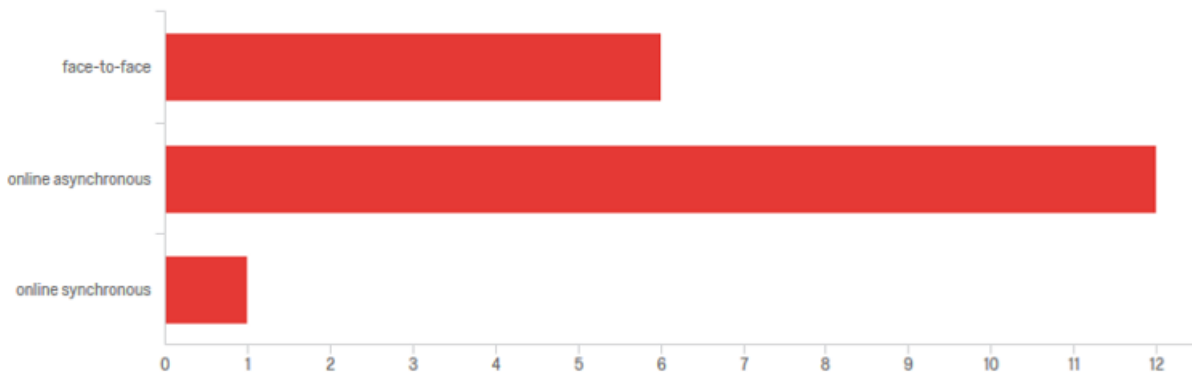
Figure 8

Mode of Participation

Face-to-Face

31.19

Online Asynchronous

60.48

Online Synchronous

8.33

Approximately what percent of the time did you participate in each type of learning over the term?

Figure 9

Preferred Mode of Participation

What was your preferred mode of participation?

Both online and face-to-face instruction were considered useful and students felt they learned as much or more than expected in the class.

Figure 10

Usefulness of Online and Face-to-Face Instruction

#	Field	Strongly Disagree		Disagree		Somewhat Disagree		Somewhat Agree		Agree		Strongly Agree		Did not participate	
1	The face-to-face instruction was useful	0.00%	0	0.00%	0	0.00%	0	0.00%	0	10.53%	2	42.11%	8	47.37%	9
2	The online instruction was useful	0.00%	0	0.00%	0	0.00%	0	5.26%	1	47.37%	9	47.37%	9	0.00%	0
3	I feel that I learned as much or more than I expected to learn in this class	0.00%	0	0.00%	0	0.00%	0	10.53%	2	26.32%	5	63.16%	12	0.00%	0

Consistent with the instructor report, technical glitches were few with more than half of the students reporting no glitches and only one student reporting many.

Figure 11

Number of Technical Glitches

Q20 - Did you experience any technical glitches?

#	Field	Choice Count	
1	Many	5.26%	1
2	A few	42.11%	8
3	None	52.63%	10
			19

Expansion of HyFlex to Other Programs

The success of the HyFlex model in our pilot has garnered the attention of other programs and we are currently expanding hyflex delivery as well as a variation termed 'co-location' into the college of education.

M.A. in Educational Leadership

The Master's and Doctoral programs in Educational Leadership have recently adopted the co-location model which combines F2F and Zoom options with a robust Canvas site rather than a fully asynchronous online option, as is true for HyFlex courses.

M.A. in Special Education (SPED)

In contrast to educational leadership, the SPED program is adopting the full HyFlex version of course delivery as a way to integrate online and face-to-face course sections, increase enrollments, and boost revenues. Previously, the program offered separate online and on-campus sections and found it difficult to maintain adequate enrollments in multiple

sections. Hyflex offers them the opportunity to combine sections and decrease teaching load or adjunct contracts, while still honoring student learning preferences. The graduate SPED program is taking a very similar approach to FINC 321, but rather than adapting an existing F2F course, this program is starting with a fully online course and reworking it to include the F2F and Zoom options. The combined sections share the same Canvas course site, and one evening per week students choose to come to campus for class or they can attend online via Zoom and interact with the class remotely. If they aren't available to attend during class time, they can watch the recorded lectures and provide a summary of what they learned. Similar to FINC 321, students choose their attendance option each class period.

Increasing student enrollment is a goal shared by both faculty and administrators. However, to-date the CoB has focused on offering traditional online courses as a way to increase enrollments rather than expanding HyFlex offerings while the SPED program has fully embraced the model and will be offering the entire program as HyFlex starting Fall 2020.

University Recognition

Our adoption of HyFlex courses and technologies allowed us to help market the University of St. Thomas through multiple local and international conference presentations as well as an invitation to be interviewed for an Inside Higher Ed article (Lieberman, 2018).

Conclusion

Instructor Quote: *"The critical thing to remember is that the technology is just a more effective and efficient means to our same desired end - a great educational experience, not in any way a replacement for engaged faculty with a well thought-out pedagogy"*

Our HyFlex experience has been successful above and beyond our initial expectations. With the right support, a dedicated and talented instructor can deliver a course that meets students where they are and how they learn. The HyFlex FINC 321 pilot served as a proof of concept that allowed us to build and adapt on this model so that it can be integrated into other courses and programs. Both interest and implementation of HyFlex and its variants are growing with our first full program converting to this model and other programs   We now have an entire program that will convert all of their courses to HyFlex and other programs that will initially use a variation of the model. We expect further growth due to student interest and initial successes.

Our greatest challenge will be finding and developing faculty to support this model across an entire curriculum or degree program. What we have found is that as more instructors become comfortable with online delivery, they have fewer concerns with implementing HyFlex. However, we need to continue to increase our online teaching talent pool and offer robust faculty training and support to adequately support this delivery model. The College of Education will likely lead the way with mentoring and peer support as co-located and HyFlex become the future norm.

Efforts are still fragmented around how HyFlex is being applied to various programs but we are working to standardize systems for HyFlex delivery across the university.

References

Lieberman, M. (2018, January 24). Introducing a new(-ish) learning mode: Blendflex/hyflex. *Inside Higher Ed.*Retrieved from https://edtechbooks.org/-pww

Glori Hinck

St. Thomas eLearning and Research Center

Dr. Glori Hinck is an Instructional Designer and Research Manager for the St. Thomas eLearning and Research Center (STELAR) at the University of St. Thomas in Minneapolis/St. Paul. In this role, she helps drive educational innovation and supports faculty in the design and delivery of online and blended courses, including HyFlex. Dr. Hinck has a wide variety of academic interests and in addition to exploring alternative online delivery models, she has conducted research and lectured on the topics of social media professionalism, quality assurance for online courses, artificial intelligence in higher education, digital accessibility, and educational video applications.

Previously, Dr. Hinck had a career in health care spanning two decades, most recently Associate Professor and Director of Educational Technology at Northwestern Health Sciences University. She earned a certificate in online teaching and an M.E.T. and Ed.D. in Educational Technology online at Boise State University. Dr. Hinck also holds a B.S. in Dietetics from UW-Stout, M.S. in Exercise Physiology from St. Cloud State University, and a D.C. from Northwestern Health Sciences University. Dr. Hinck has designed and taught face-to-face, blended and online courses for graduate and faculty development programs.

Lisa Burke

University of St. Thomas

Lisa Burke is the director of the St. Thomas E-learning and Research Group on the University of St. Thomas Minneapolis campus, working with faculty and programs in the College of Education, Leadership and Counseling, the Daugherty Family College, the Opus College of Business, and the School of Law. With over 25 years of experience as a staff member supporting higher education technologies, Lisa is excited to be leading initiatives aimed at delivering the university's degree and certificate programs in new modalities. Her particular areas of interest include Telepresence, Active Learning Classroom Design, and Online and Blended Program Development.

Lisa is a graduate of Luther College. A long tine member of EDUCAUSE, she has presented at national and local IT and online learning conferences. She enjoys running with the dog along the river, bike packing trips, independent bookstores, public radio, live music, and being in the company of smart, passionate people who are advancing the common good.

Using HyFlex in Statistics for Engineers and (Data) Scientists

University of Michigan

Jackie Bryce Miller & Melinda E. Baham

HyFlex   UMich

Note to our readers: This chapter is the work of both authors but is presented as a first-person narrative. Jack has been using the HyFlex model since 2011 and tells the story from their perspective. Melinda has been contributing to and consulting on Jack's work since it was introduced at Michigan in 2014. Since Jack is the "user" of the model, we decided to present this chapter from Jack's point of view.

HyFlex at the University of Michigan (UM) actually began at The Ohio State University (OSU), as I was formerly an instructor at OSU before joining the instructional team at UM. Both OSU and UM are large, public land-grant universities in the Midwest, and they are quite comparable in many aspects, including the growing popularity of various online/hybrid modalities and the increasing need for flexible options to meet the requirements of students trying to graduate in impacted majors that may have more students who need to take a course than there are seats available. As a discipline that serves many client departments, statistics departments need to address the needs of a diverse student body, and create more individualized options for students for whom statistics is not their primary focus. HyFlex allows students to complete their statistics course their way, using the method that works best for them on a day-to-day basis. Moreover, in addition to the universities themselves being similar, the implementation of HyFlex at OSU and UM has been similar in that, at both universities, HyFlex was first used in a large introductory statistics course (with 200-400 students per lecture and 25-30 students per recitation/lab section) and then migrated to a large upper-level probability and statistics course (with 100-200 students per lecture and no lab sections). This chapter will focus primarily on the implementation of HyFlex in Stats 412, an upper-level probability and statistics course at UM. (See Miller, Risser, & Griffiths (2013) for information about the implementation of HyFlex in introductory statistics at OSU and Miller (2016) for a discussion of HyFlex in Intro Stats at UM.)

In terms of the overall structure of the learning environment, Stats 412 is a one semester, 3-credit hour lecture course with no lab or recitation section and meets for 3 hours/week for 14 weeks. The course has a Calculus 3 pre-/co-requisite. Students in Stats 412 come from both the College of Engineering (CoE) and the College of Literature, Science, and the Arts (LSA). The vast majority of the students are undergraduates, mainly upper division, with the minority (about 10-15%) coming from various graduate programs. Of the undergraduates, about 85% are from CoE, with students from aerospace to mechanical engineering. Computer Science and Data Science majors are prevalent from both colleges. The Data Science major is relatively new at UM and expects to continue increasing in enrollment. Stats 412 is a required

course for the Data Science majors, one of two options to meet the statistics course requirement for the Computer Science majors, and is an upper-level technical elective for students majoring in engineering. One interesting aspect to having so many upper division CoE students is that many of them are completing capstone and other significant projects and looking for internships or permanent jobs during the term, which places an unusual demand on their time constraints. Additionally, interest (and enrollment) in Stats 412 among engineering majors has increased significantly in the past five years whereas department resources have remained steady—thus Stats 412 was an ideal course in which to consider adding HyFlex in order to increase enrollment capacity with the same faculty resources.

How HyFlex Appeared on My Radar

My journey with HyFlex began when OSU was planning to make its transition from quarters to semesters (semesters began with Autumn 2012). In preparation for that transition, I proposed "Semester Conversion: Too Many Students, Too Little Time" for a $10,000 Departmental Impact Grant from the OSU Office of Instructional Technology (OIT). "Too Many Students" described a potential increase from 350 students per quarter to over 500 students per semester. Finding large lecture halls on campus at times when students want (and are able) to attend class would be increasingly difficult. The proposed solution was to give students choices—students could choose between face-to-face and synchronous, live stream lecture. "Too Little Time" referred to a 20% decrease in contact time spent in small-group discussions (recitations) with graduate teaching assistants (GTAs). This cut in small-group time necessitated finding a way to make students more responsible for the material they learned in lecture. The proposed solution was to have an on-line lecture review and assessment due after every lecture and before recitation. We also recorded and published all the streamed lectures allowing all students to review the lectures, at any time and in any place.

With a limited number of large lecture halls and impending increased enrollment per lecture section, already scarce resources were going to be at even more of a premium. My thought was that allowing students to attend synchronously in person or via remote stream or asynchronously watch lecture recordings would enable more students to enroll in a course while not increasing the actual number of physical seats needed in the classroom, thus not necessitating another precious time slot to be taken from the scarce large lecture halls. I successfully used the HyFlex model at OSU for the academic years 2011-2013, ending only because of my transfer to teach at UM. Although I was not able to overenroll my lecture sections at OSU and teach more students in the same number of physical classroom seats, our research (Miller, Risser, and Griffiths 2013) indicated that we would be able to move in that direction. Unfortunately, OSU Statistics stopped using HyFlex when I left; other disciplines, including Animal Science, Mathematics, and Economics, have used and expanded on HyFlex principles after I introduced the technique to OSU during the 2011-2012 academic year.

The HyFlex Model Comes to Michigan

Although space needs are universal, the demands on space that came with a change from quarters to semesters were not present at UM. Still, after experiencing the success of HyFlex in introductory statistics at OSU, I was eager to bring the technique to UM. As such, I first introduced HyFlex in a very large (1500-1800 students per semester) introductory statistics course at UM, but found that the various HyFlex options were underutilized by students in that course. Upon further reflection, I realized that students already had a number of different attendance options in that course, and thus HyFlex was not really needed by those students. I knew the HyFlex model could be a successful model if the students have a need for it (as Brian Beatty says, "If there is no need, don't do it!"), thus I decided to introduce the model to students in Stats 412, where, to my delight, the HyFlex model has proved much more beneficial to students (Miller and Baham, 2018a, 2018b, 2018c).

As mentioned previously in this chapter, Stats 412 is taken by students primarily enrolled in both the College of Engineering (CoE) and the College of Literature, Science, and the Arts (LSA) at UM. CoE is housed on UM's North Campus, and LSA is housed on UM's Central Campus. Because Stats 412 is taught out of an LSA department, all Stats 412 sections are taught on Central Campus. The distance between the two campuses is not inconsequential—it is at

least a 30-minute walk between classes if a student needs to get between North and Central campuses, but classes only have a 10-minute break between them. Remote attendance allows students on North Campus (or elsewhere) to attend a class on Central Campus without having to worry about being late to any classes. Thus, streaming synchronously and remotely allows students to attend all their classes without missing vital information and without sacrificing the student classroom experience (e.g., access to instructor in real time, etc.).

Surprisingly, my model for HyFlex somewhat mirrors the models of others even though it developed independently. When preparing to submit the OSU grant proposal, one instructional technologist asked why I didn't just pre-record my lectures in my office. The best way to explain it is that I need at least some students to be with me in person so that I can teach—I rely on the students' questions and facial expressions to drive the pace of a class meeting and did not feel it was possible to do this while pre-recording lecture material. HyFlex was borne of my desire to offer the chance to take a statistics course without worrying about how many students could fit into a room—I wanted students to be able to attend remotely if they chose.

In Stats 412, HyFlex means that students can attend class in person or remotely while class meetings are happening. It is important that students have equivalent learning opportunities regardless of how they attend lecture. The experience of attending class in person or remotely should also be fairly seamless for students—they should be able to make their choice about attendance mode based on what is best for them on each day. Students should not have to decide when they register for class that they want to attend solely in person or solely remotely for the entire term. The flexibility of daily choice allows students to change how they attend throughout the term, whether predominantly in one mode or alternating between attendance modes.

Regardless of how many students choose each attendance modality, the in-person lecture (slides and instructor audio) is live streamed and can be accessed with reduced or standard latency via URLs provided to the students in Canvas (our LMS), depending on the technology available to the student (i.e., bandwidth) on a particular day. A backchannel is used to provide equivalent learning opportunities to students attending remotely—the backchannel lets students ask questions of the instructor and have them answered in real time even though they are not in the same physical space.

Because Stats 412 is not listed as "HyFlex" in the UM course catalog, students who may be unaware of the HyFlex design of the course learn about it during the initial class meeting and have the following information in the syllabus:

Ways to Attend Class: Stats 412 is taught using a HyFlex (hybrid-flexible) model. This means that you can choose the way you attend class to best meet your needs. You may choose how you attend on a daily basis and may attend in person or via streaming technology. Details about this HyFlex course can be found [later in the] syllabus.

The details given to the students for the Winter (known elsewhere as Spring) 2019 semester are included at the end of this chapter.

Implementation of HyFlex at Michigan

Implementation of HyFlex at UM would not be possible without the efforts of folks from the UM LSA Instructional Support Services (LSA-ISS) office. The LSA-ISS team members consistently work with me to find the best solutions for streaming lecture and for the backchannel. They also make a lecture capture (recording) of the in-person lecture just in case technology lets us down on any particular day.

Live Streaming

Since introducing HyFlex at UM, we have used several methods for live streaming lecture, beginning (2014-2015) with Adobe Acrobat (which I had used at OSU). After Adobe Acrobat, we streamed with the "active learning platform" (2015-2016) that had been developed by a colleague at UM and is now part of Echo360. For the past few years (beginning Fall 2016) we have used an Epiphan Pearl live streaming box. So far this has worked well, so we continue to use it. During the 2018-2019 academic year, students were offered two options for streaming—one at standard latency and the other

at reduced latency. There is a 30-60 second lag between real time and the stream with standard latency that is cut to 10-15 seconds with reduced latency. While it would be ideal to have no lag between real time and the stream, that is not currently possible with our technology. Students tend to use the reduced latency stream unless they are somewhere with less broadband and thus need to use the standard latency stream.

Backchannel

The backchannel allows students attending remotely to ask me questions during lecture; all backchannel technology used so far has been free of charge to students. One particular advantage of the backchannel is that, because it is available to all students, even those who are physically in the classroom can utilize it to ask questions (which may otherwise be daunting in a large lecture class). With the exception of the single year we used the active learning platform, our backchannel was run through an instructor subscription to Poll Everywhere. Poll Everywhere worked well for the most part—students could ask questions via Poll Everywhere, and I repeated them aloud and answered them during lecture (so all students hear the question and the answer).

The one element of the backchannel I felt was missing while using Poll Everywhere in the past few years was the students' ability to see and answer each other's questions. When I started using the HyFlex model at OSU, there was a static URL that I could give students so they could see the backchannel and comment amongst themselves, but that static URL unfortunately is no longer be available with Poll Everywhere. When it was available, students were great at answering each other's questions. The backchannel chat allowed by such a static URL was terrific for quick little things that did not need to be broadcast to the entire lecture. Without the ability for all students to access what has been previously asked on the backchannel, some questions may be asked multiple times or interrupt lecture material. Beginning Fall 2019, I tried a platform called YellowDig, but it does not update in real time, so, while the platform seemed promising, it did not fit the purpose. LSA-ISS staff members and I are looking into alternatives, but for now I am sticking with Poll Everywhere.

Set Clear Expectations

In addition to the stream and the backchannel, it is important that students understand what is expected of them in terms of HyFlex and with technology in general. All details are provided in the course syllabus—the HyFlex section of the syllabus explains how students access the live stream and the backchannel and gives students an overview of my expectations for them with respect to the technology used for HyFlex. .

With Technology Come Challenges

Anyone who uses technology knows that they should always have a "Plan B." When we rely on technology to stream to the majority of our students, it is difficult—if not impossible—to communicate with the remote students if there are technology issues (e.g., streaming box needs to be reset, there was a power outage in one part of campus, etc.). In my eight years using the HyFlex model, there have been only two days when everything went awry with technology and there was no way to stream class (Plan B was to record the in-person lecture and post it). When minor issues have arisen, the audio-visual technician in the lecture room has been able to troubleshoot almost anything. I have learned to be patient and calm when it comes to technology. Students have been very understanding on the rare occasion when something goes wrong.

Recording Availability Debate

One of the biggest challenges of the HyFlex model has nothing to do with HyFlex itself or the technology involved. Rather, it is with the availability of lecture recordings and the evolution of my pedagogical practices regarding recording availability. The first five years I used HyFlex at Michigan, I posted lecture recordings on the learning management system for the duration of the term. This practice ended after the Fall 2017 term when student synchronous (in-person or live streaming) attendance was dismal and, for the first time since I started using HyFlex in 2011, poor student performance on homework and exams indicated that students were not watching the lecture recordings. HyFlex is

intended to help students and to offer them flexibility, not to "design a feature that inadvertently facilitates poor student behavior" (Brian Beatty, personal communication, 2019). Even so, data collected from Fall 2017 students indicated that, with the recordings available, students meant well and planned to watch the videos, but only about 25-30% of students attended class (includes all methods: in person or remotely) and only a minority of the students who did not attend watched the recordings. There are ways to add credit or gamification to increase the likelihood that students will watch videos in a timely manner, but this would contribute to "workload creep" (addressed below). So, while I want the students to have flexibility and choice, it seems that I need to make the choice about recordings for them as a group, not taking individual choice or learning styles into account. This poor attendance and poor command of the material as evidenced by homework and exams resulted in a policy change—recordings were not made available to students during the Winter 2018 term. During that term about 60% of students attended class regularly, with about 16% attending in person and about 44% attending remotely. Although not causal, this demonstrates an association between lecture recording availability and class attendance. Furthermore, students during the Winter 2018 term had far better attendance and performance on homework and exams than students in Fall 2017, so I continued the new policy of not making lecture recordings available.

Unfortunately, in the following year extreme weather and class cancellations during the second week of the Winter 2019 term required me to post a recording from a previous term so that we did not get too behind in the material. After watching the recording, one student inquired about having recordings available for all lectures, and I ultimately opted to make recordings available for 24-48 hours after class meetings for the remainder of the Winter 2019 term, dependent upon student performance. Student performance on Exam 1 seemed to indicate that they were likely watching the recordings, so I continued to post them during the term, even though performance on Exam 2 dropped. Fortunately, student performance on the final exam suggested that students were once again actually watching the recordings, so I felt better about having the recordings posted. As mentioned above, I do not have any lecture-based quizzes during the short period recordings are available, so there is no "guarantee" that students will watch the videos during the short time they are available.

As for the future, admittedly, I am conflicted about lecture recordings—on principle, I want the recordings to be available for students for many reasons, including for material review and unavoidable student absences (athletes, interviews, etc.). In practice, I question how often students who do not attend synchronously really watch the recordings. My (anecdotal) findings are consistent with those documented in Beatty, Merchant, and Albert (2019). Additionally, when recordings are available, synchronous (in person or remote) attendance tends to be lower and there are fewer questions on the backchannel (less student involvement) than occurred when no recordings were posted. Weighing the pros and cons, at the moment I continue to allow recordings for 24-48 hours after a class meeting during the Fall 2019 term. I might consider making the videos available again for exam preparation, but am afraid that students will wait to binge watch as many recordings as they can prior to taking their exams. Publishing and unpublishing the videos during the term must be done manually and contributes to workload creep. Allowing the recordings for a short period of time ideally encourages students to stay on top of the material, but at a time cost that is non-trivial.

Workload Creep

One of the original reasons that I started using the HyFlex model was so that I could teach more students without taking up more physical classroom space. Historically, I have allowed more and more students to take my classes as wait lists far exceeded available spots, and my enrollments at OSU increased from 50 to 200 students per lecture section, with similar increases at UM. The toll this takes on instructors and graders is not minimal. More students enrolled means more homework assignments and more exams to grade—I have graders for the homework, but I choose to grade the exams myself. However, more than the extra grading, it's the barrage of email messages, alternate accommodations, special office hour demands, etc.—in essence, the increased psychological and cognitive load—that come from the increased number of students that has led me to cap my enrollment at UM. Unlike with our large introductory statistics course, there is no administrative help for Stats 412, so all emails are handled by me as the instructor. And, in this digital age, it appears that students are more likely to send a quick email to ask a question than they are to look up the information in the syllabus (e.g., "when is the exam?" or "can I turn this homework assignment in late?"). This non-trivial increase in administrative duties led me to have my department chair cap the course at 100

students per section beginning Fall 2018. Limiting the number of seats in the course goes against my desire to teach as many students as want to sign up for the class. However, I recognized that my students were not getting my best when I was overwhelmed, so I had to scale back. Although HyFlex allows us a way to teach 2-3 times the number of students in the same amount of physical space, it does not compensate for the administrative (and cognitive) load that comes with the increased number of students, and thus must be applied carefully and wisely so the increase in students does not detrimentally decrease the learning experience.

Students Like HyFlex but Adoption Is Slow

By far the most important student outcome of the use of HyFlex at UM has been affective in nature. This is consistent with findings from Miller, Risser, and Griffiths (2013) about HyFlex at OSU. Students like having a choice about how they attend lecture. They also like being able to ask questions through the backchannel. Primarily, though, the opportunity to attend class remotely has been well received by students. Whether a student is in ROTC and has training until 0800 on North Campus but has time to pop home and shower before attending an 8:30am class remotely or whether a student has a difficult time concentrating in a large classroom and appreciates being able to stream lecture in a quieter environment, students like the HyFlex model for Stats 412. Many student evaluations have mentioned that they wish more classes used the HyFlex model, and student focus groups have indicated similar affective responses.

Additionally, for students who mostly attend in person, HyFlex has allowed students to attend lecture on days when they have been unable to be physically present on campus. Remote attendance has allowed students to come to class while attending out-of-town professional conferences, and student athletes have attended remotely when out of town for games. One student even attended class via car while traveling to a friend's wedding 1000+ miles away (the student was a passenger in a car with WiFi connection)! No face-to-face only class can offer these opportunities to students.

Since students really like the HyFlex opportunities they have at UM, certainly it has taken off as an instructional model, right? Unfortunately, that hasn't been the case. As far as I know, HyFlex has not caught on at UM in the same way it did at OSU. The large introductory course at UM that I initially introduced HyFlex in does use HyFlex for exam reviews, but no other statistics courses use the model. It is quite possible that some other instructors in other departments are live streaming their lectures in the lecture halls that have the streaming technology and that I am unaware of it.

Try HyFlex!

Utilizing the HyFlex model in my statistics courses, both at OSU and at UM, has been extremely rewarding. By engaging in HyFlex techniques, I am able to provide my students with continuous choice of class attendance and help to encourage them to take ownership of their own learning. As a faculty member and educational instructor, my ultimate goal is, of course, for students to learn the material and be able to apply it in their other courses and work. If students aren't able to attend class or ask questions, they may quickly fall behind and have difficulty catching up. Even the best students may have this happen. Especially as students advance in their educational careers, the demands on their time can become overwhelming, and non-major courses, although vital, take a back seat to job interviews and capstone projects. A rigid course structure would pit these various elements at odds with one another and would force such students to choose between which lecture(s) they would attend that week. I believe we should be supporting our students in their aspirations, not limiting them. By providing flexible lecture attendance options, I feel that I am contributing to positive educational experiences and that I am engaging in pedagogical techniques that exemplify my personal teaching philosophy.

In addition to my personal affective gains, students at UM have continually responded positively to having HyFlex available for Stats 412. The flexibility has helped students in a variety of situations, and students continue to report appreciating the choice that HyFlex provides for them. As such, I will continue to work with my IT staff to improve both the stream, perhaps by reducing lag and automatically removing recordings, and the backchannel, hopefully by adding

student-to-student interactions so students can learn by teaching others. All indications from students are that they are very pleased with my HyFlex offering, so I will continue to use it in all large courses that I teach.

If you read this chapter, you are at least interested in the HyFlex model—that's great! I think HyFlex is an excellent way to offer our students choice and flexibility in their learning. I encourage you to talk to your instructional technology (IT) support staff about what HyFlex would look like for you. There are many options for streaming and for the backchannel, some of which might already be available at your school. Additionally, you may be able to find ways to incorporate aspects of HyFlex in your teaching even if your school does not already have certain technologies available. HyFlex can be implemented in a variety of ways at any course level for just about all course subjects, so I encourage you to get creative and try it out!

In sum, I look forward to us working together to form a community of educators who offer the HyFlex model, and to ways in which together we can develop technology that meets our needs to expand the model beyond its current reach, in order to provide the best opportunities for our students.

References

Beatty, B., Merchant, Z., and Albert, M. (2019). Analysis of Student Use of Video in a Flipped Classroom. *TechTrends*, 63:376-385.

Miller, J.B., Risser, M.D., and Griffiths, R.P. (May 2013). Student Choice, Instructor Flexibility: Moving Beyond the Blended Instructional Model. *Issues and Trends in Educational Technology*, 1 (1), https://edtechbooks.org/-Hks.)

Miller, J.B. (2016). Investigating the HyFlex (Hybrid-Flexible) Model of Course Delivery in an Introductory Statistics Course, contributed presentation at the Joint Statistical Meetings, Chicago, July 2016.

Miller, J. B., and Baham, M. E. (2018a). Comparing the HyFlex (Hybrid-Flexible) Model of Course Delivery in an Introductory Statistics Course and a Probability and Statistics Course for Engineers and Scientists. Invited paper in M. A. Sorto (Ed.), *Proceedings of the Tenth International Conference on Teaching Statistics*.

Miller, J. B., and Baham, M. E. (2018b). Comparing the HyFlex (Hybrid-Flexible) Model of Course Delivery in an Introductory Statistics Course and a Probability and Statistics Course for Engineers and Scientists, invited presentation at the International Conference on Teaching Statistics, Kyoto, Japan, July 2018.

Miller, J. B., and Baham, M. E. (2018c). Implementing the HyFlex (Hybrid-Flexible) Model of Course Delivery in a Probability and Statistics Course for Engineers and Scientists," contributed presentation at the Joint Statistical Meetings, Vancouver, British Columbia, August 2018.

Appendix A. Using Technology for Stats 412 (download PDF file here)
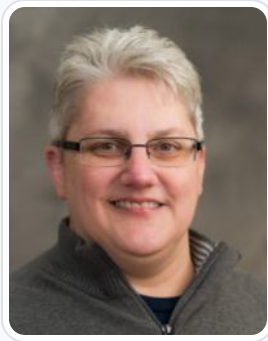
Jackie Bryce Miller

University of Michigan

Jackie Bryce Miller (they/them/theirs) holds the rank of Lecturer IV in the Department of Statistics at the University of Michigan. Jack earned a one-of-a-kind PhD in statistics education from The Ohio State University in 2000 and worked on the faculty of both Drury University (2000-2003) and Ohio State (2003-2013) prior to joining the faculty in the Department of Statistics at Michigan. Jack is interested both in the teaching of statistics and in training future teachers of statistics and is particularly interested in leveraging technology for student learning and understanding. They have always been passionate about statistics education and received the inaugural Robert V. Hogg Award for excellence in teaching introductory statistics from the Mathematical Association of America's SIGMAA on Statistics Education. Jack has been involved in the Consortium for the Advancement of Undergraduate Statistics Education (CAUSE) since its inception and currently serves on the Board of Directors for CAUSE. They have held several leadership positions within the American Statistical Association (ASA), including current positions on the ASA LGBT Concerns Committee and the ASA Leadership Support Council. Jack is known for introducing the HyFlex (hybrid-flexible) method of instruction at Ohio State (through a Departmental Impact Grant) and at Michigan, and recently completed an NSF grant that studied the use of HyFlex in undergraduate statistics courses.

Melinda E. Baham

University of Michigan

HyFlex in Northern Ontario

Cambrian College

Melanie Lefebvre

I joined Cambrian College as a full-time faculty during an exciting time: the launch of HyFlex delivery. As a new faculty, this was terrifying. I was lucky to find Dr. Brian Beatty online and I hit the jackpot when he agreed to provide me with virtual mentorship in preparation. Today, I have the privilege of sharing my story for his collection of case studies surrounding HyFlex delivery. I will be writing from the perspective of a new full-time faculty (having previously taught face-to-face courses the year prior on a part-time basis). Not only is my perspective novel, but so is the implementation of HyFlex learning at Cambrian College.

I'll share my personal journey of preparing for this endeavour, which I hope may serve as a form of guidance and support for others venturing into HyFlex delivery for the first time. I will begin by highlighting the value of flexible delivery and examining the goals that were important to me as a faculty as well as the subsequent execution of these goals from both a technological lens and a pedagogical lens.

To further set the stage, it's worth noting that not only was I embarking on a new journey as a full-time faculty, but I was also the coordinator for a brand new post-graduate certificate program in Community and Health Services Navigation, a helping profession, and its inaugural cohort. I navigated the development of a new program while also delving into HyFlex delivery and emerged unscathed 10 months later. I suspect I still have an abundance of learning ahead of me as I continue to finetune my methods, but for now, I invite you to explore this delivery method from my preliminary lens and perhaps offer you a form of mentorship in the process.

Why HyFlex?

Cambrian College is located in Northern Ontario, also known as the city of lakes, making it a beautiful destination for students. With HyFlex delivery it's now a destination that does not require students to move to Sudbury (even if this means missing out on our 300 plus lakes). Currently, HyFlex is available in Cambrian post-graduate certificate programs. Some faculty outside of the post-graduate certificate programs teach using a hybrid model of delivery while other courses are offered entirely online.

I'm especially grateful for global institutions as I'm pursuing my Masters of Education through Memorial University in Newfoundland. It's likely not a surprise that I managed to incorporate the topic of HyFlex into one of my research papers. Speaking of which, research shows adult learners appreciate the autonomy to tailor their studies to their unique learning style (Elder, 2018). With HyFlex learning, there is the flexibility to choose preferred modes of delivery week-to-week, based on the unique circumstances occurring in one's life at the time (e.g. difficulty obtaining child care) (Elder, 2018). In an Australian action-research driven HyFlex project, 88% of students had consensus that the ability to "study

at a time of day that suits [them]" was an important factor in the navigation of their independence (Taylor & Newton, 2013). Everything I was learning in my studies as a graduate student was being echoed at Cambrian: they had clearly done their research as not only had they consulted with students, but the learner-centered decision was implemented in their 2015-2019 Strategic Plan (Future Cambrian, n.d.).

It was important for me to understand the rationale behind the new model but I didn't need much convincing. As a student myself, I can attest that having options is a luxury. As a faculty, my main goal was to ensure that regardless of a student's chosen method of delivery, they would successfully and confidently acquire the desired learning outcomes. This would inevitably require some flexibility on my part, especially for a helping-related program in which direct observation of the skill development of students is an important component. It is important to note, however, that HyFlex delivery does not imply that the learning experience of online students must be identical to face-to-face, as this is clearly not realistic, but rather, the outcome of the experience must yield an equitable opportunity to achieve the learning outcomes and therefore requires careful and thoughtful consideration by the instructor (Taylor et al., 2013).

My professional goal aligned with Cambrian's strategic goal: putting the student first. From a pedagogical perspective, it was important for me to balance this luxury with the requirements of the program so that regardless of the chosen method of delivery, students are equipped with the skills to support others as a navigator.

Housing HyFlex

Before working towards achieving my goals for the inaugural cohort of students, I needed to understand the logistics of how HyFlex delivery could occur. Cambrian had virtual classrooms prepared to videostream classes in real-time, which would then be uploaded afterwards. Cambrian had a couple of technological options to make this a reality, with Zoom being the platform I opted to utilize. The selling points for me were the various features such as having the autonomy to upload my lecture independently at my discretion, which allowed for customization as needed. This also helped with the anxiety of being recorded, which, for me, felt awkward initially. The ability to customize what I uploaded also aligned with my goal for students to confidently demonstrate the learning outcomes of the course. If an activity did not translate for asynchronous learners, I sometimes chose to make a mini video specifically for them, but that could also be viewed by all students to reinforce concepts. The ability to pause the recording in real time proved especially useful during what can sometimes be long pauses of silence before a student responds to a posed question. Finally, the "break-out room" feature allows virtual learners to still participate in small group activities. This was important to me because I didn't want virtual students to feel alienated.

In Dr. Beatty's approach to HyFlex learning, he encourages participation across all modes of delivery. While not required, he creates opportunities for face-to-face students to interact with asynchronous online students and combines participation for both online delivery methods (B. Beatty, personal communication, July 3, 2018). It was my intention to emulate this immersive experience as much as possible.

Cambrian also has the luxury of a Teaching and Learning Innovation Hub (AKA The Hub) which was instrumental in saving me the grief of trying to figure out the tech myself. Their level of expertise was both reassuring and supportive. To provide further context, Cambrian courses are housed in Moodle, a learning management system. The Hub added a Zoom plugin that allowed both students and faculty to access the virtual classroom, so to speak. Everyone can benefit from The Hub's resources by checking out their website [here](#)

What eventually became second nature would not have happened so seamlessly without practicing with the technology to increase my comfort level. I did test runs with willing participants to ensure both sound and video were in working quality. I also introduced myself to the Audio and Video Support Staff, conveniently located in the hallway as the majority of the HyFlex delivery classrooms. Finally, I created tutorials for students using a screen recording platform so I could capture the exact process of how to access live lectures as well as where to find recordings afterwards.

Support

Without The Hub, I don't know where I would have started (well, perhaps I would have found Dr. Beatty earlier). Not only was technical support readily available, but so was a tutorial created by The Hub team for those venturing into the world of HyFlex delivery. But it wasn't just me teaching within my program. As the coordinator for a brand new program, it was important for me to stay connected with the part-time faculty who would also be teaching in the program. My own experience of feeling initial terror of HyFlex, coupled with my experience of working full-time as a mental health worker while teaching part-time helped me empathize with the jitters they too, were likely experiencing. I created a shared folder online with additional resources should faculty choose to learn more, because, well, technology can be intimidating, with one of the resources containing helpful responses from Dr. Brian Beatty via our email correspondence:

> *You might find more ideas about the online role-playing activities at https://edtechbooks.org/-AAo The challenge is in the timing of the interaction for asynchronous students. If you rely on a discussion board tool for the role-playing, then there's likely to be a lot of time lag in-between role taking. You could require the asynchronous students (or suggest) that they coordinate to do a live online role play using Zoom or some other tool that they can record and post for you (or other students) to review. Another useful resource for building interactivity into the course for online learners is this free e-book from Curt Bonk (Indiana U: http://tec-variety.com) I've also sometimes simplified things by building interactive assignments (activities) only online and requiring all students (whether attending online or on-ground) to complete them online. That approach also brings the different types of students together to help form a learning community. Most on-ground students today have no problem in completing online activities as part of a traditional class.*

I also summarized a telephone conversation with Dr. Brian Beatty to share with faculty, which you can check out in Appendix A.

To ease my worries about whether I'd set up the technology properly, I created a step-by-step guide along with troubleshooting resources that was housed in the classroom where faculty taught (which was also a comfort for me) and met with them for a live demonstration. To encourage communication and continual learning along the way, The Hub created a community of practice so faculty could voluntarily meet on a monthly basis as an informal support system. Check out the guidance they offer for HyFlex learning at the link found here

Equitable Learning Opportunities

Some of the activities I was teaching required practical application of skills. HyFlex learning is not meant as a universal solution. Some courses require in-person interaction in order to allow for practical applications to occur seamlessly as specific skill sets are acquired (Elder, 2018). Because HyFlex learning is designed with the learner in mind, I had to balance said flexibility with the objectives required to be a successful navigator. I did this in a couple of ways. In one assignment students were required to chair a coordinated care conference with their peers. I connected with the fully asynchronous students at the beginning of the course to inquire about their availability for attending one of the sessions synchronously, thereby providing them with ample notice to make any needed arrangements. For another assignment, which was a simulated on-campus experience with staff acting as healthcare professionals throughout the college, I provided three months notice so that asynchronous students would be able to attend. However, as one of my students was fully asynchronous residing outside of Sudbury, I created an online version of the simulation for her.

Cultural considerations are important to keep in mind since, depending on the cultural background of the learner, their exposure to innovative technologies may be limited (Elder, 2018). Regardless of culture, however, a learner's ability to navigate technology can be taken for granted and issues may arise when it is assumed that all learners are familiar with the chosen technologies. This barrier can be especially demoralizing to the student, with one student who experienced this phenomena identifying as feeling "alienated" (Taylor & Newton, 2013). Ensuring students have equitable learning opportunities regardless of which format they choose is an ethical duty. Failure to consider this could pose a monumental barrier if not addressed (Taylor et al., 2013). This adds a layer of pressure to the faculty, and while sometimes additional work is necessary (e.g. one-on-one sessions with asynchronous students outside of classroom time to assess their progress), it is reassuring that it can be done. There may even be more efficient ways that I have yet to discover.

The Outcome

While I may not have official data to present, I do have anecdotal evidence of success. Firstly, of the 21 students of the inaugural cohort, all 21 graduated. My goal was to ensure I put the students first regardless of their chosen delivery format. Putting the student first was important because I wanted future career opportunities to be realistic for all students, regardless of their chosen delivery method. It was my intention that regardless of whether students were in class, joining synchronously or viewing the class afterwards, they would have the appropriate skills to help future clients navigate complex systems. I'm excited to share that many students across modalities of delivery have obtained meaningful employment, which I'm defining as employment in a helping-related profession. Some students were hired at the same agency where they completed their field placement. Some students chose to continue their studies in a similar helping-related profession (e.g. Social Services), while others chose an unrelated educational path.

It was a rewarding challenge as some students came into the program without any prior experience in a helping profession. Some of the students who got hired in a helping-related profession after the program came from a science background (e.g. Microbiology). It was thrilling to see evidence (via being hired!) that I had helped to equip the students with relevant skills that the workplace deemed valuable. I think this speaks to the potential of the program as not only an introduction to the helping profession but as a way for helping professionals to finesse their skills.

Conclusion

Thank you Dr. Brian Beatty for inviting me to contribute to such an innovative community and showcase the work of Cambrian College. I hope to expand my networks, both locally at Cambrian and globally, with other trailblazers. I look forward to future mentorship opportunities as well as the opportunity to mentor, all while continuing to put students first.

References

Elder, S. J. (2018). Multi-Options: An Innovative Course Delivery Methodology. *Nursing*

Education Perspectives, 39(2), 110-112. doi: https://edtechbooks.org/-xiB

Future Cambrian. (n.d.). Retrieved from http://futurecambrian.ca/

Taylor, J.A. & Newton, D. (2013). Beyond Blended Learning: A Case Study of Institutional

Change at an Australian Regional University. *The Internet and Higher Education, 18*, 54-60. Retrieved from: https://doi.org/10.1016/j.iheduc.2012.10.003

Teaching & Learning Innovation Hub. (2019). Retrieved from https://teaching.cambriancollege.ca

Appendix A: Summary of Key Points from Personal Conversation with Dr. Brian Beatty, July 3, 2018

Participation

- Make participation a requirement. Also, make it professionally valuable to them so they want to do it
- Need interaction with students who are synchronous online - even as simple as a chat - to help them feel like they are there
- Layer in asynchronous discussions to online course

Small Numbers

- Small number of students = more interaction from professor with each student

Layer 3 Delivery Methods

- Don't keep face-to-face separate from online
- Review what online students did in class
- Emphasize that all students are more than welcome to participate online but not required to do so
- Connect students with one another. Example: personal reflection post in which everyone had their own thread and every week they would write a paragraph or two of what their learning process has been like. It was optional as to whether students read the threads of others. Dr. Brian Beatty read them all but let students know he wouldn't be replying. He encouraged students to interact if they chose to, and noticed that some did.

Assignment Ideas

- Work on a project for the For him, every week Dr. Brian Beatty added another component to the project with components due throughout the semester

Face-to-Face Class Time Recommendations

- Group tasks are good
- Brian Beatty did regular live peer reviews in class of the project components
- He also created small reading groups

Asynchronous Students

- For asynchronous students, make sure the following are very clear: What I have to do? What to do next?
- Asynchronous students: tasks may be to review archive discussion or something created and uploaded separately

Tech Tips

- Be mindful of bandwidth considerations when it comes to uploading material for asychn students
- May want to start small with amount of tech used. Don't want to have too many tech at first. Can build upon tech in future years.

New Program Tips

- Acknowledge with students this is new - they could help with the process. Frame it as we are in this together.

Feedback

- Get unofficial feedback - both mid and end term - from them in addition to what the college does - lets them know you value their input.
- If midterm feedback, this is also a chance for them to influence the second half of the course.
- Let them know they have am opportunity to influence the program for future students

Melanie Lefebvre

Cambrian College

Melanie Lefebvre graduated with an Honours Bachelor of Arts in Psychology from Laurentian University in Ontario, Canada in 2007. She then began working at the Canadian Mental Health Association supporting individuals with mental illness and substance use disorders where she dedicated 11 years. In 2017, she began working as a part-time professor at CTS Canadian Career College in the Mental Health and Addictions Program as well as a part-time professor at Cambrian College teaching Psychology..

She currently serves as the coordinator and professor in a post-graduate certificate program in Community and Health Services Navigation at Cambrian College. She is also working towards her Masters of Education in Post-Secondary Studies as a part-time, online student through Memorial University in Newfoundland, Canada.

HyFlex at Montana State University Billings

Montana State University Billings

Susan Balter-Reitz & Samuel Boerboom

In 2015, Montana State University Billings sent two faculty from the Sociology department to the e-Learn Conference. It was from this event that we first became aware of the HyFlex teaching format. At the conference the format was branded a "true hybrid," and our e-Learning staff rejected this singular interpretation of hybrid design. Despite the intriguing student-centered possibilities of HyFlex gleaned from the conference, no one from our e-Learning office followed up with the participating faculty or further researched the possibilities of HyFlex, in part due to the perception that the faculty had too narrow a vision of hybrid teaching.

Luckily, one of the faculty members who attended the conference, Dr. Joy Honea, did not lose her enthusiasm despite the tepid reception she received from our staff. During the fall semester of 2017, she reached out to see if there was faculty development money available to support her travel to a conference to learn more about HyFlex. Unable to locate an upcoming conference with HyFlex on the program, the Director of e-Learning, Dr. Sue Balter-Reitz, began researching HyFlex to see what resources were available. Dr. Brian Beatty's name quickly appeared, and Sue emailed him to see if he had any presentations scheduled. He did not have anything on his docket, which turned out to be a fortunate event for MSUB. Instead of sending one faculty member to a conference, we asked if we could visit San Francisco State University to meet with Dr. Beatty and attend his custom workshop on HyFlex.

We were able to secure funds to send six of us to investigate the potential of HyFlex for our University. Our scouting party included the Director of e-Learning, an Instructional Designer, and four faculty members familiar with hybrid and online learning. We embarked for San Francisco State, hopeful that the HyFlex course delivery model would help us negotiate some of our enrollment and retention issues.

MSUB's Readiness for HyFlex Delivery

Montana State University Billings is a regional comprehensive university located in Billings Montana. Billings, with a population of approximately 105,000, (United States Census) is the largest city in the state. Health care and banking are the primary economic drivers in the city. Fifty-seven percent of students enrolled in the university are from Yellowstone County, where Billings in located. Almost all students work at least part time, and a good majority of them are employed full time. Needless to say, our students rely upon flexible course delivery modes in order to balance their competing priorities.

The University includes five colleges split into two campuses: University Campus and City College. City College is our embedded community college. The portfolio of programs offered by the institution spans one semester technical certificates to Master's degrees. Headcount for Fall 2018 was 4,315 (Montana State University Billings) The average age

of our students is 24.6, and many students enroll less than full time in order to balance family and work obligations. Despite relatively low tuition, MSUB students tend to be debt averse, and stop out to earn money to pay for their next semester. As a result, time to graduation can be slow and retention and completion numbers are not ideal, especially when compared to peer institutions who have more traditional students.

The demographics of the university prompted early adoption of distance education. MSUB began offering Internet-enabled classes as early as 1996, and by 2000 had a healthy number of fully online classes and programs. In 2018, the university offered 27 fully online program and 665 online course sections (Montana Board of Regents). Full-time faculty have largely embraced online teaching, partly because doing so is tied up with the university's mission, and partly out of necessity to fulfill student demand. A minority of faculty have been hesitant to embrace online learning because they fear the reduction of on-campus instruction will result in inferior student learning and retention. Our students also desire on-campus classes, but they must be offered at times that fit into their packed schedules. Students often mix and match on campus and online classes in their course registration in order to better balance work and family obligations. In any given semester, approximately 55% of students are registered in at least one online course.

Student demand for online course sections is high, and academic departments struggle with balancing staffing for online and on-campus offerings. As with many regional comprehensives, budgets are challenging, and departments are under pressure to cancel low-enrolled courses. Most often this translates to cancelling on-campus sections, leaving students who prefer face-to-face learning feeling pressured to enroll in online courses. Our unique student demand for both on-campus and online courses positions MSUB to be a potential leader in adopting innovative course delivery formats.

Important Lessons from San Francisco State University

MSUB's experience building a robust online education program assisted our exploration of HyFlex. Decisions about online staffing, scheduling and course development belong to the academic department; a structure that ensues faculty centrality. We knew that for HyFlex to work at our university, it would need to be led by faculty. At MSUB, faculty are represented by two unions, the Montana State University Billings Faculty Association (representing faculty on University Campus) and the Montana Two Year College Faculty Association (MTYCFA) (representing faculty at City College). Thus, it was crucial that we included faculty who would be able to serve as representatives for union issues, as well as influencers for peers, as we determined if HyFlex was appropriate for our campus. We ended up inviting two faculty from each campus to SFSU. These faculty were program leads and all had significant experience teaching online and hybrid courses.

During the visit, Dr. Beatty arranged for our team to meet with faculty who taught HyFlex courses for SFSU. This was incredibly valuable; the experience that these faculty shared helped us to understand the diversity of options available for structuring a HyFlex course. These conversations also helped ease our faculty's apprehension about the workload associated with HyFlex, including the concern that faculty would be teaching two courses for the price of one, and that HyFlex would allow administrations to overload course enrollments. Dr. Beatty, and the faculty who spoke to our team, emphasized two crucial points: 1) HyFlex design begins with a solid online course design and 2) the additional work for faculty is in the design phase and not in the teaching of the HyFlex course.

The visit was a successful in that all four faculty who had the opportunity to interact with the SFSU team returned to MSUB highly motivated to adopt versions of HyFlex into their own courses.

Piloting HyFlex

Immediately upon our return to campus, we began working with the administration and the unions to start a small pilot in Fall 2018. The Faculty Association included the HyFlex pilot on its agenda, and it was in these meetings that we hammered out an agreement on how to compensate faculty for HyFlex. All parties agreed that we needed to ensure that our HyFlex sections were well-designed so as to ensure student success and retention. As a result, the administration

agreed to provide a stipend for faculty to complete faculty development courses in both online and hybrid course design. This was a first for MSUB as we have no required faculty development programs for teaching anywhere on campus. Additionally, the administration agreed to a stipend for course design equivalent to the stipend for online course development. The MTYCFA, who meet separately from the Faculty Association, were willing to abide by the agreement made by the Faculty Association.

Three of the original four faculty who visited SFSU developed courses for the Fall 2018 and Spring 2019 semesters. These three courses provided a strong basis for evaluating the possibility of HyFlex. The courses: BGEN 105: Introduction to Business SOC 482: Contemporary Sociological Theory and COMX 435: Media Criticism, serve very different student populations. The Introduction to Business Class is taught at City College and is geared for beginning students. Sociological Theory was an online class for majors that was converted to HyFlex at the request of the students, who were all on campus majors. Media Criticism, which is a course that is taught at both the undergraduate and graduate level in the Communication department, is a course for experienced students. Communication offers courses both fully online and on campus, so the enrollment in this course was guaranteed to provide insight into the mix of onsite and distance students.

One Faculty Member's Perspective: Sam Boerboom's Reflections on HyFlex

There were several challenges to getting my first HyFlex course off the ground. First, I needed to work with my department's administrative associate to communicate with students about how to register for my HyFlex Media Criticism course. The course listed a weekly required course meeting on campus like any other hybrid course in the course schedule. MSUB was not able to generate a unique course code to designate the section as HyFlex, because the format had only been used once at MSUB at that point. I was teaching my course with on-campus and asynchronous online options available to my students. It was very challenging explaining to students that they would have the option each week to choose how to participate. The "early adopters"—those I had recruited from my on-campus and hybrid courses the semester before—were thrilled about the flexibility afforded to them. My online-only students were more apprehensive due to the novelty of the format. They needed reassurance that their experience would not be lesser because they had to participate exclusively online. Put differently, they wanted to be assured that the course was not designed and optimized primarily for on-campus students.

I received a stipend to develop the course and took to heart the best practices taught by Dr. Beatty and the other faculty at SFSU. The design phase of the course was relatively straight-forward. I learned quickly that communication with students about their participation options each week was going to be challenging, especially because many of our students do not consistently use the email assigned to them through our learning management system, Brightspace. I learned that when piloting HyFlex, an instructor committed to intentional design best practices should strongly consider how best to leverage an LMS's design features to reinforce to students through weekly announcements, unit introduction pages, and email prompts their participation options for each unit.

Once my students got used to how the course looked different from on-campus or hybrid sections, they seemed to grasp the flexibility afforded to them. Of course, those students who were able to attend on-campus were able to have their questions answered in real-time by me, which proved to be advantageous to them. I perceived that all of the students in the class intuitively grasped how HyFlex worked after the first three weeks. After that initiation stage, I determined that I had three different types of students in the class: the majority (60%) were exclusively online; 30% were exclusively on-campus; and 10% or so were participating both online and on-campus.

Student feedback was overwhelmingly positive. The online-only students appreciated that they would not have to wait two semesters until the class would be offered online again. Additionally, I heard from two students who attended the on-campus meetings only once during the semester. One of the students was local and the other lived further away from the Billings area. Both remarked that having the flexibility of participation each week allowed them to plan ahead on choosing a week they could attend class. They loved meeting their on-campus classmates and being able to ask

questions of me in-person. My on-campus students remarked that they valued the flexibility of knowing that if a work, family, or health obligation arose, they would not have to scramble to arrange options to attend class. One student in particular commented that HyFlex reduced her anxiety about being a student. When I inquired what she meant by that, she commented that students like her often internalize class absences as evidence that they are bad learners, or that they should not be in college. I was struck by this comment and came away more convinced than ever that HyFlex is an ideal way to meet our students where they are on their educational path.

Upon reflecting on my first HyFlex class, I determined that I would design the course differently the next time I taught it with a focus on including participation assignments that would allow both my on-campus and online students to interact more with one another. In my first HyFlex class, I designed separate participation assignments for those participating on-campus and online. Not only was it more work for me as the instructor, it separated my students into two distinct groups, which was not my intention when I initially designed the course. My focus was on presenting students with flexible participation options, and not thinking enough about how to blend the class together as a dynamic, interactive whole. I believe that sharing what transpired in each unit's on-campus meeting—whether by written summary and/or video recording—with those participating online would increase perceptions of inclusion.

I learned through piloting HyFlex that it is a nimble course delivery format that accommodates students managing several obligations. HyFlex is a course scheduling solution that keeps our students on track to graduate in a timely fashion. But it is more than these things, too, it seems. HyFlex allowed me a platform to reimagine blended classroom learning space and how I should be present in it. I was able to leverage HyFlex to incorporate both on-campus and online learners in the same space during the same weekly block of time. As the result of my experience, I am firmly convinced HyFlex is a game-changer for our students and our institution.

Lessons Learned from the HyFlex Pilot and Next Steps

As Dr. Boerboom's experience illustrates, HyFlex was a natural fit for MSUB: our student demographics, faculty experience and online infrastructure made it relatively simple to launch the pilot phase at our institution. At the time we are writing this case study, there has been a great deal of interest by other faculty adopting HyFlex and we are currently working on a plan to scale HyFlex for Fall 2020.

Our Provost and Institutional Research Director are committed to evaluating the pilot to ensure that it was an effective instructional modality. While data analysis is ongoing at the University level, faculty who participated in the pilot asked students to complete a survey on their experiences in these courses Overall, students responded that they would be highly likely to enroll in another HyFlex class. Qualitative comments across all three pilot courses echo Dr. Boerboom's observations that students found the flexibility of the HyFlex section transformative for their education.

Two large issues emerged as we evaluated our HyFlex Pilot. Perhaps most important is that we need to ensure that we can clearly communicate to students what HyFlex means for them. There are two elements to this concern. First, the university needs to develop a course code to identify sections taught in this modality. We currently designate courses as on campus, hybrid and online using suffixes (100, 600, and 800 respectively). During the pilot we were unable to create a suffix for HyFlex. This must happen as we scale. Second, we need to create a communication campaign to clearly communicate to students what the expectation for participation is within any given class. Students in the pilot needed a few weeks to adjust to the flexibility offered in these sections; if we can streamline their understanding this will make teaching easier for faculty

A second issue that arose was that faculty who were not part of the pilot, but had heard about HyFlex, began to announce they were offering HyFlex sections. This raises concerns about quality within these rogue HyFlex courses. One of the lessons this campus learned during its growth of online is that it's important to provide students with a consistent experience within a given modality. It would be a shame for the HyFlex project to be undermined by faculty who do not have a well-designed and executed course. In order to ensure excellence, we will need to collaborate with deans and department chairs who provide oversight of faculty course modality. They will need to be gatekeepers who

ensure faculty offering HyFlex Sections have completed the faculty development requirements and have a well-designed course.

During Fall 2019, the three faculty members who participated in the pilot, along with the Director of e-Learning and the Vice Provost, will host an open forum for faculty interested in being part of the launch of HyFlex in 2020. We are not sure what this launch will look like, but we are excited about the possibilities for our university.

We are grateful to Dr. Beatty and the faculty of San Francisco State University for introducing us to this transformative teaching format.

References

Montana Board of Regents (n.d.) Online education summary stats. Retrieved from https://edtechbooks.org/-ftu

Montana State University Billings (n.d.) Institutional research. Retrieved from https://edtechbooks.org/-xWSf

United States Census Bureau. (n.d.) American fact finder. Retrieved from https://edtechbooks.org/-QMU

Susan Balter-Reitz

Montana State University Billings

Dr. Susan Balter-Reitz is a Professor of Communication at Montana State University Billings. She has served the university as Graduate Director, Director of e-Learning and Interim Vice Provost. Her experience in administration prompted her interest in innovative teaching and course design. Sue's primary area of research is in free speech, and she most recently published how universities should deal with controversial speakers. Sue can be reached at susan.balterreitz@msubillings.edu.

Samuel Boerboom

Montana State University Billings

Dr. Samuel Boerboom is an Associate Professor of Communication Theatre at Montana State University Billings. He currently chairs the Department of Communication and Theatre. Sam has served as chair of the university's graduate committee and was an eLearning Faculty Fellow for the College of Arts and Sciences. His interest in innovative course design serves his goal of increasing student engagement in online learning spaces. Sam researches and teaches political communication and has published on credibility in food science discourse. Sam can be reached at samuel.boerboom@msubillings.edu.

A Faculty Transitional Journey from Single Mode to HyFlex Teaching

San Francisco State University

Zahira Merchant

My journey of using HyFlex in teaching graduate level courses began in Fall 2013, when I landed at San Francisco State University (SFSU) after accepting an assistant professor's job in the Instructional Technologies (ITEC) program. The ITEC program had been using HyFlex courses to serve both classroom and online students since 2006, and many courses and faculty taught this way, though not all. One of the many things that came flying at me in my first semester as a tenure track faculty was the description of the HyFlex modality, which I thought was both unique and demanding. San Francisco State's definition of HyFlex requires students be provided a classroom-based and online choice of participation each week; it was up to me to decide how to provide the online path, synchronous, asynchronous or both. Faculty are provided the freedom to choose course modality, in consulation with the department and college, though many ITEC courses were expected by students, based on recent history, to follow a HyFlex approach.

Why was HyFlex unique to me?

HyFlex was unique to me because I needed to plan on running three parallel modalities in one single course, i.e., 1) first, face to face (F2F) students in the physical classroom, 2) second, online synchronous students who join the students in the physical classroom during the class time by means of a web conferencing tool. We used Blackboard Collaborate when I started in Fall 2013, and then the university switched to Zoom a few years later, 3) third, students who couldn't be present in either synchronous modality and preferred to complete class activities asynchronously.

Why is HyFlex demanding?

The reason I called using HyFlex approach demanding is because each modality required designing instructional materials that would fulfill the need of students selecting that modality, and could possibly be reused by students in any modality. For example, if I was teaching the use of *IF* functions and its variation in MS Excel, I would plan an in-class walkthrough activity for the F2F students. But if I was using paper-based handouts, I had to digitize them to make them available for the online students. Also, software walkthroughs are challenging to manage between two modalities; especially using a hands-on approach, where students are practicing in front of you and you can provide real time feedback. It is difficult to observe online students practicing on their own machine as well troubleshoot if they run into any issue. Further, it is more demanding for students attending asynchronously because not only would I upload pre-recorded multimedia but also redesign activities and formulate instructions in a way that students can submit their

work as an evidence of class activity completion. Therefore, a single session could require twice and sometimes even more preparation time than class offered using a single modality.

Visual Appearance of a HyFlex Class Session at SF State

A typical scene in my classroom would be: I am stationed at the audio/visual console which acts as the control center for all the communication flow. A class projector mirrors the desktop screen to the students in the classroom and at the same time a web conferencing platform relays the same to the online students. Due to limited classroom technology available in the earlier years of my adoption, the online students could only see the class and me from a particular angle, which was through the built-in camera of the computer monitor. The online students often reported a sense of exclusion due to this limited view of the class.

The Hi-Tech Classroom

Recently, SF State invested significant resources upscaling the technology to create Hi-Tech spaces that are more conducive to implementing a HyFlex approach. The active learning spaces are designed to allow collaborative work between students aided by large SMART TV monitors and movable white boards. There is a fixed 360° view camera that provides a bird's eye of the class and allows the instructor to alter the view as needed. Upgraded audio with a superior quality sound system resolved the audio transmission issues between F2F class students and those attending synchronously online (zooming in). Overall, the complete technology overhaul supports educators offering both synchronous modalities seamlessly, without having to waste significant class time troubleshooting technology.

Painting a Picture of Student Experience based on Anecdotal Information

I constantly seek students' feedback to learn about their experiences, especially with the HyFlex delivery. The students thoroughly enjoy the flexibility of selecting a modality for a class session. In the HyFlex setup I use, a student can select a combination of modalities to attend the fifteen week long course. Some of the advantages I gleaned from students' responses are:

- Ability to network with classmates in the physical space.
- Ability to sometimes being in the comfort of their homes and attend the class.
- Avoid missing classes due to schedule conflicts by using the asynchronous attendance option.

Over the years, I noticed that approximately 50% of students would stay consistent in using the online synchronous modality throughout the course. The remaining 50% typically attend the first few weeks of class in person and then move to the online synchronous options with occasional use of the asynchronous modality. Students rarely used the asynchronous modality, preferring the immediacy and interactive characteristics of synchronous participation.

In my version of HyFlex, I do set a limit of maximum three asynchronous sessions per course. My rationale to impose this limit was mainly to implement quality control measures. I wanted to discourage students from using asynchronous modality as purely a convenience, but encourage them to see their three asynchronous sessions as a luxury to be used sparingly when they had an unavoidable schedule conflict. In the external context, asynchronous attendance is the default option with the non-traditional means of learning, with many platforms competing for students' attention, such as, Udemy, Lynda.com, Khan Academy, and LinkedIn Learning. Although these learning platforms present an ever-persistent means of content deployment, there is always added value in synchronous environments that assimilate the content and support immediate student-to-student and faculty-to-student interaction for engagement and deep learning. I prefer to require this type of learning environment as much as possible to support better student learning.

Benefits and Cautions

I have noticed one primary benefit and I offer two important cautions for those considering a HyFlex approach in their courses.

1. **Increase access –** There is no doubt that the HyFlex approach increases program's reach to the participants that otherwise may not be able to enroll and complete the degree program.
2. **Self-disciplined and control** – In the first few weeks of the class, I present the HyFlex structure of the class. Moreover, I also discuss the rationale for adopting the HyFlex approach as primarily to increase access and not convenience at the cost of losing the in-class interaction. Therefore, students should practice extreme self-discipline in selecting the modality. Selecting the asynchronous modality only to "take a week off from participating in the class activity" should not be the primary driver in the decision-making process.
3. **Extraneous Cognitive Load** – Although I have not conducted a cognitive load experimental study in relation to using a HyFlex approach, over the years students often expressed how browsing through the weekly modality activity option is a time-consuming endeavor. Further, students confessed to have selected the modality after the reading the activity description, perhaps making their decision on too little guidance as to what might be best for their learning (Kirschner, Sweller, & Clark, 2006).

Technology Sophistication and HyFlex Success

Implementing a HyFlex approach is heavily dependent on an important resource key criteria, the audio/visual technology in the classroom. Integrating an effective audio system into a classroom is a huge endeavor, involving buy-in at all levels from the program level up to the university level. Moreover, AV systems involve IT support to troubleshoot issues within minutes, not days. (Not all classroom IT support units can be that responsive.) As a faculty, I try to reach the physical classroom at least 30 minutes before the class start time to ensure the technology is fully operational. In spite of doing that, I would sometimes still run into issues because another faculty who had used the classroom before me may have altered the system settings or the classroom IT unit may have changed the technology configuration in some way which impacted the previous regular procedures. All in all, keeping up with the technology is extremely time consuming and sometimes unfortunately wastes some instructional time.

As I understand adoption, during the first round of HyFlex implementation in a program there is possibly more excitement about the new opportunities available for students (and even faculty). However, as it becomes a more regular phenomenon then it may suffer some "water-down effects" as the initial excitement subsides and the nagging issues (students choosing modality for conveience even when sacrificing learning quality, AV issues in the classroom, etc.) remain. Further, during the post initiation stage, technology upgrades that may be necessary can be an unwelcome budget request when considered among the many other competing department, college and university priorities.

In my opinion, adopting HyFlex should be looked as as a long-term commitment and not a quick fix for a student attendance problem. A systematic (and systemic) readiness check is a must to avoid student and faculty frustration and a consequential abandoning of the approach due to lack support on various fronts.

In promoting the use of HyFlex, supporting the faculty in the following ways may lead to its increased adoption.

LMS integration

In my six years of teaching using HyFlex (regularly in the earlier years and then moving to more occasional use over time), I realized that if the Learning Management System (LMS) were built to integrate the approach naturally with additional capabilities designed to support multiple modes of participation, there might be faster adoption. (Most LMS's are designed primarily to support fully online learning.) For example, LMS systems or support units could provide suggestions to convert a face-to-face activity into asynchronous class activity with built-in context-sensitive help. Another useful function would be tracking students' modality selection and performance. Though some of these functions may be possible in LMS's today, it is often up to each faculty member to figure out how to use them best to support the multiple modes of HyFlex. Perhaps, with recent development advancing the field of learning analytics this can be possible to a greater extent.

Faculty skill set in media development

Teaching with technology poses challenges with regards to the faculty skillset. There are many skills that become imperative if you do not wish to disrupt the class on a regular basis: knowledge of classroom hardware, operating

system and presentation software, and media content development, such as videos and other authoring software development platform. Before teaching a HyFlex class, the faculty should be well prepared to meet not only the challenges of teaching both in the classroom and online, but also in using the provided technology to instruct effectively.

HyFlex is a promising approach that promotes students' autonomy and access to educational opportunities. However, its success is often dependent on the institution's budgetary commitment and faculty time to develop and implement. A university wishing to increase its' students engagement and access by adopting a HyFlex approach should first assess the readiness on both fronts, the technology budget and faculty commitment.

References

King, W. R., & He, J. (2006). A meta-analysis of the technology acceptance model. *Information & Management, 43*(6), 740-755.

Kirschner, P. A., Sweller, J., & Clark, R. E. (2006). Why minimal guidance during instruction does not work: An analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching. *Educational Psychologist, 41*(2), 75-86.

Zahira Merchant

San Francisco State University

Zahira Merchant is an Associate Professor of Instructional Technologies Program at San Francisco State University (SFSU). She received her Ph.D. in Educational Psychology (Emphasis in Education Technology) and MS in Educational Human Resource Development from Texas A&M University. Dr. Merchant has served as the PI, Co-PI, Senior Personnel on several federally and non-profit funded grant projects from agencies such as National Science Foundation (NSF), California Teaching Commission (CTC), and IDEA. Before joining SF State, she was the project manager and postdoctoral research associate of an NSF project studying the effects of using 3-D virtual reality technologies in training mathematics educators. Dr. Merchant's engages in research focusing on virtual reality, game-based learning environments, learning analytics, digital literacy, computer science for K-12, advanced quantitative and qualitative research methods, mixed research methods. Dr. Merchant's research is published in top-tier peer-reviewed journals and is highly cited by scholars nationally and internationally. She is currently the member of the Editorial Board of the Journal of Formative Design in Learning.

Dr. Merchant is the winner of the Robert Gagne Instructional Design Award (2012) awarded by the Association of Educational Communication and Technology Organization (AECT) for her outstanding dissertation. She has been the recipient of the Presidential Service Award three times from for her exceptional service to the AECT's Design and Development Division, where she served in the leadership for four consecutive years. Dr. Merchant was the finalist of the PacifiCorp Design and Development Competition (2012). She also won the Certificate of Merit Award (2012) for a game she developed for students of nursing education.

Hyflex Learning within the Master of Teaching Program@KU Leuven

KU LEUVEN, Belgium

Annelies Raes, Marieke Pieters, & Piet Bonte

| HyFlex | EDU | Belgium | Master of Teaching Program | Hybrid Virtual Classroom | Technology |

| student experience | presence | Video |

In this chapter, we will discuss:

- The institutional needs for modifying the concept and redesigning the curriculum of the Teacher Training Program
- The unique approach and design of the hybrid virtual classroom@KU Leuven, Kulak
- Impacts on Students and Teachers
- Design Guidelines

Why Hyflex Learning@KU Leuven?

KU Leuven, one of Europe's oldest universities, is dedicated to education and research in nearly all fields (more info on https://edtechbooks.org/-hqW). As can be seen in the map in Figure 1 below, KU Leuven boasts fourteen campuses, spread across 9 cities in Flanders, the northern part of Belgium. KU Leuven also offers the **Master of Teaching Program**, which in Dutch is called 'Educatieve Master' (https://edtechbooks.org/-PgYy). In September 2019, KU Leuven started with **EDU**, a brand new concept for Teacher Training (https://edtechbooks.org/-VyN).

Figure 1

Locations of KU Leuven Campuses
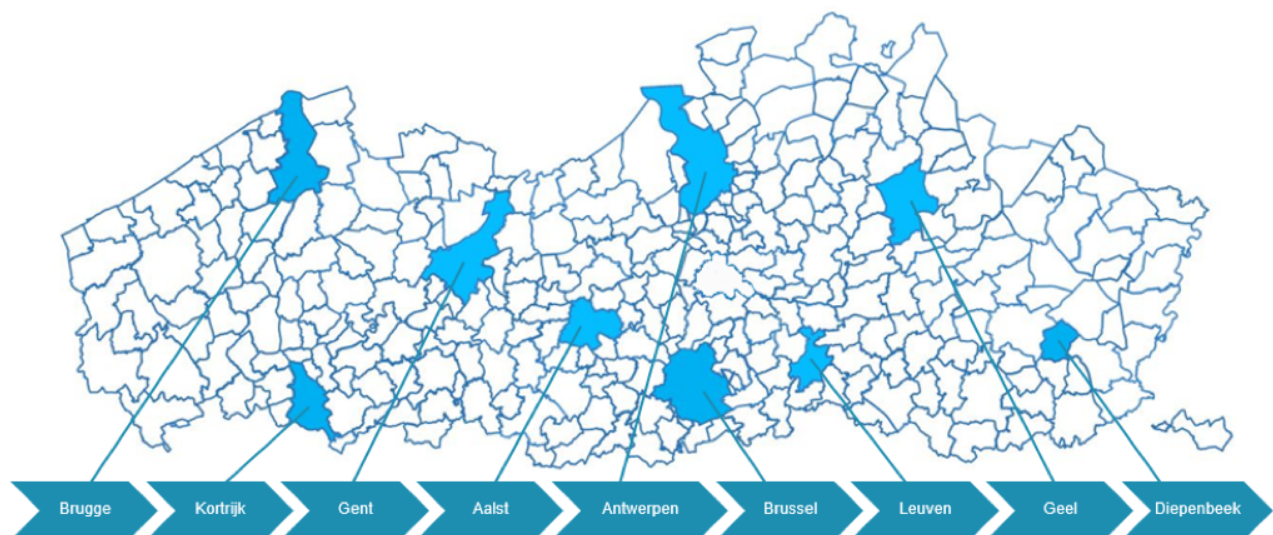
The institutional goals of the transformative **EDU@KU Leuven program** are the following:

1. **Flexible organization**

Within EDU, maximum flexibility is provided to students. As EDU is part of an extensive cooperation network all over Flanders, students are allowed to follow certain courses, seminars or projects at the location of their choice, in line with their interests or because a certain location better suits their personal schedule.

Next, the program offers an alternation between face-to-face education, distance learning and blended forms in line with the HyFlex model presented by Beatty (2019). This flexible approach makes the program more accessible to students who are combining work and education.

In the EDU program, students have the flexibility to choose the specific campus and their mode of participation in classes.

2. **Exchanging expertise and bringing people together independently of place**

Next to fixed courses as part of the different Master of Teaching Program, some courses at the different campuses and institutions are open to all students, independently from which program they are enrolled in. This means that within the new EDU concept we are able to bring together people from different places, with different backgrounds and with different expertise. This leads to a more open and multidisciplinary approach in which students get acquainted with different perspectives.

Providing HyFlex Learning@KU Leuven

To meet the goals of flexible learning crossing borders, the KU Leuven invests significantly in the use of **educational technology** to facilitate collaborative learning and multi-campus education and to broaden the international reach (see https://edtechbooks.org/-urS). One specific technology that is currently changing the educational landscape and makes education more flexible and accessible for a larger and more diverse group of learners is the **hybrid virtual classroom**. The general concept of 'hybrid virtual classrooms' is connecting both on-site students and individual remote students during synchronous teaching and learning (See Raes, Detienne, Windey, & Depaepe, 2019) for a more detailed study of the concept). This provides the pedagogical freedom to reach students and teachers from any place in the world, increasing both societal access to education and improving the quality in education as knowledge transcends the boundaries of the classroom.

The Unique Approach and Design of the Hybrid Virtual Classroom@KU Leuven, Kulak

ITEC, an imec research group at KU Leuven - to which the authors are affiliated to - is often involved in research and development projects in which academic partners work together with industry partners to meet bottom-up, practically oriented innovation goals. The LECTURE+ project[1] (see https://edtechbooks.org/-Ejk) more specifically aimed to make distance learning as seamless and vivid as learning in face-to-face classrooms, without sacrificing the affective features of face-to-face instruction by building a synchronous hybrid virtual classroom.

As one of the first steps in the project, we completed a systematic literature review (Raes et al., 2019) on synchronous hybrid learning to learn from earlier studies and experiences and avoid making the same mistakes as earlier project teams. We learned that past experiences and published research clearly shows the potential of this emerging practice, but also stresses the current challenges. Many studies state that 1) for remote students the learning experience is still not the same as being in the classroom and 2) many teachers mention the heavy workload and 3) the less natural way of teaching.

Together with the industry partners, we investigated how a hybrid virtual classroom should be designed to improve the learning and teaching experience. Besides that, we designed our approach so that the extra technical support required would be as low as possible to make the solution **easy to use for teachers and students, supporting natural teaching** and **cost-efficiency**.

The project resulted in a hybrid virtual classroom that is **innovative and unique** compared to the previous video- and web-conferencing platforms for two reasons. First, the system includes improved software to connect students and the teacher to make spontaneous interaction possible. Second, we also invested in a redesign of the physical learning space to meet the challenge of offering all students comparable learning experiences regardless of their location. Special attention has been paid to making the **hardware lightweight and ensuring ease of use** of the set-up from the perspective of the **teacher**, the **students** and the **room operator.**

The pictures in Figures 2 and 3 below show the hybrid virtual classroom in which both on-site students and remote students can follow the course, at the same time, but from different locations. Remote students are projected on the screens accompanied by their name. This makes it very easy to interact with the remote students. The screens are placed in the back of the classroom, as they are the last row of students.

[1] The imec.icon project LECTURE+ is a research project bringing together academic researchers and industry partners. In this project the research groups ITEC, Distrinet and PSI collaborated with the industry partners Barco, Televic Education and Limecraft. The LECTURE+ project was co-financed by imec and received project support from Flanders Innovation & Entrepreneurship (project number HBC.2016.0657).

Figure 2

Pictures Taken in the Hybrid Virtual Classroom at Edulab, KU Leuven Campus Kulak Kortrijk, Belgium

The teacher can easily interact with on-site and remote students by asking oral questions or launching a quiz or poll via the system. To launch quizzes or polls, a more experienced teacher can make use of the tablet on which he/she can manage the different sources (e.g. learning content, the interactive whiteboard, chat platform, silent questions and the quiz/poll platform). Newcomers to the hybrid virtual classroom prefer that the room operator manage the quizzes or polls. The room operator has the same authorizations as the teacher and can assist when and where needed, including muting some or all students, pushing certain content, launching polls or quizzes, presenting the results, and chatting with students.

Figure 3

Picture Taken in the Hybrid Virtual Classroom at Edulab, KU Leuven Campus Kulak Kortrijk, Belgium
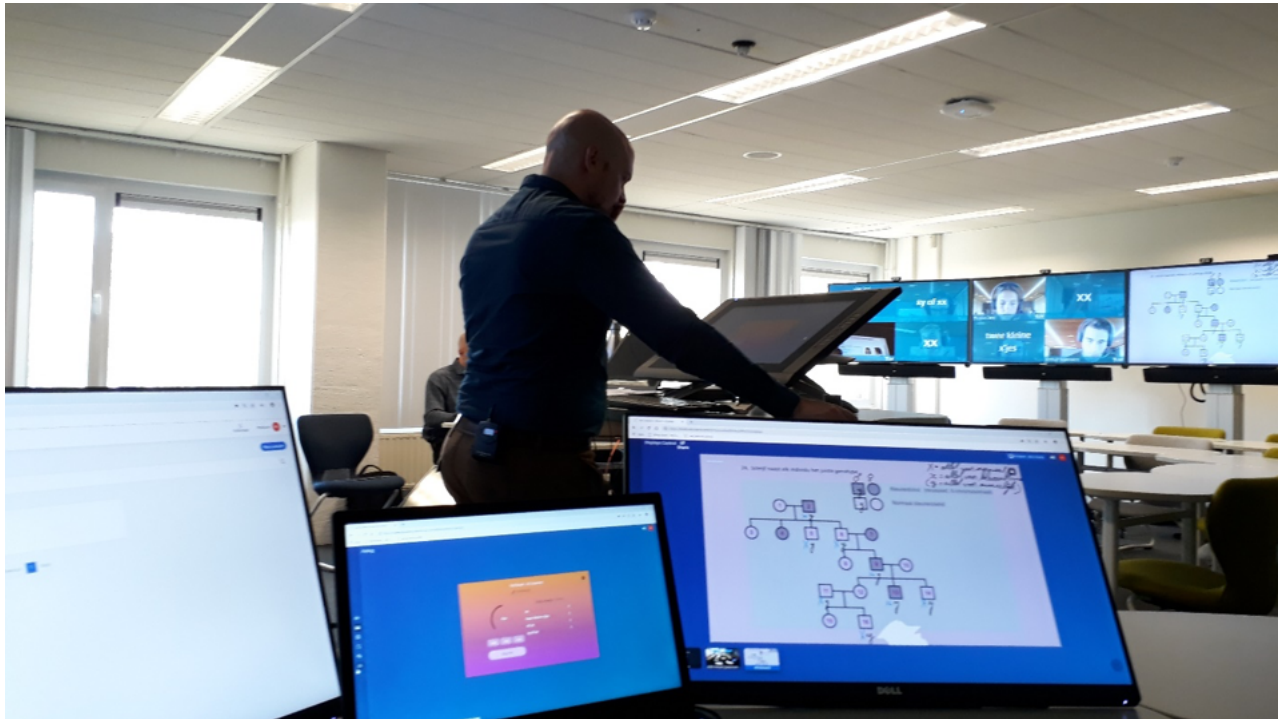
Figure 4 displays what remote students see when participating in a session giving in the hybrid virtual classroom at Edulab. On the left side, remote students can select which screen they put in focus. Cameras in the virtual classroom record from 5 different angles. By means of the global view (i.e. camera on top of the presenter screen, remote participants can see how they are displayed in the classroom. The virtual room director, developed in the context of the LECTURE+ project, manages multiple camera views and shows based on AI algorithms the best camera view according to what it happing in the room.

By means of the 'Share Button', every (remote) student is able to share his/her screen. Once the screen is shared it becomes part of the sources in the teacher platform and the teacher or room operator can share the screen with all participants. On the right side of the interface, students can make use of the chat window. By using the chat, students can interact with the teacher and their fellow students. Students can also send a question to the host of the session (i.e. the teacher and room operator) A student can choose to do this anonymous or not. These 'silent' questions are made visible for the teacher and room operator on the tablet they use to manage the different sources. Students can see the questions on the right side of the interface (see the chat window on the pictures below). Students can 'like' a question of a peer which informs the teacher about the most relevant and urgent questions.

Figure 4

Screenshots From a Remote Student Participating in Sessions Given in the Hybrid Virtual Classroom
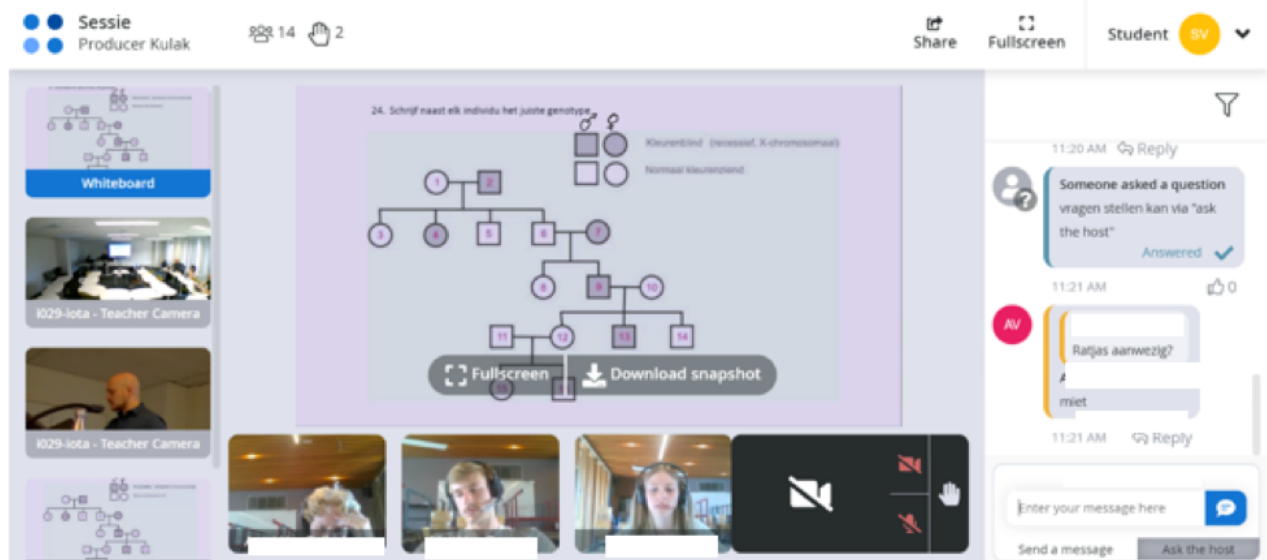
Figure 5

A Picture Taken During a Demo Session With the Research Team
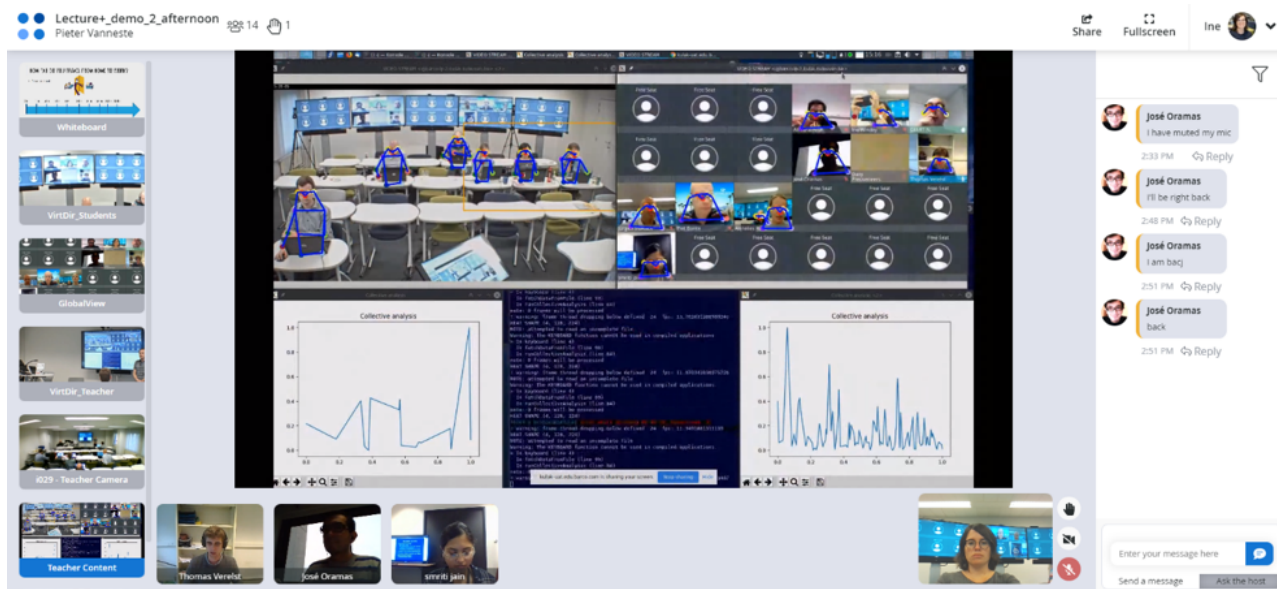
Impacts on Students and Teachers

As indicated above, the EDU format results in courses with participating students spread over Flanders. Several teachers started using the hybrid virtual classroom to teach all or part of their courses in the context of the Teacher Training Program. As we were one of the first institutions that tested the hybrid virtual classroom, it was important to continuously assess the experience as it developed, revising the approach as necessary to support effective teaching and student learning. To be able to update the solution along the way, interviews were organized with the involved teachers to gauge their experiences. We also systematically evaluated students' experiences by sending them online questionnaires. In the context of the LECTURE+ project more specifically, one within-subject experimental design study was set up to investigate the effect of launching quizzes on students' engagement during hybrid virtual learning (see Raes, Vanneste, Pieters, Windey, Van Den Noortgate, & Depaepe, 2020). Below we summarize the results of the experiences from the perspective of the teacher and the students.

Teachers' Experiences

What we found in every interview with teachers who taught in the hybrid virtual classroom is that the experience exceeded the expectations they had beforehand. One teacher stated: *"I thought that teaching to virtual students would have been very artificial and weird, but this was not at all the case. I had the feeling that my [virtual] students were very close to me and I could see their faces and expression even better than in a traditional F2F classroom; … I could easily interact with them as I do in a normal class setting and I had the feeling my students were very attentive."*

Seeing the remote students as good as the on-site students is expressed by every teacher as an important benefit. The fact that students' names and students' answers on the quizzes or polls are also visible on the screens additionally improves the interaction and supports the natural way of teaching.

Most of the teachers had had experience with traditional videoconferencing systems and indicate the facilitation of spontaneous interaction as the biggest advantage of the hybrid virtual classroom.

Although it is a big advantage that the teacher can see the remote students, one teacher indicated that she often had to make her students aware that they are visible and that they should behave as if they were in the physical classroom. Some students, for example, start eating during the course and others did not choose the most appropriate background. This teacher suggested that we provide students with some basic behavior and visual awareness rules as 'digital etiquette', in addition to providing the basic technical requirements for participation.

Teachers indicate that professional training focusing on the do's and don'ts of teaching in the virtual classroom is key. Next to this, teachers indicated that they were very happy with the assistance of the room operator. This is especially needed if teachers are newcomers to the virtual classroom. Consistent with our literature review ([Raes et al., 2019](#)), teachers express that in the beginning, teaching in the new learning environment creates a heavy cognitive load to give attention to both on-site and remote students, managing the new technology and focusing on the learning content. Yet, more experienced teachers testify that after getting more acquainted with teaching in the new environments, it is sufficient if the room controller only assists with the system set up at the start of a session. After the session begins, experienced teachers often feel secure enough to teach without the continuous assistance of the room operator.

Teachers express that professional training is not only needed from a technical point of view, but also from a pedagogical point of view; a point which is also in line with our literature review. Teachers shared that teaching in the hybrid virtual classroom requires them to think in advance about how to transform their lecture into an interactive lecture. Some teachers believed at first that their learning content (e.g. law) is not applicable for launching quizzes and polls. Yet, in the professional training, we make clear that interaction can be applied easier than initially thought. In line with Merrill's first principles of instruction (Merril, 2002), we also advise starting lectures with activating prior knowledge about the content of the course. Halfway and at the end of the course teachers can also organize formative assessments to check students' understanding. Yet, interaction can also be based on non-content related issues. For example, teachers can ask students if they need a 15 min break or prefer to skip a break and end the lecture 15 min sooner. The platform supports 'on the fly quizzing and polls' which means that preparation in advance is not needed. Teachers express that they appreciate the easy use of the "on the fly quizzing and polling" as it supports spontaneous interaction with all students, no matter if they are on-site or remotely. However, if teachers apply formative assessment, we advise them to prepare their questions in advance and include them in their presentation slides.

Teachers also expressed that – especially as a newcomer – they wondered how they were visible for the students. The nice thing about the system is that the room operator can show the teacher the student visual perspective. As part of the development in the LECTURE+ project, an automatic room director has been a development which provides the students with a dynamic view of the teacher. This feature means that teachers do not have to pay particular attention to where they stand during teaching, as the virtual director follows the teacher throughout the classroom.

All teachers express that they have the intention to use the hybrid virtual classroom in the future. One teacher specially mentions looking forward to use the newest features in the platform, such as, organizing break-out sessions during synchronous virtual teaching.

Students' Experiences

Teachers told us that some students were very skeptical about the new format of EDU as they thought the model would harm them if they chose to follow the course remotely. One student even shared her complaints by email with the teacher as her personal situation forced her to follow the course remotely and she thought this would be a disadvantage for her. The teacher testifies that now, this student is one of the most enthusiastic students in her course even though she participates remotely.

Yet, we should acknowledge that the student's belief was reasonable as many studies conclude that on-site students and remote students still experience the lesson differently in the hybrid synchronous situation (Szeto 2014; Zydney et al. 2019). As already mentioned above, we set up an experimental within-subjects design study comparing the students' learning experiences of on-site versus remote students in the hybrid virtual classroom (Raes et al., 2019b). A mixed-methods approach was used including real-time measurements of intrinsic motivation next to retrospective self-report surveys and interviews. Our study found, in line with previous studies, that the relatedness to peers and the intrinsic motivation is the lowest for students following remotely, while other students attend the course on-site. No significant difference in motivation was found if all students follow the course remotely or all students follow the course on-site. A limitation of this study was that the participants were twelfth graders and that the remote experience was rather artificial for them.

In contrast to the participants in our experimental study, students in the context of the teacher training program often combine study and work and many live far away from the campus. For these reasons, these students appreciate the flexibility which is offered by means of the hybrid virtual classroom much more, as it gives students the choice where to attend the course. Teachers testify that at the beginning of their courses the majority of the students came to campus to follow the session in the classroom. Yet, week after week the amount of students coming to campus reduced as students became convinced that the learning experience as a remote student was much better than they initially expected.

Students mentioned the following actions as the most effective to guarantee and support a pleasant learning experience:

- You can easily indicate if you want to say or ask something. This is made possible by pressing the 'raise hand' button, but it is also possible in the traditional way by raising the hand as the teacher can see us on the screens in the back of the classroom.
- Quizzes and polls launched during sessions enhance cognitive understanding and make sure we stay engaged. The positive effect of quizzes on students' engagement is also confirmed in the experimental study (Raes et al., 2020).
- If there is a technical problem, we can ask this without disturbing the session by using the chat window, which can be followed up by the room controller, the teacher and fellow students.

Most participants found it quite easy to follow sessions in the hybrid virtual classroom. The possibilities for interaction are highly appreciated and students indicate that teachers should even make use of them more systematically. On a technical level, few problems were experienced. To participate in a hybrid session, students need a personal computer with webcam and microphone, a good internet connection and Google Chrome are the only requirements. The use of a headset is recommended for optimal audio quality.

Table 1

Summary of the Main Benefits for Teachers and Students

Benefits for teachers	Benefits for students

- Teachers don't have to sit behind a screen, but can teach as they normally do: standing or walking around.

- Teachers can naturally interact with on-site and remote students as both are visible.

- The teachers do not have to bother about his/her position, as the virtual room director follows the teacher.

- Multiple options for interaction make it easier to know if your students are still engaged.

- Based on students' personal situation, they can choose to come to campus or follow the session remotely.

- Remote students are projected on the screens in the back of the classroom as they are the last row in the classroom. This makes them part of the classroom.

- Remote students can select different viewpoints.

- Multiple options for interaction make it easier to stay motivated during lessons.

- Interaction between onsite and remote students is possible.

Design Guidelines

Based on the experiences of the teachers and students who used the hybrid virtual classroom and based on the academic research results, we formulated five design guidelines for teaching in the hybrid virtual classroom. These guidelines are also printed on a poster that was hung in the hybrid virtual classroom, so teachers would have a constant reminder in their field of view.

1. **Prepare yourself and your session in advance:** both on the technological and pedagogical level. Make sure that you have followed the demo and that you have thought about integrating interactivity.
2. **Trust the room operator; focus on teaching:** As a newcomer in the virtual classroom, you can focus on teaching, the room operator can assist you with managing everything, including launching quizzing and presenting the results. You will see, you will learn by doing and make the room operator redundant.
3. **Welcoming students:** Ensure that the remote students always feel included in the class to reduce some of the distancing effects. Address them by using the names visible on the screens.
4. **Clear communication:** Communicate requirements to students in advance: headset, syllabus, charger, etc. (the most typical problems can already be addressed outside of class). If you will start 5 minutes later than planned, communicate this to the remote students as they do not 'feel' it that people are still coming in.
5. **Cognitively activate students:** Use students names, frequently ask questions, launch poll/quizzes and discuss the results.

Conclusion

We strongly believe that educational institutions, including universities, should embrace technology as the implementation can offer opportunities for innovative teaching approaches and supports the current societal transitions. Our hybrid virtual classroom is found to be a teaching and learning facilitator that support multi-location learning and enables people, at any stage of their life, to take part in stimulating learning experiences. Yet, to ensure that innovative projects can be scaled up and be implemented university-wide, a well thought-out policy is required dealing with both pedagogical and technical challenges.

According to us, the main pedagogical challenge is that it requires from the teacher's perspective a shift in the pedagogical methods in order to accommodate to the new technology. In addition, because the quality of the teaching is partly dependent on the teacher's competence in using the technology, the teacher needs to actively learn how to work with the technology and has to get opportunities to try things out and evaluate the outcomes on the basis of evidence. To deal with this challenge, the university invests in a university-wide expertise center, KU Leuven Learning Lab (see https://edtechbooks.org/-fHEA) to support project teams that want to test and roll out innovative ideas and to work together on the realization of the policy priorities.

The most important technological challenge is that innovative technologies are continuously altered, which can be frustrating, especially for teachers. It is found that small usability issues, caused by the continuous updates of innovative technologies, may confuse, delay or hinder the learning process. Consequently, reliable educational technology calls for a trustworthy IT foundation. This means that a good network infrastructure and adjustments to meet the newest developments are self-evident, but this is not achieved without continued efforts. A technological update, well spread out, scalable and financially feasible forms the essential link to incorporating technology in contemporary university education.

References

Beatty, B. J. (2019). *Hybrid-Flexible Course Design: Implementing student-directed hybrid classes* (1st ed.). EdTech Books. Retrieved from https://edtechbooks.org/hyflex

Merrill, M. D. (2002). First Principles of Instruction. *Educational Technology Research and Development. 50*(3), 43-59. https://edtechbooks.org/-jwSq

Raes, A.[1], Vanneste P.[1], Pieters, M., Windey, I., Van Den Noortgate, W. & Depaepe, F. (2020). Learning and instruction in the hybrid virtual classroom: An investigation of students' engagement and the effect of quizzes. *Computers & Education.* https://edtechbooks.org/-geRdoi.org/10.1016/j.compedu.2019.103682

Raes, A., Detienne, L., Windey, I., & Depaepe, F. (2019). A systematic literature review on synchronous hybrid learning: gaps identified. *Learning Environments Research*. https://edtechbooks.org/-IJV

Szeto, E. (2014). A Comparison of online/face-to-face students' and instructor's experiences: Examining blended synchronous learning effects. *Procedia - Social and Behavioral Sciences*, *116*, 4250–4254. https://doi:10.1016/j.sbspro.2014.01.926

Zydney, J. M., McKimm, P., Lindberg, R., & Schmidt, M. (2019). Here or There Instruction: Lessons Learned in Implementing Innovative Approaches to Blended Synchronous Learning. *TechTrends*, *63*(2), 123–132. https://edtechbooks.org/-QoU

Annelies Raes

University of Leuven

Annelies Raes holds a PhD in Educational Technology by Ghent University and is currently working as Postdoctoral Researcher at the Centre for Instructional Psychology and Technology (CIP&T) at the University of Leuven (KU Leuven), campus Kulak in Kortrijk, Belgium. Annelies Raes is also co-Principal Investigator within imec's Smart Education Program (https://www.imec-int.com/en/articles/smart-education). Her main fields of interest are new innovative education models as active learning and problem-based collaborative learning and how this can be supported by emergent technologies. From 2017 Annelies was in charge of the research conducted in the context of the TECOL project (https://www.kuleuven-kulak.be/tecol?lang=en), the research and development project on Technology-Enhanced Collaborative Learning at KU Leuven, campus Kulak Kortrijk. Annelies also conducted the research from a pedagogical perspective in the imec.ICON project LECTURE+ about effective remote learning (https://www.imec-int.com/nl/imec-icon/research-portfolio/lecture).
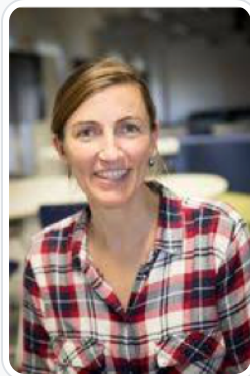
Marieke Pieters

KU Leuven

Marieke Pieters holds a Master in Geography and was teacher for more than 15 years in a secondary school in Kortrijk (https://lyceumolvvlaanderen-kortrijk.rhizo.be/). In 2018 she joined ITEC, imec's research group at KU Leuven, campus Kulak in Kortrijk as a full time researcher in the context of the LECTURE+ project. In this 2-year project her role was to set up the research projects focusing on Technology Integration together with the secondary school. Since 2020 Marieke Pieters combines her job as teacher in geography with a job at the KU Leuven where she is responsible for the professional development of teachers who want to integrate the technology for collaborative and distance learning (including the hybrid virtual classroom) in their courses.

Piet Bonte

KU Leuven

Piet Bonte is IT staff at KU Leuven and core member of the Technology-Enhanced Collaborative (TECOL) project. He provides central IT-AV support for education, research, administration and policy and manages the IT-AV infrastructure. He strongly collaborates with the Industry Partners (e.g. the one in the LECTURE+ project) for the rollout and implementation of the IT solutions.

Increasing Flexibility, Satisfaction, and Efficiency Using the Hybrid Flexible Approach

Vanguard University

David Rhoads

Potential Solutions to an Ongoing Challenge

Colleges and universities of various sizes, both private and public, are striving to increase enrollment, while dealing with the issue of limited classroom space, and frequently these schools do not have the ability to expand the total number of classrooms through building projects because of budgetary constraints (Smith, 2016). This classroom space challenge is exacerbated by the traditional way of delivering undergraduate education, through classroom anchored, lecture-based course offerings that are typically offered in a two to three day per week, face-to-face format (Smith, 2016). Administrative solutions to this dilemma generally focus on extending the school day, either through the addition of earlier courses, later courses, or both. The adding of early courses may increase classroom options, but could negatively affect student learning (Owens, Belon, & Moss, 2010). The addition of later courses could increase capacity, but since two thirds of four-year college students work, this solution could also maximize schedule flexibility (McCormick, Moore III, & Kuh, 2012).

If building new buildings or extending the school day cannot be relied on to solve the classroom space deficit, what are some institutional options that will promote both student success and schedule flexibility? Administrators frequently look to online course offerings as a solution (Moe & Chubb, 2009). Online courses have the potential to increase campus capacity by moving some instruction out of the physical campus, as well as reduce overhead costs. Cost savings could be realized through decreased faculty pay for accelerated courses, through facility overhead cost decreases, as well as through potential revenue increases coming from increased campus capacity (Bowen, 2012).

A significant challenge to the online programs option is the fact that many students would not prefer an online course or program if given the option because of their learning preference to have face-to-face interaction. This is where the Hybrid Flexible (HyFlex) approach comes in. As we have seen in previous chapters, HyFlex courses are the combination of an online course and a hybrid/blended course that give students the ability to choose their learning modality from week to week, thus increasing their options for course and program completion. Additionally, from an institutional perspective, instead of offering two separate courses, with two separate teaching contracts, to potentially two separate professors, the Hyflex option brings the modalities together to help the institution realize potential cost and space savings.

Exploring the Hyflex Option

The potential cost savings is what drove the Adult and Professional Studies program at San Diego Christian College, a small private liberal arts college in Southern California, to explore the use of the HyFlex model. The non-traditional undergraduate program, since the 2016-17 academic year, had experienced lower than expected enrollment in both online and onsite course sections. Because of this enrollment decrease, it became evident that costs associated with this program needed to be reduced. The enrollment decrease made it so there were only 8-12 students in each course section (1 online/1/onsite) rather than close to the 24-student enrollment cap in each modality. The main objective of the program was to provide an excellent, flexible learning experience for all students in each modality. An important goal of the institution was to also run a robust program cost effectively, while making sure course sections are as full as possible. Single mode or teacher-led hybrid approaches could not fulfill the objective of an excellent, flexible learning experience because of low enrollment numbers in each modality offering. The goal of running the robust program in a cost-effective manner, while offering courses in two separate modalities, proved hard to achieve.

What It Looked Like

It was determined that, by combining unique online and onsite course sections together into unified courses, the institutional objectives/goals of an excellent learning experience and program cost effectiveness could be fulfilled. This combination of course modalities was achieved by building all courses in the program within the online modality, while also offering every student the weekly choice to participate in some discussion and application activities in the classroom instead of online. Building these classes in this way, as hybrid flexible, gave every student the ability to choose their attendance modality from week to week, even if many of them could not choose to attend onsite because of their proximity to the campus. Even if these students could not attend courses onsite, they were still able to participate in the course, alongside those onsite students, in the online discussions each week.   While initially no synchronous learning opportunities were given to the online students, some onsite course section professors recorded their onsite sessions and posted them for students to view and/or review. After a year or so in this format, weekly optional synchronous sessions were offered via the video conference tool built into LMS.

To promote student success and overall retention, the program established minimum attendance expectations, as well as late work policies across the program. The attendance policy required students to miss no more than two of the five weeks of the course, with attendance being tracked by either presence in the on-campus sessions or through completion of the equivalent learning activity designated as the participation/attendance assignment. Late work policy was established that allowed students to turn in late work up to one week late for 20% off the earned grade and prohibited all late submissions past that point. The one exception to this rule applied to asynchronous discussions that were not allowed to be turned in late for credit.

Implementation Process

Designing the Hybrid Flexible courses began with the standardization of format and flow of both onsite and online courses. This standardization of courses across the entire program was possible because all courses were not built by individual faculty members but by an instructional design team that collaborated with those course content experts to create relevant assignments, discussions, and media content. Once online and onsite courses were built within a standard format and flow, it was easier to then combine the courses into one unified Hybrid Flexible course. The move to Hybrid Flexible was communicated to the faculty well in advance of implementation, and both learning experience improvement and cost savings objectives were clearly pointed to as the motivation for this change. The initial design of the Hybrid Flexible courses was tested in select course sections to see how it functioned for both student and faculty. The design of these courses was then adjusted over several 5 week modules and training for both student and faculty was then created and made available within the student and faculty support center courses, housed in the learning management system.

One of the challenges that the school experienced, with moving an entire program into the Hyflex model, is that all faculty had to be in the San Diego area so they could come to campus to teach the onsite portion of the course. With strictly online courses the faculty pool was much larger as they were drawn from all over the United States. One additional challenge faced was the number of students who could potentially attend onsite shrank over time due to attrition and smaller than expected enrollment numbers for San Diego based students. This, at times, created a learning environment in the onsite course meeting that had too few students for good discussion and activity. This led to both student and faculty dissatisfaction. Accreditation was not a factor because the program was already approved to be taught both online and onsite and credit hours were the same for both attendance modalities. A salary increase to compensate for the additional work necessary to teach mixed modality courses was discussed, but in the end, was not implemented due to budget constraints.

Studying the Impact of Hyflex Implementation

The biggest impact made was in the area of cost effectiveness, where the program was able to realize over $170,000 in salary savings over one calendar year. During the time studied, individual course offerings were reduced by 126 courses, as onsite and online sections were combined. In addition to this savings, additional savings were realized through the reduction of the instructional design and human resource administrative time. The overall learning experience was also improved by increasing the overall student number of students in each course section, lending to more engaging and diverse online discussions.

For the purpose of completion of my doctoral dissertation, a mixed method causal comparative and phenomenological study was conducted to discover and examine the impact, if any, of 16-week traditional and five-week Hyflex delivery modalities on student learning and satisfaction within undergraduate courses. (Rhoads, 2020) Quantitative satisfaction data was collected through a Likert survey as well as through data extraction from the institution's student information system. Qualitative data was collected from students through open ended survey questions as well as from select faculty through interviews. For each of the two hypotheses, statistical analysis was presented through descriptive statistics as well as through comparative analysis. The quantitative analysis was followed by qualitative analysis that explored themes and patterns that emerged.

The participants in this study included a total purposive sample of eighty-one students from fifteen undergraduate courses, offered in the traditional and non-traditional programs, over the course of five academic semesters. Results from causal comparative analysis revealed the need for clear directions, and expectations along with an organized learning environment, and pointed to the Hyflex modality as stronger in these areas than the traditional modality. These strengths may come from the fact that online or hybrid courses with less face to face contact with students need to be more explicit in their written directions and expectations within the learning management system. It is recommended that traditionally delivered courses be built and organized like those within the Hyflex delivery modality, so directions and expectations are clear even if the student cannot make it to the physical classroom.

Results from phenomenological analysis revealed that students perceive that they learn better and are more satisfied when they are given choices for their schedule and course type rather than being assigned to courses without options or input. It was also revealed that many students prefer the traditional classroom, but schedule conflicts prohibit many of these students from attending according to their preference. It is recommended that traditionally delivered courses be built and organized in the Hyflex delivery modality format so students could attend according to their preference as much as possible, but also be given the flexibility to attend online when necessary.

Data analysis also revealed that students struggle with keeping up with accelerated, five week Hyflex or online courses when they also enrolled in a program that has primarily 16 week courses. It is recommended that traditional student enrollment in five week Hyflex courses be minimized when they are also enrolled in mostly 16 week traditional courses. If the entire traditional program could transition over to shorter five or eight week Hyflex courses, it could then be recommended for these traditional students because of its increased flexibility and decrease course enrollment overlap.

Results from phenomenological analysis of, "How did Hyflex courses impact faculty/staff performance or satisfaction?" revealed that faculty need to be properly trained in the administration of these courses, as well as paid fairly to compensate for the extra work of moderating two modalities within one course. It is recommended that an online faculty support course be built and required of all Hyflex faculty. It is also recommended that faculty be paid at a higher rate than stand alone traditional or online courses, in relation to the increased workload required of teaching Hyflex courses. These measures would certainly lead to higher satisfaction among Hyflex faculty.

It is recommended that future research be done to test the impact that different courses with identical curricular content and structure (Hyflex and traditional), but that are delivered via different modalities, have on success and satisfaction. Courses that were compared within this specific study had the same learning objectives, but curriculum and structure were different. It is recommended that research also done on the impact that different length courses, delivered via different modalities, have on success and satisfaction. Courses compared (Hyflex and traditional) in this study were different lengths and those lengths could have an impact on student learning/performance and satisfaction separate and apart from delivery modality. It is also recommended that research be done on the learning/performance and satisfaction of students only taking one or two courses at a time in the accelerated Hyflex model, versus four or five courses at a time in the longer traditional model. Traditional students within this study took four to five courses at a time while Hyflex students took one or two courses at a time, which could have an impact on student learning/performance separate and apart from delivery modality.

Hyflex in a New Context

Since the time of the study I have moved to another institution and currently hold the position of the Director of Teaching Excellence and Digital Pedagogy at Vanguard University. Part of my responsibility in this position is to train faculty in both undergraduate and graduate programs in the use of technology in the classroom as well as to introduce innovative approaches to content delivery, including the introduction of the Hyflex approach. Upon arrival at Vanguard I was able to create Hyflex templates of various lengths within the Canvas learning management system and upload them to Canvas Commons for use by our faculty as they built or rebuilt their courses. (See Figures 1. and 2.) These templates were designed based on the principles of Flipped Learning, James Lang's Small Teaching, and Universal Design for Learning and provide tool recommendations as well as verbiage examples for both undergraduate and graduate courses.

Figure 1

Homepage of the 8 Week Hyflex Course Template

Figure 2

Example of Weekly Coursework Format

Home
Modules
Grades
Announcements

▼ Do This Before Anything   Complete All Items

    Onsite/Online - Welcome to Class Video
    Aug 12, 2019 | 0 pts | Submit

    Onsite/Online - How to Navigate This Course
    Aug 12, 2019 | 0 pts | Submit

    Plagiarism/Grammar Check
    0 pts | Mark done

▼ Week 1 - Pre Quiz   Prerequisites: Do This Before Anything   Complete All Items

    Week 1 - Pre Quiz
    Aug 12, 2019 | 10 pts | Submit

▼ Week 1 (8/12/19 - 8/18/19)   Prerequisites: Week 1 - Pre Quiz

    Week 1 Onsite/Online - Heads Up on Final Project/Assessment
    Aug 18, 2019

    Week 1 Onsite/Online - Learning Activity A
    Aug 13, 2019 | 35 pts

    Week 1 Onsite/Online - Learning Activity B
    Aug 15, 2019 | 35 pts

    Week 1 Onsite/Online - Learning Activity C
    Aug 18, 2019 | 50 pts

    Week 1 Online/Missed Class - Learning Activity (Participation Points)
    Aug 18, 2019 | 25 pts

    Week 1 Additional Resources

▼ Week 1 - Post Quiz   Prerequisites: Week 1 - Pre Quiz   Complete All Items

    Week 1 - Post Quiz
    Aug 18, 2019 | 10 pts | Submit

Note. Lighter text indicates prerequisites/requirements not met to proceed to next module

In addition to the availability of these Hyflex templates, I was also able to customize and make available to faculty, a "Designing and Teaching for Impact in Online Course" that was originally created by faculty development team at Indiana University. (See Figure 3.)This course was originally created as a course that aimed at helping faculty build online courses using evidence-based practices, but now has been customized to help faculty build quality courses in all modalities, including the preferred multi-modality Hyflex format.

Figure 3

Homepage of Designing and Teaching for Impact Course

Designing & Teaching for Impact - Certification

DESIGNING AND TEACHING FOR IMPACT

This self-paced course was designed by Indiana University and adapted for use by the Institute for Faculty Development at Vanguard University. This certification course is for anyone developing and/or teaching any courses here at Vanguard. Completion of the course with a score of 100% is required for certification.

START HERE

Last updated 5/1/2020

At the time of this writing, our institution, along with institutions around the world, are dealing with the impact of the global pandemic called Covid-19. Our schools, some more prepared than others, have just made it through a Spring semester that was seriously disrupted and pushed online in a hurried fashion, frustrating students, faculty, and administrators alike. We are now in the beginning of the Summer term and have more time to plan for the inevitability of reduced seat time at a minimum, and the potential of another online semester for most institutional courses. Vanguard University is now in the middle of transitioning as many of our courses as possible to Hyflex to maximize flexibility for students, faculty, and administrators. Once built, these courses can be used as true Hyflex courses where students have the choice from week to week/session to session to attend online or on campus, or they can be used by faculty and administration to adjust how a course is delivered week by week as needed based on ever changing health and safety guidelines. We know we have a challenging road ahead of us, but we are confident that this approach has the best chance of significantly decreasing campus density, improving student and faculty satisfaction, maximizing overhead savings, and helping our institution be more student centered now and in the future, far beyond this current health crisis.

References

Bowen, William G. 2012. "The 'Cost Disease' in Higher Education: Is Technology the Answer?" Lectures presented at the Tanner Lectures on Human Values at Stanford University, Stanford, CA.

McCormick, A. C., Moore III, J. V., & Kuh, G. D. (2012). Working during college. Understanding the working college student: New research and its implications for policy and practice, 179.

Moe, T., and J. E. Chubb. 2009. Liberating learning: Technology, politics, and the future of American education. San Francisco: Josey Bass

Owens, J. A., Belon, K., & Moss, P. (2010). Impact of delaying school start time on adolescent sleep, mood, and behavior. *Archives of pediatrics & adolescent medicine*, 164(7), 608614.

Rhoads, D. D. (2020). *Traditional, Online or Both? A Comparative Study of University Student Learning and Satisfaction Between Traditional and Hyflex Delivery Modalities.* Dissertation Concordia University Irvine, 2020, 148; 27995688. Available online: https://edtechbooks.org/-Sdh

Smith, A (2016). Inside Higher Ed. Capacity problems plaguing colleges may be due to poor scheduling. (2016, October 18).

David Rhoads

Vanguard University

Dr. David Rhoads is currently serving as the Director of Teaching Excellence and Digital Pedagogy at Vanguard University in Costa Mesa, California and has been teaching in the areas of leadership and educational technology for nearly a decade. Dr. Rhoads holds an Ed.D. in Educational Leadership from Concordia University Irvine, M.A. in Teaching and Learning with Technology from Ashford University, and a B.A. in Human Development from San Diego Christian College. He enjoys helping faculty do what they do best by equipping them with solutions and best practices for their classroom. David has extensive experience in the area of online pedagogy and program development, non-traditional enrollment and support, instructional design, and educational technology. David's background, prior to working in Higher Education, included teaching at the High School level as well as 12 years of youth and young adult ministry. David is passionate about helping faculty maximize face to face and online learning opportunities so their students can gain the most benefit from their instruction. He believes that our goal as educators should be to facilitate learning is such a way that encourages and equips students to be passionate life-long learners.

A Modified Version of HyFlex

Piloting Remote Live Participation at Columbia University's School of Social Work

Elise Verdooner & Matthea Marquart

I. Introduction to Our Remote Live Participation (RLP) Course

At Columbia University's School of Social Work, we piloted a version of Hybrid-Flexible (HyFlex) courses, which we called Remote Live Participation (RLP). Just as HyFlex courses are "multi-modal courses which combine online and onground (classroom-based) students" (Beatty, 2019), CSSW's RLP courses entail teaching online and residential students simultaneously. The name RLP was chosen to emphasize that the online students would be expected to participate as actively as the residential students.

During CSSW's two-year pilot, all students needed to attend class live, as there was no asynchronous option to review the recording of class afterwards, unlike many HyFlex courses. For this pilot, we needed students to come to class in order to fully test RLP as a modality. If a student missed class, the absence was treated the same way that absences in residential courses were treated -- students could review the class slides and ask the instructional team questions about the content or borrow notes from a classmate. Live class sessions were recorded, however students were not provided access to the recordings except if an online student experienced technical issues that caused them to miss part of class; if that happened, they would be given access to view the recording. In the end, no students needed access to the recordings.

The authors taught a RLP course in Spring 2019 as part of this pilot. In this chapter we share our experiences, recommendations, lessons learned, and student feedback from this course.

II. Why Remote Live Participation at Columbia University's School of Social Work?

CSSW's Online Campus is growing (Figure 1). This growth presented a unique challenge in our third and fourth years around course offerings. During the spring semesters of 2018 and 2019, we wanted to give the online students in our management method area access to a larger number of course topics and instructors than they would have otherwise had in the early days of the Online Campus. This approach was inspired in part by the University of Arizona College of Education's approach to bringing distance students into their face-to-face classes (Griffith, 2017).
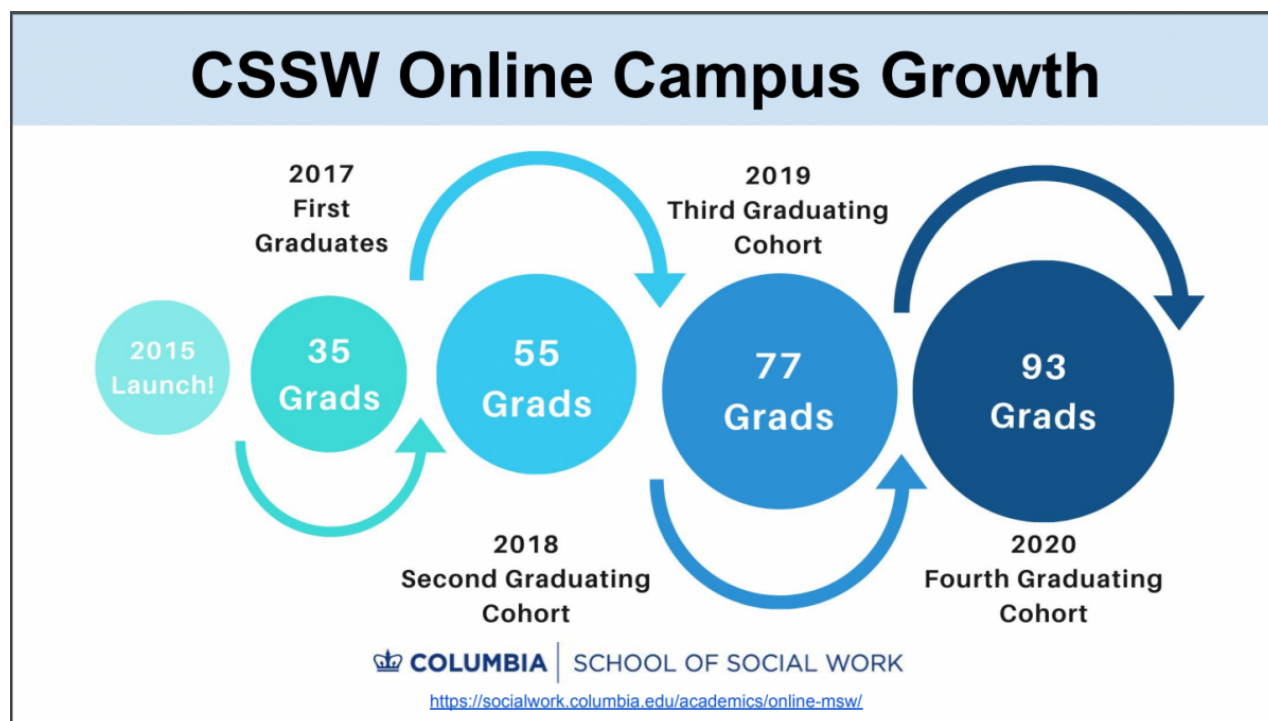
Figure 1: An illustration of the growth of CSSW's Online Campus (source: Báez et al, 2020)

These RLP courses were envisioned both as a short term solution to a unique problem during a period in which the Online Campus was growing and as an opportunity to learn about the logistics and possibilities of this type of modality. The lessons learned and results of the pilot will inform the School in considering whether to continue offering RLP as a modality in the longer term.

III. What RLP Looked Like for Our Course

During the spring semester of 2019, the authors taught a seven-week RLP course on Staff Development, Training, and Coaching. We built on the lessons learned from year one of CSSW's RLP pilot, including feedback from the students and another instructor involved in the pilot (Marquart, Englisher, Tokieda, & Telfair-Garcia, 2018a; Marquart, Englisher, Tokieda, Samuel, Standlee, & Telfair-Garcia, 2018; Marquart, Verdooner, Englisher, Standlee, & Samuel, n.d.).

Martin Englisher taught one of the 2018 pilot courses and provided feedback in these two videos (Marquart, Englisher, Tokieda, & Telfair-Garcia, 2018b):

- Video 1: https://youtu.be/gvOAK80qHG0 (1:10 min)
- Video 2: https://youtu.be/2S9jVaeMVyk (2:14 min)

The course included two online students logging into the classroom via Zoom and residential students attending in-person, meeting weekly for an hour and 50 minutes, with a 5 minute break in the middle. The teaching team included an instructor who presented the lecture and led in-class activities and a teaching associate who was responsible for the technology and online-student experience.

Throughout the course, students completed a combination of asynchronous and synchronous class activities. The asynchronous activities included weekly discussion forum assignments completed in Canvas, the learning management system used for this course, where students had the opportunity to engage deeply with their peers and the course content. During the synchronous class activities, we mixed students together for breakout groups and group presentations in order to fully engage and integrate the online and residential students. This sometimes involved grouping online and residential students together.

The classroom technology included a projector; two cameras, one in the front of the room and one in the back; ceiling microphones and speakers; a remote control clicker to move through the slides; and a teaching station at the front of the room to manage the equipment (Figure 2). In order to create the sense that the online students were integral members of the class, the online student's images were projected during class on the screen in the front of the room alongside the presentation slides. The associate sat at the front of the room with a laptop to manage the Zoom room and navigate the two cameras while the instructor moved around at the front of the room, positioning herself to see both the online and residential students. The School's IT department provided the associate with the laptop at the start of each class, and took it back at the end of class.

Figure 2: Classroom setup and relevant technology

The personal technology involved in running the class sessions included the instructor's personal mobile devices and the online students' devices (Table 1).

Role	Personal technology
Instructor	Tablet to lend to students for use during breakouts
	Mobile devices to lend to students for use during breakouts rather than requiring residential students to provide devices, which promoted equity. This also allowed the associate to log into the breakout groups ahead of time on the device.
Associate	None. The associate used the school's laptop to host the online Zoom meeting and monitor the chatbox, and the room's control panel to adjust the

	room's built-in cameras.
Residential students	None
Online students	Laptop/computer
	Headset with microphone
	Built-in or separate webcam
	Hardwired internet connection

Table 1: Technology used by the instructor, associate (TA), and students

IV. Logistics: Technical Set-Up

One of the primary considerations when planning for this course was how to use the technology to best facilitate engagement for both the online and residential students. Before the semester began, to ensure we understood the logistics of how to use the technology, we were trained by the School's IT department on how to use Zoom and the classroom technology, including the cameras, mics, and computer station. During the semester, to make sure that the technology was working each week, we conducted tech checks at the start of each class. These tech checks included testing the ceiling microphones, positioning the in-class cameras and preset camera angles, and setting up the Zoom room. To prepare for each class, at the start of the semester, the associate created the worksheet, Steps and Tips for Managing the Online Classroom in Zoom, which included pre-class setup (Figure 3) and instructions for managing the chat box and breakout groups during class (Figure 4).

Setup
1. Arrive in class 15 minutes early to set up the tech equipment.
2. The tech team will bring a laptop, cord to connect the laptop to the room, a mouse for the laptop (if you want it), and a portable microphone (if needed).
3. Matthea will open zoom and all the necessary desktop windows on the main computer. As she is doing this, open zoom on the laptop.
4. Log into zoom using account.
      User Name: ▇▇▇▇▇▇▇▇▇
      PW: ▇▇▇▇▇
5. Start meeting titled: T7126_005_2019 Staff Development, Training, and Coaching (meeting ID ▇▇▇▇▇▇)
6. Turn on the laptop camera using the video button on the bottom left of the zoom window.
7. The laptop mic should be muted and the desktop computer mic should not be muted.
8. Open the chat window to monitor throughout the class.
9. Once online students start arriving, check the microphones to see if they can hear you and you can hear them.
10. Check room camera using the monitor to the right on the desk.
11. Oscillate between camera 1 and 2 to make sure they are working.
12. Set your camera locations by holding down the "preset" buttons for roughly 10 seconds until the "saving..." message disappears.
13. You can continue to move the camera using the "Tilt/Pan Controls" and "Zoom" features.

Figure 3: Steps and Tips for Managing the Online Classroom in Zoom pre-class setup instructions

During class
1. Monitor chat
2. Notify Matthea if online students have a question and she doesn't see the hand raised or if they ask it into the chat.
3. Move the camera so that the online students can see who is speaking

Note: Matthea will control the slides using the remote

Chat box
The default is set to messaging everyone; however, you can private message someone by clicking on the tab titled "everyone" and then selecting the person you want to speak with. "Privately" will appear in red next to the chat comment of the person you're messaging with. Just remember to change it back to "everyone" once you're done.

Also, if someone private messages you, the chat will automatically change to private message them back. Once you're done with the individual conversation, change the chat back to "everyone."

Breakout groups
Depending on your screen view, you might have to click "More" to find the "Breakout Room" button option.
1. Select "Breakout Room"
2. Select at least two rooms (to pair the online students with residential students) and to check the box to "manually" assign
3. Log into zoom with the iPad (password ███) and another device
4. Manually assign students to rooms, adding the two in-class devices to breakout rooms with the online students
5. Hand the devices to residential students
6. Open the rooms

Note: Once you close the rooms, they will have 60 seconds left before they are removed from the room.

If anything comes up and you need tech support, use the phone in the room and dial 12345 and then menu option 2.

Figure 4: Steps and Tips for Managing the Online Classroom in Zoom in-class instructions

V. Logistics: Creating Community Agreements

In the first class of the semester, we created community agreements that would be used to guide and facilitate our time together in the classroom (Marquart & Verdooner, 2020). We wanted every student to be included when drafting the agreements and deciding to follow them in our class, so we structured this as a group discussion where everyone could contribute their ideas. We included a blank slide in the presentation, where the associate typed the proposed community agreements that the residential students shared out loud and the online students shared via mic or chat; the associate then edited the list based on the group discussion. The presentation was projected at the front of the room for the residential students, and the associate shared the screen in Zoom for the online students, so everyone could see the list of agreements evolving at the same time. Once the list was agreed on, we posted a screengrab in Canvas for students to reference throughout the semester (Figure 5). We revisited and recommitted to the community agreements at the start of class each week, allowing students to suggest updates each week.

Community Agreements (type here)

- One mic
- Don't yuck my yum
- Always end on time
- All ideas are welcome, no criticizing people for their ideas
- 5 minute break in the middle
- Active listening
- Feedback on ideas, not people; constructive
- Acknowledge different ways of learning
- Try to understand before responding

Figure 5: Screengrab from our community agreements

VI. Logistics: Breakout Group Discussions

To include and engage both online and residential students equitably, we intentionally paired online and residential students together during in-class activities (Figure 6). To do this, the instructor and associate logged onto Zoom using personal mobile devices, added the mobile devices to Zoom breakout rooms that included the online students, and asked the residential students to use the devices to talk with the online students. Using the instructor and associate devices saved time, and also promoted equity for any students who couldn't afford a mobile device or laptop. The instructions and discussion questions for the breakout activities were included in the class slides, which residential students could see projected in the physical classroom and online students could see in the learning management system, as Zoom didn't have an option to display instructions in breakout groups.
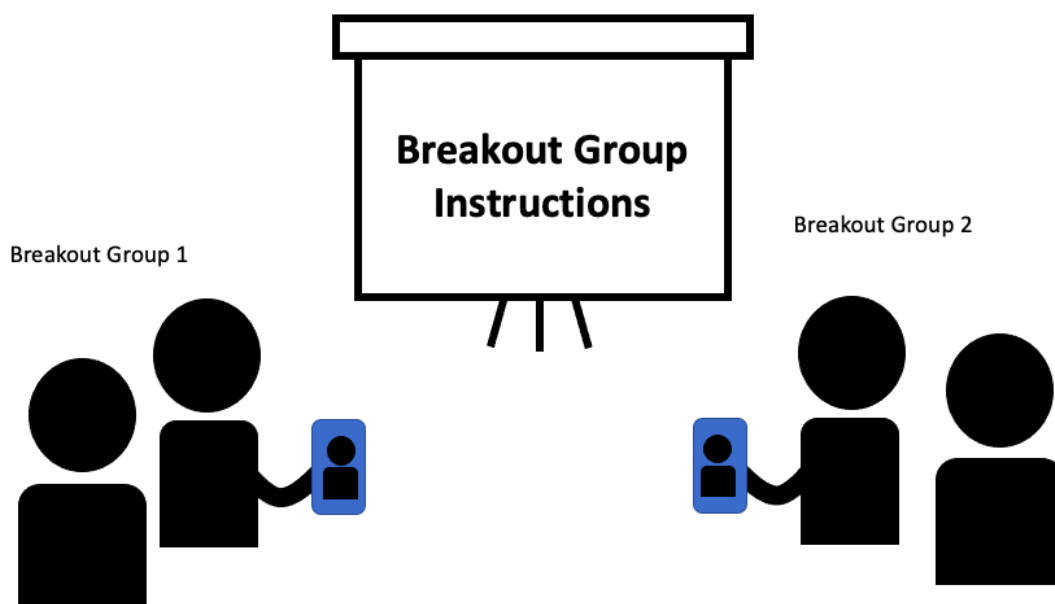
Figure 6: Diagram of how breakout groups were conducted, with groups that included a combination of in-person students and an online student joining via mobile device

VII. Logistics: Handouts During Class

To share in-class handouts with the online students, we uploaded the documents in Canvas prior to class each week so that the online students could download and/or print them ahead of time. We included a section each week that included materials from class (Figure 7). The handouts for students to download were labeled as "blank."

For handouts that needed to be turned in, we created an assignment page for online students to upload their responses (Figure 8). So that they didn't need to worry about uploading them during class and potentially missing part of the class while doing so, we gave online students the option of uploading a filled-out Word document, a scanned PDF, or a photo of a handwritten version by the end of the day. The assignment was worth 0 points in Canvas and graded as complete or incomplete for the online students as part of the participation grade; as it was only assigned to the online students, the residential students did not see this in Canvas.

Examples of class activities that required handouts included self-assessments on the course objectives during the first and last class sessions, short reflections at the end of each class session, and a longer reflection at the end of the course (Verdooner & Marquart, 2020).

Figure 7: Screengrab of an example of where online students could access the in-class materials in the Canvas course site

During class: Week 1 reflection

Online students: upload your week 1 reflection here by the end of the day. Uploading it will count as part of your class participation grade. You can upload a filled-out Word doc, a scanned-in PDF, or cell phone pics of a handwritten doc.

Residential students: you do not need to submit anything here because you will turn this in in person.

Points   0

Submitting   a file upload

Due	For	Available from	Until
Jan 23, 2019	SOCWT7126_D12_2019_1 - SOCIAL ENTERPRISE ADMIN	-	-

Figure 8: Screengrab of an example of instructions for how online students submitted in-class handouts in the Canvas course site

VIII. Logistics: Recording the Class Sessions

Everyone attending the class, both students and guest speakers, were required to sign a "remote live participation consent form." This form notified participants that the course would be recorded for quality assurance, future course development, and for review by online students if technical issues were to arise that caused them to miss part or all of class. The School did not prioritize sharing the recordings with all students because the focus of the pilot was on testing this modality. We were already asking residential students to participate in a pilot modality, and because residential courses are not usually recorded, we didn't want to burden the students with a further request. Students in the residential classroom were invited to sit in a "no film" section if they did not want to be on camera but were asked to acknowledge that their audio would still be recorded. None of the students opted to sit in the "no film" section, and based on our perceptions of student engagement, recording the class did not inhibit class participation. This consent form was shared with students in the form of a quiz on Canvas (Figures 9 and 10) and with guest speakers in the form of a PDF that was emailed by the associate for them to complete and return.

REMOTE LIVE PARTICIPATION COURSE CONSENT FORM

Quiz Type	Graded Survey
Points	0
Assignment Group	Pre Course Assignment
Shuffle Answers	No
Time Limit	No Time Limit
Multiple Attempts	No
View Responses	Always
Show Correct Answers	Immediately
One Question at a Time	No
Anonymous Submissions	No

Figure 9: Screengrab of RLP Recording Consent Form set up as a quiz in Canvas

The primary intent for courses with both residential and online students at the Columbia School of Social Work (CSSW) to be recorded are:

- For continuous quality assurance;
- For the development of courses in future years; and
- For review by enrolled online students participating in cases where technical issues arise.

The recordings, or edited versions of them, may be made available through the course web site and other platforms with limited access to faculty, curriculum developers, and students enrolled in the course for the term specified.

Students may elect not to take part in this recording project and still participate in the Course. I understand that I have the option of sitting in the "no film" section of the classroom or other course location, where I may participate in the Course discussion but will not be filmed. If I choose to sit or move outside the "no film" section of the classroom or other course location, I understand and agree that the Recordings may include my image, voice and name. I also understand and agree that, even if I sit in the "no film" section, my voice and spoken name may be picked up by microphones outside that section and may be included in the Recordings.

I agree that Columbia will own the Recordings and I hereby transfer to Columbia any rights, including copyrights, I may have in the Recordings. I will remain free to use and disseminate any ideas, remarks or other material that I may contribute to the Course discussion.

I acknowledge and agree that I will not be entitled to any payment, now or in the future, in connection with the Recordings. I agree to allow CSSW to video record this course in which you are a participant for the entire spring 2019 term for the purposes above and without limitation for general academic purposes.

As a student in this spring 2019 course, I consent that the video and/or audio recordings of my voice or image may be used by the CSSW and/or Columbia University for the purposes as described above.

Retention Policy: Unless otherwise requested, classroom recordings will be retained for **12 months** following the date of the final recording of the class.

I understand by **typing my name and date (Full Name, mm/dd/yyyy)** below and submitting this document electronically it is the legal equivalent of signing and dating the hard copy version. I also understand and agree that by typing my name and date below and submitting this document electronically I am affirming to the truth of the information contained therein.

Figure 10: Screengrab of RLP Recording Consent Form text in Canvas

IX. Logistics: Group Presentations

One required assignment was to complete a group presentation, and two of the groups included a mix of online and residential students. Students self-selected into groups of two to four based on presentation topics, and each group did a 10-20 minute presentation. To facilitate group collaboration, we asked everyone to list their email address when signing up for a group, and we uploaded the sign-ups to Canvas to share with the other members of the group. In some instances, without us prompting, students also listed their phone numbers to more easily connect with one another. To prepare their presentations, the groups chose how they wanted to meet, whether via web conferencing using their student Zoom or BigBlueButton account, phone, another preferred method, or asynchronously over email or Google Documents.

During the presentation, residential student presenters stood in the front of the room and the online presenters' webcams were visible alongside the slides on the projected screen. One of the residential students was given the remote control clicker to move through the slides, and the members of the group were responsible for planning how they would move through the presentation. This included planning how to address questions during the presentation because the online students couldn't clearly see whether hands were raised for questions or who raised their hands, as the webcam that showed the classroom was a bird's eye view with very small images of the people in the room.

X. Logistics: Guest Speakers

We invited three guest speakers to speak during our course, and gave them the choice to join class in-person or online. All three chose to join class via Zoom, which saved them from having to commute to campus and enabled them to more easily fit guest speaking into their busy schedules. This also potentially benefitted the online students who could

enjoy the dynamic of having the guest speakers with them in Zoom, as opposed to watching them via the classroom webcam. In order to give our speakers time to log on early and to test their technology without disrupting class, we had the speakers log into Zoom during our break halfway through class.

In preparation for our speakers to join class, the instructional team sent them an overview of what to expect on the day of their presentation. This email included a link to join the class, the tech requirements for speakers, a request to sign the media release form, some information about the course content and student interests, and guidance on how to prepare slides that aligned with our formatting. For example, we shared, "the students are in their final semester of their MSSWs. They're in the leadership & administration track, which means they're planning for careers as nonprofit leaders, human services leaders, consultants, HR, etc." For information on how to structure the slides so no content was covered by the Zoom videos, we shared, "we need a black bar on the right side as a place to put everyone's webcams so they don't cover up content on the slides. If you'd like to send us your slides on Tuesday, we can copy-paste them into the overall slide deck; if you'd like to send us your slides by Weds noon or so, we can show them separately." We also offered to meet with the speakers in Zoom prior to class if they wanted to try out the technology, but none of them took us up on this, as they all had experience with Zoom and felt comfortable with the technology.

XI. Feedback From the Students

We were lucky to have a group of students who were engaged in the course material and open to this pilot collaboration between online and residential students. Regarding feedback on this pilot course, the online students shared their appreciation via informal anecdotal feedback throughout the semester, whereas the residential students were neutral about the modality and expressed minor frustration when technology issues slowed down the class. The open-ended questions on the course evaluations did not include any feedback about the modality, either positive or negative. After the course ended, grades were submitted, and students had graduated, we asked a residential student and an online student to share their thoughts about the RLP course and advice for students and instructors considering this type of course (Table 2).

Questions	Online student feedback	Residential student feedback
What are your thoughts about your experience as a student in this RLP course?	Kristina Moore-Jager (CSSW '19): "Being a student from Alaska, I was curious about how this blended-format course would work and if participation in an online course would be as valuable. I was pleasantly surprised! It was really unique to be an online student but also to see the students in their physical space in the classroom. Having this level of accessibility, even from so far away, was encouraging. The content was relevant and the instructional team encouraged dialogue between the online students and the classroom students, it seemed like we all found it easy to navigate and valuable."	Samantha Arthur (CSSW '19): "As a student in this RLP course I was able to build relationships and collaborate with online campus students in a way I had not previously been able to. I enjoyed learning in a space that thoughtfully bridged the online and residential campuses together. I was able to engage with my peers via online discussion boards, in-class breakout groups, and presentations. It was clear that the instructional team made a concerted effort to ensure that students from both campuses had an enriching learning experience."

What advice do you have for future students and instructional teams in RLP courses?	Kristina Moore-Jager: "Just to embrace the experience! It's often new for most of the participants but if you keep an open mind, allow for any technical glitches that may need adapting to, and be ready to engage in different ways, you find it worthwhile."	Samantha Arthur: "I believe that for a RLP course to be an engaging experience the instructional team should consider the realities that exist for students in both campuses. This relates to necessary technology, how students participate in live sessions or course content, and possible barriers to engagement. My advice for future students is to make an effort to connect with the instructional team and be open to collaborate and build relationships with their peers."

Table 2: Feedback from online and residential students in year two of the RLP pilot

XII. Feedback From the Instructional Team

The authors also shared their feedback about this RLP course (Table 3).

Questions	Associate feedback	Instructor feedback
What are your thoughts about your experience as a member of the instructional team in this RLP course?	Elise Verdooner (CSSW '17): "Being part of the instructional team for this type of course can be incredibly rewarding, and I was grateful for the opportunity. It gives you the chance to interact with a diverse group of students from around the country (and possibly world) who bring thoughtful perspectives and experiences to group discussions. This experience gave me the opportunity to start thinking about what it means to meaningfully engage with others in both in-person and online settings which can be transferred beyond the classroom and into a workplace setting. In my full-time job, I used insights from this experience to design and implement an intern onboarding training that included both online and in-person components."	Matthea Marquart (CSSW '05): "I enjoyed the chance to pilot one of CSSW's first RLP courses and explore a new way to teach with technology. It was rewarding to do this in order to meet an identified student need, and it was fun to try things out and continuously improve. Having taught the course before made this manageable, as it would have been too time-consuming to also deal with new course prep. I greatly appreciated the team approach, as having a partner for the course was essential to be able to teach this way without splitting my attention between the course content and the technology, and Elise was an excellent partner. While it's common for colleagues to join in-office meetings via web conferencing, implementing interactive teaching and active learning is more complex and requires much more planning."

| What advice do you have for future students and instructional teams in RLP courses? | Elise Verdooner: "Mistakes and technology glitches are part of the experience -- be patient with yourself and be ready with a backup plan if necessary. At times it was difficult to follow along with the class lecture while simultaneously managing the cameras, online chat, and/or preparing for breakout rooms. The more streamlined you can make the process, the more attention can be given to the class discussion. In addition, don't let distance become a barrier when building relationships with online students. It was easy to stay and chat with residential students after class, but it was equally important to leave the Zoom room open and give online students the same opportunity to stay after and connect with the instructional team." | Matthea Marquart: "For our pilot, we spent a lot of time before and during the course thinking about the best ways to facilitate every activity and take maximum advantage of all the instructional time. For future students and instructional teams, I'd actually recommend the opposite, because otherwise this type of course can take up a disproportionate and demotivating amount of time -- simplify everything as much as possible, and be ready to change your class plan when inevitable technical glitches come up. I also recommend patience, a sense of humor, and a sense of curiosity or exploration about how to connect with colleagues differently and develop transferable professional skills in this modality." |

Table 3: Feedback from the instructional team for this course

XIII. Applying Our Lessons Learned to RLP-Style On-Campus Workshops and Events

While we hope that sharing our experience will be valuable for those planning potential future RLP or HyFlex courses, we also see the value of applying our lessons learned when planning on-campus workshops and events that include online students.

As an example, the authors presented a RLP-style professional development workshop for students who attended in-person and online, incorporating the online students in the interactive activities in ways similar to those implemented in our class sessions. Mirroring the associate's role during our class sessions, a designated virtual host for the event moderated the typed chat and managed the technology. Figure 11 shows the slide design, which included space reserved for webcams, so that the virtual participants could have a visual presence if they chose, without their webcams covering up workshop slide content.

For each of the activities, we planned specific instructions for the in-person and the online attendees, and we clearly communicated the virtual host's role in supporting the online attendees. For example, during the icebreaker activity, we asked in-person participants to respond out loud and online participants to respond on mic or via the typed chat, and the event's virtual host read responses from the chat out loud to the group. Because the workshop was only one hour, we did not mix online and in-person participants during the quick turn-and-talk activity.

We hope that our experience and lessons learned will encourage event planners to include remote students, alumni, and other community members in their on-campus events.
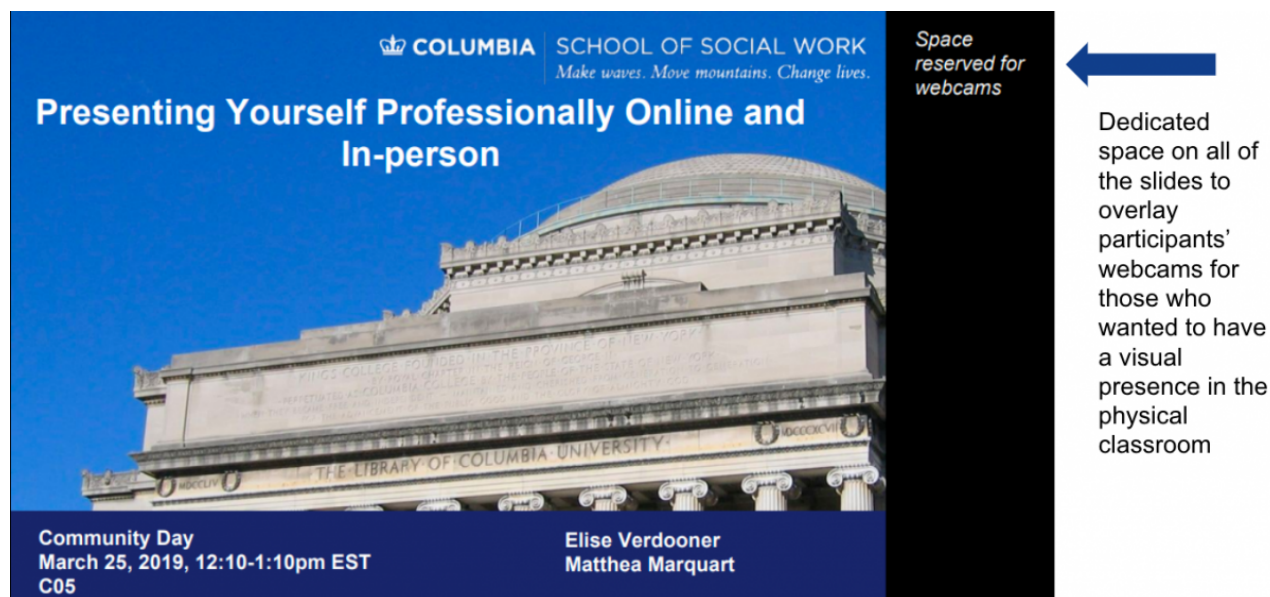
Figure 11: A slide from a RLP-style workshop (source: Verdooner & Marquart, 2019)

XIV. Applying Our Lessons Learned During the COVID-19 Pandemic

An unexpected benefit of this RLP pilot came when the COVID-19 pandemic required institutions of higher education to adjust our teaching in order to incorporate social distancing into residential classrooms and enable students to avoid coming to campus when feeling unwell. We didn't plan any RLP courses in response to the pandemic because we wanted to keep logistics simple during this time. However, it was helpful that our School had developed expertise in coming up with creative solutions to deal with technical challenges, and that we had the capacity to implement RLP if needed. We anticipate that this expertise and capacity will also be helpful as we transition back to campus when COVID-19 vaccines become readily available, particularly during the period when some students, staff, and faculty are vaccinated and ready to return to campus, and others are not yet ready.

The next time we implement an RLP course, we expect to make updates based on our experience with the pilot and also because of the pandemic. For example, during our pilot, online students enrolled in the course with the expectation that they would be on webcam throughout class. However, during the pandemic, expectations for student webcam presence have shifted in the direction of increased student choice, allowing students to decide when and for how long they are on webcam (Marquart & Russell, 2020). Students are also more comfortable with classes being recorded, and faculty are more comfortable with students watching class recordings instead of attending class in cases of emergency.

Acknowledgements

The authors are grateful to the online and residential students who participated in these pilots, the IT department, the Online Operations group, the Online Campus team, and Columbia University's School of Social Work. In addition, we would like to thank the following people: Alejandra Kennedy Love, Alexis Telfair-Garcia, Ana Angeles, Ann McCann Oakley, Carol Ellison, Craig Schwalbe, Eddie N. Cardona, Jackie Martinez, Joanne Standlee, Johanna Creswell Báez, Josephine Tatel, Katy Tokieda, Kita Lantman, Kristin Garay, Kristina Moore-Jager, Lacarnly A. Creech, Martin Englisher, Molly Hanessian, Rebecca Y. Chung, Samantha Arthur, Steven Schinke, Teis Jorgensen, and Valerie Samuel.

References

Báez, J. C., Marquart, M., and Chung, R. (2020, November 16). Training Online Social Work Educators: An Award-Winning Institute for Virtual Faculty. Virtual workshop for the Council on Social Work Education's Annual Program

Meeting. Online via ConferenceHarvester. Slides deposited in Columbia University's Academic Commons: https://edtechbooks.org/-vReu

Beatty, B. J. (2019). *Hybrid-Flexible Course Design (1st ed.)*. EdTech Books. https://edtechbooks.org/hyflex

Griffith, M. (2017, November 17). Fully Integrating Distance Students Into Traditional Face-To-Face Classes With A Low-Cost Telerobotics Platform. Workshop presented at the Online Learning Consortium Accelerate Conference, Orlando, FL.

Marquart, M., Englisher, M., Tokieda, K., Samuel, V., Standlee, J., and Telfair-Garcia, A. (2018, November 16). *Can online students be fully integrated into residential courses via web conferencing? Lessons learned from two pilot courses at Columbia University.* Workshop presented at the Online Learning Consortium Accelerate Conference, Orlando, FL, and also streamed for a simultaneous virtual audience via Sonic Foundry's Mediasite. Materials deposited in Columbia University's Academic Commons: https://edtechbooks.org/-XfLs

Marquart, M., Englisher, M., Tokieda, K., and Telfair-Garcia, A. (2018b, April 11). *Can online students fully participate in on-campus courses? Lessons learned from two pilot courses.* Workshop presented at the Social Work Distance Education Conference, San Antonio, TX. Slides, handouts, and videos deposited in Columbia University's Academic Commons: https://edtechbooks.org/-FyvR

Marquart, M., Englisher, M., Tokieda, K., and Telfair-Garcia, A. (2018a, February 22). *One class, two modes of participation: Fully integrating online students into residential classes via web conferencing.* Poster presented at the Columbia University Center for Teaching and Learning's Celebration of Teaching and Learning Symposium, New York, NY. Poster deposited in Columbia University's Academic Commons: https://edtechbooks.org/-MqgS

Marquart, M. & Russell, L.R. (2020, September 10). Dear Professors: Don't let student webcams trick you: Instructors who teach live online classes should thoughtfully consider whether to require students to use their webcams during class. *EDUCAUSE Transforming Higher Ed Blog*. https://edtechbooks.org/-eCNQ

Marquart, M. & Verdooner, E. (2020, September). Strategy: Co-creating Classroom Community Agreements. *Journal of Faculty Development, 34*(3). Special section on Pedagogy: Modifying Active Learning Strategies to Fit HyFlex/BlendFlex Instruction. https://edtechbooks.org/-raBE

Marquart, M., Verdooner, E., Englisher, M., Standlee, J., and Samuel, V. (n.d.). A hybrid approach to HyFlex teaching: Lessons learned from a two-year pilot with online and residential students [Manuscript submitted for publication].

Verdooner, E. and Marquart, M. (2019, March 25). *Presenting yourself professionally online and in-person*. Workshop presented at Columbia University School of Social Work's Community Day. New York, NY and online via Zoom. Slides deposited in Columbia University's Academic Commons: https://edtechbooks.org/-ZSwR

Verdooner, E. & Marquart, M. (2020, September). Strategy: End of Semester Reflection. *Journal of Faculty Development, 34*(3). Special section on Pedagogy: Modifying Active Learning Strategies to Fit HyFlex/BlendFlex Instruction. https://edtechbooks.org/-raBE

Elise Verdooner

Columbia University

Elise Verdooner, a Fulbright Scholar and returned Peace Corps volunteer, has worked in international development for eight years. She is the former Executive Director of TEEEM, a global nonprofit organization focused on health, education, and economic empowerment in Ethiopia, Kenya, Burkina Faso, Senegal, Cambodia, Mongolia, Slovakia, and Peru. She holds a master's degree in social work from Columbia University with a focus on social enterprise administration and international social work and a master's degree in global affairs from the University of Notre Dame. As a Fulbright Scholar in India, she is researching international social welfare, corporate social responsibility, and culture. Elise started as a Teaching Associate at Columbia University School of Social Work in 2019 before transitioning to Adjunct Faculty in 2022. As a youth development volunteer with the Peace Corps in Botswana, Elise worked on organizational capacity building, HIV prevention and outreach, and gender equality initiatives. Elise is a member of National Association of Social Workers' (NASW) New York City Chapter and the Immigration and Global Social Work Committee. She is a member of the Network for Social Work Management (NSWM) and was the 2019 recipient of the NSWM Mark Moses Distinguished Fellowship Award, which is presented annually to one exemplary practitioner or academic working in the field of social work management. She publishes and presents on topics of international development and teaching with technology.

Matthea Marquart

Columbia University School of Social Work

Matthea Marquart is a social worker, leader, educator, and online education expert. She is the Assistant Dean of Online Education at Columbia University's School of Social Work (CSSW), a Senior Lecturer teaching innovative courses, and the creator and co-facilitator of CSSW's Institute on Pedagogy and Technology for Online Courses. She began working with CSSW's Online Campus in 2014 during beta testing and launch preparation, helped launch the Online Campus in 2015, and has focused on collaborating on the online program's continuous improvement and growth since then. Her team's work with CSSW's Online Campus has won numerous awards, including from the International E-Learning Association, the University Professional and Continuing Education Association, the United States Distance Learning Association, and Chief Learning Officer Magazine. Matthea publishes and presents frequently, including over 125 invited and refereed talks, workshops, keynote speeches, and conference sessions about education, training, teaching with technology, and nonprofit management.

She is honored to have been recognized by the Council on Social Work Education's Women's Council as a Feminist Mentor, by the Network for Social Work Management with an Exemplar Award for exemplary performance and leadership as a social work executive leader, by the White House and Americorps with a President's Gold Volunteer Service Award in recognition of volunteer service to community and country, and by the NYC chapter of the National Association of Social Workers with an Emerald Leadership Award for 16-25 years of exemplary leadership and contributions to the Social Work profession. Matthea began working in education in 1997, and in online education in 2008. She holds a BA in English from Emory University and an MS in Social Work from Columbia University. She is passionate about student-centered teaching and learning, and can be reached on Twitter, on LinkedIn, or on her website.

Video Lab HyFlex: Practical Experiences of Courses with Practical Applications

Cabrini University

John Doyle

Editor's note: This case represents the COVID-19 pandemic-influenced HyFlex designs common at many institutions in 2020-2021. Some limitations on student flexibility were required due to public health concerns and university precautions. Yet, the faculty teaching the course found ways to support a substantial amount of flexibility while offering three distinct modes of participation weekly: in-person, online synchronous, and only asynchronous.

Introduction

In the fall of 2020, as a result of COVID restrictions, most of the courses on the campus of a small 3200 student Liberal Arts school in the US northeast moved from full face-to-face to online or HyFlex. Limitations on class occupancy numbers to assure social distancing made full in-class attendance impossible. Online versions of some courses had existed for years at the university but in Fall 2020, all courses had to move from a traditional face-to-face modality. This was particularly challenging for lab-based courses and courses that trained students on the use of equipment. The Digital Communication department's core video production class exposes students to a survey of videography techniques, production theory, and multimedia recording equipment. This course is hands-on and would not normally be online, but the university required it to either be fully online or HyFlex. The fully online modality would not be viable since there could be no interaction with the physical video studio space, a significant portion of the curriculum, and so I chose to run the class in HyFlex. Students could opt for one of three modalities. Some students, a limited number, could opt for in-person only. Some students, but again a limited number, could opt for online only. Either of those modality choices required some specific need (health status, family issues, transportation limitations). Most of the students alternated class days synchronously online and in class. Therefore, the class had students in three modalities simultaneously.

IT support from the university was substantial. IT installed a Logitech Rally remote-controlled camera at the rear of the classroom. The remote easily allowed me to follow my movement around the class or focus the camera on specific demonstrations. The audio from the condenser mic picked up sound well throughout the classroom and, although sending sound to the speakers, especially when playing video files, required some care on Zoom, the online cohort's voices could be clearly heard. These HyFlex classrooms were equipped quickly during the month of August 2020 into September 2020. There was little time for testing before classes began, but IT was consistently available for support.

Having taught full asynchronous online courses for 10 years with the Virtual High School, online course development pedagogy was ingrained in me. Balancing that pedagogy, face-to-face pedagogy, and the active three modality classroom rooted in a HyFlex structure was new.

Lab-Based Communications Instruction

The university's Digital Communications program has a series of video production classes all based in a hybrid lab/lecture format. Students learn a technique or technology and then are immediately exposed to that technique or technology through practical application during class activity. Exercises traditionally involved groups of students in rotation exploring the equipment individually and as part of a team led by the instructor or classroom coach. Demonstration and exercises allow for hands-on discovery of the equipment's function in a controlled environment with immediate access to instructor support. Equipment or technique demonstrations are done by the professor and a classroom coach using student volunteers. The course is also designed to teach video theory through practice. As a result, students work with equipment both during class, in a lab setting, and after class to become experienced with cameras, lighting, audio recording, editing, and studio production. The course is two hours and forty minutes long twice a week. Even with that much time per session, the course is fast-moving, introducing and practicing multiple skills in each session.

During the 2020-2021 school year, the two sections of this first-level course (COM 270) were filled by distinct groups. The fall semester included upperclassmen, primarily sophomores and juniors. The spring course was part of the university's first-year experience program and was the culminating class of the first-year Communications Department learning community. The students in that spring class were all freshmen, had been in three classes as a cohort during the Fall 2020 semester, and were taking their first lab-based communications course.

This HyFlex experience, occurring during the COVID pandemic, encountered some particular challenges that might not apply to a traditional HyFlex classroom, but the experience can shine a light on the specific difficulties and successes of HyFlex.

The HyFlex COM 270 Experience

Normally, the university uses Microsoft Teams and Blackboard Collaborate for online synchronous classrooms. The Communications Department provided a Zoom account which permitted the instructor to log in to a class with multiple accounts.

Students attended the class in person in a computer lab. We were allowed a maximum of 10 students in my HyFlex classroom in accordance with campus COVID protocols. My course had 18 students in the fall and 15 in the spring semester. There were two face-to-face-only students in the fall and four in the spring. Face-to-face-only students were always in the classroom. There were three online-only students in the fall and none in the spring.

The institution provided a classroom coach, an upperclassman who had success previously in the course. The coach acted as a support for students in lab-based courses. The role of the coach attends the class, runs workshops, and provides advice about projects and technology. This coach is not a teaching assistant, but rather a peer support for the students.

HyFlex/Hybrid students attended class in a hybrid A/B schedule splitting the HyFlex students into two groups which alternated face-to-face with the face-to-face-only students. The HyFlex cohort of 13 was split into a 6 student and 7 student alternating group. Being conscious of diversity in gender, class, race, and ethnicity was critical for building an equitable classroom rotation.

The COVID policies at the university permitted students not only to choose their mode of learning but permitted shifts in that modality throughout the term. Students changing modes caused breaks in the continuity of course material and instructional experiences as they reoriented themselves to the new modality. This was most significant when a student moved from in-class to HyFlex or online only. A Positive COVID test or exposure to COVID forced temporary modality changes as well. COVID-exposed or students who tested positive for the virus were removed from class for two weeks or until they tested negative, yet they still participated in the class fully online.

All assignments were submitted through the institution's LMS. There were no physical submissions both because of COVID protocols and for consistency among the three learning modalities. This required freshmen in the first level

course to quickly learn some of the complexities of the LMS.

HyFlex Pedagogy

The capacity of the Zoom web-conferencing application for breakout room workspaces and the ability to record lectures made a premium Zoom account the best option for this class. (I later posted the pertinent technical demonstrations to the LMS.) Using two Zoom log-ins, I was able to monitor the class with one log-in as well as present as an instructor using the other. Sometimes my classroom coach took on this monitoring role. Experiencing the class on the second account helped me see the class from a student perspective and avoid "walking out of shot." One account was logged in using an iPad, and at least once through my cell phone. The iPad permitted mobility; I carried it around the room freeing me to participate in class as an instructor or demonstrate a skill while keeping the online students in view. The main Zoom meeting was projected onto a screen at the front of the room, but the Zoom camera could be switched between my laptop webcam and the Logi Rally camera at the rear of the room. I could conference with students in breakout rooms or one on one without using the classroom's camera and speakers. Switching to the laptop camera permitted a more personal connection while working with students.

The core ideas introduced and explained during the class could be presented through online lectures and video demonstrations, but the practical portion of the class was more difficult to translate to the virtual world. Live demonstrations in the classroom needed reformatting for the online setting in two fashions. Fully edited, pre-produced demos were played during class and posted on the LMS. Also, live in-class demos permitted the traditional interplay of questions and answers. I used a dual demonstrator model, one presenting in the wide shot from the classroom camera and the other in close-up showing detail on a second Zoom account. This ensured that the at-home portion of the class could have a full experience of the equipment.

Adjusting the class required continual innovation and the restructuring of class time, out-of-class assignments, and deadlines.

Challenges in the HyFlex COM 270 Class
Access to Equipment

One of the greatest challenges of this HyFlex environment is equipment rental for in-class hands-on workshops. Students in the online-only setting or in the HyFlex alternating sessions had difficulty arranging rental of equipment to coincide with the class periods. The university equipment rentals were available during the week only. Normally, students can rent and return equipment any day of the week, which although flexible, still requires some planning on the part of students coming to a class with the equipment required. COVID restrictions altered the equipment room rental schedule. Students were required to have equipment for a 4-day rental from Tuesday to Friday. As a result, students in a Monday course had no access to equipment from the equipment room for class. Students in HyFlex and students in a Thursday class had to come on Tuesdays to get equipment even when they were not required to be there for their in-class session. Student placement in an A or B day HyFlex schedule impacted their ability to participate in the hands-on portions of a class period. Students who came without equipment did not have the full hands-on experience that is core to the course and did not acquire proficiency with equipment equal to their in-class counterparts. After a few weeks, I began to bring equipment from our departmental stock to use in class on Mondays so that all students fully encountered and could practice each technique or technology. Although a student could purchase equipment for themselves, it was not equitable to require that purchase. Low socioeconomic status students operated at a disadvantage in the classroom.

The COVID protocols restricted sharing equipment, requiring one device per student. All equipment had to be cleaned before being returned to the equipment room for distribution on Tuesdays. The cleaning task had to be completed by my classroom coach and me. The cleaning task was either completed during class time (removing us temporarily from the instructional role) or we spent additional time after class.

To alleviate some of the inequity with equipment access, I permitted the use of alternate video and audio recording devices including cell phones, Irig recording on cell phones, and some revision of assignments to remove the requirement of a lavalier mic. The use of cell phones was permitted for students who were online on any given day. Using the phone allowed the exploration of technique and theory even when equipment access was limited. The lesson could focus on skill development and application of theory without becoming lost in technical instruction. COM 270 has the responsibility to act as the training ground for equipment used throughout the remaining department communication courses. Instructing students on the use of the DSLR video equipment when students were fully online proved difficult and in some cases impossible, especially for students with special needs. This may have an impact on future video production classes in the department since these students may need additional training or retraining on equipment. Students will need these skills in required advanced courses, even if the core theory was understood in COM 270.

Access to Software and Computer Limitations

The Communication Department curriculum works to provide students with exposure and training in a variety of production software. This is introduced in the core Video Production course. Normally, students would have to access the editing software either by purchasing it or using our department labs. As part of the accommodations made for COVID, students in the Video Production course were provided Adobe Creative Suite.

Installing Software

When on campus, students used the institution's media labs to access the video production software. Students in the HyFlex rotations or online only had to install the editing software on their home computer or laptop. Troubleshooting these installations proved difficult. The quality of the individual student laptops varied greatly. Several students had old computers or were using outdated operating systems. Others had limited hard drive space. Some could not afford their own laptop. The lack of student computer fluency became apparent during these software installations; software function, software installation, and data storage.

Problems that normally would have been solved quickly in class required extra time during the class meeting for troubleshooting, breakout room troubleshooting; occasionally holding up class activities while the issue with online participants was resolved.

Managing Student Computers

Some students didn't know how to update their computer's operating system or even how hard drive space was allotted. (Managing hard drive space is crucial for video production since video files tend to be quite large.) The technical vocabulary associated with managing the computer system introduced a barrier to effective communication when troubleshooting. The normal student access to campus IT support was hampered by COVID protocols, increasing the need for instructors or classroom coaches to provide technical support.

University Information Technology and Resources (ITR) provided refurbished Mac laptops to a portion of the PC students to ease some of these issues. These loaner Macs provided an uncluttered laptop with adequate processing power and storage space to provide more equity in student access to the editing software. Students transitioning from Windows to the MAC OS struggled with the operating system change, adding an additional impediment to their learning.

One at-risk student reported that he had a laptop and was having difficulty installing the Adobe Creative Suite provided by the university. While the student was online, the specific issues of the install were difficult to clarify. In an individual help session (using Zoom), I discovered he was working on a Chromebook, which cannot run installed programs. There was no way for him to do the installation nor use the device as a laptop for the production class. His inability to describe the device he was using prevented the class from helping him, which disconnected him from others while online. Working with the ITR department, he was given a refurbished Mac laptop for the semester. The Chromebook's limitations set him back several weeks in the course. His cultural background made asking for help from the female classroom coach a challenge. The lack of clear, specific digital vocabulary, especially among the freshman in this

introductory course made troubleshooting challenging. The in-person troubleshooting allowed for clear keystroke vocabulary clarification. The addition of new troubleshooting protocols had become critical in the lab class in HyFlex.

Students had to either purchase or rent specific interfaces for the equipment (card readers and batteries). Students coming to class often struggled with equipment compatibility. This is especially the case with freshman and sophomores at the beginning of their path toward digital proficiency. The online-only or students online for HyFlex would often be unable to transfer data from their camera to their laptop.

Individual Zoom sessions with the classroom coach or myself were another solution.

Inconsistent Broadband Access

The inconsistency in broadband bandwidth for students created some roadblocks. The limited student home bandwidth caused some struggles with downloading large files for editing projects, sharing their final product for class review, and downloading the editing software. The uploads and downloads, especially in tandem with the Zoom call, would either cause the download to slow or even fail. Lost time from repeated download attempts stole valuable class time from students. For low socioeconomic status (SES) students or students in urban settings, bandwidth was a more significant issue, But even in the campus residences, depending on the time of day, internet access could be slow for the HyFlex students. This just meant that they often had to wait until their on-campus day to begin projects that required a substantial download. I worked to alter due dates for assignments to make the course grading equitable in the face of this technological struggle.

Download issues increased student frustration. Those slow downloads often resulted in damaged ZIP (compressed) files, which required another level of computer training for the students, especially the freshmen. Even when students were provided with links to the required video before the class session, several students would wait until an in-class day to download the content while on the campus network. They would often fall behind during class while waiting for the downloads. I offered lower resolution (smaller sized) files for the students as the semester progressed in order to ease the requirement for high bandwidth connection.

The class Zoom call was challenging for some of our low SES students. They were working from home with a slow connection or a shared family connection with limited bandwidth which disrupted their online status. This is a nationwide issue, not limited to this class or environment but has an impact on student understanding. Providing recordings of the class, or at least the instruction and demonstration portions of the class, gave those students a second chance to review material they missed when their connection failed or was constantly interrupted.

Studio Production

The most difficult portion of the HyFlex course was in studio production training. Video Production in the face-to-face modality included training in multicam studio production using student rotations through the various studio roles. The exercise was to take a single camera pre-produced "instructional video" and replicate it in the studio environment. Each rotation had a student director who translated the script and shots from the editing final cut of the single-camera shoot to a live in-studio production. We only used three model students' work and so the online cadre was able to see value for their eventual turn in the rotation by reflecting on their classmates' choices. The repetition of the same three instructional activities assured that I could provide feedback that supported the next student's project. COVID protocols for the video studio limited the in-class groups from exceeding the number of students needed for each role. The procedures of the normal studio rotations were disrupted when even one student was absent.

Less Observational Learning Opportunity

In a traditional classroom modality, a student in the studio, while not in rotation, would watch students in their assigned roles (camera, floor manager, talent, audio, etc.), gaining context for their eventual participation in the rotations (observational learning). Students online lost this learning opportunity because of the visual distance created by the classroom or laptop cameras and their limited control over their view of the activities in the studio. Online students could not look around and take in what was happening at each station. The limited student agency in controlling their

view lessened awareness of the function of the equipment or the responsibilities of each studio role. They could not actively choose what they wanted to learn, and that lack of agency increased online student passivity in the studio lab session. When the online students arrived for their in-class day, they were often starting from scratch or at least with a deficient experience from the observed hands-on work of others, compared to in-class students.

To alleviate some of these issues, we set up multiple laptops to provide several views of the environment: one pointed at talent and cameras, one on the switcher team, one on camera control only. This gave the students the ability to switch views in Zoom to one of the preset webcam views in the studio. Although this did not replicate the intimacy and immediacy of the in-studio encounters, it did provide some agency. Asking online students to choose a role and note questions or observations added accountability and engaged the online cadre.

Distracted Online Synchronous Students

A student with their camera off could easily avoid engaging since the full in-class focus was on producing the in-studio segments. Those studio exercises required the complete attention of the in-class cohort, the instructor, and the classroom coach. On those days, online students were prone to disengage or take shortcuts in their classroom experience. Some students attended class while working at a retail counter, working out, or making a meal in the kitchen. The lack of physical engagement in the lab sessions made students feel some sections of class were less valuable and so would alter their focus away from lessons toward these other activities. The studio sessions made some students prefer the in-class experience and requested a change to face-to-face if only to help them stay motivated to learn.

Engaging Online Synchronous Students

I also tried to find roles for online students in the rotations. Online students could call directorial cues with only a little struggle with Zoom lag, but their ability to operate the studio cameras, manage the sound board, and act as Technical Director was compromised. With a laptop camera pointed at the switcher monitors, the online student could run the session. The classroom coach carried the laptop from rotation station to rotation station so the online director could explain shots and give instruction. The coach was able to support the online student and mentor them at each station. Once production started, we integrated the laptop into the headset system and the production could proceed with the floor manager, as usual, acting as the directorial voice in the studio.

Students in a hybrid alternating structure, no matter how successful our in-class work on an A or B group day, still gained only a portion of the intended real experience needed to develop video production skills.

Unintended Positive Learning Outcomes

One fascinating benefit of the three-modality option was that the in-class-only group became mentors to the rotating HyFlex groups because their expertise in the studio activity increased through repetition. In-class students modeled to the groups that arrived on either HyFlex day. One student, who struggled because of his lack of engagement when online had the support of another in-class student who both brought him up to speed and inspired him to do his best. These mentoring in-class students helped me spend more time with the online cadre, pointing out critical lessons from each in-studio session.

On one occasion our access in the classroom mic failed and we opened participation for the online learners through chat only while they worked on an editing project. The communication for those online learners *significantly increased* during the class period. Chat became a potent tool to get questions from the online cohort.

Students working online with limited bandwidth more often functioned well in student-to-student interactions whereas high bandwidth access normally resulted in more interaction with instructor-based material. (Banerjee, 2020) Student behavior mimicked those results as students felt more comfortable using text to communicate when their connection at home could not handle the requirements of the course. Using chat to redirect students via private message was also successful. Students who were either notably off task or seemingly disengaged with the camera off, were targets of private chat encouragement and check-ins. In a demonstration or lab setting when the instructor was engaged fully in an activity, chatting proved difficult. The classroom coach became a critical part of the solution, either taking on

demonstration roles or dealing with the off-task reminders in private chat. Using the secondary Zoom account on the iPad or the classroom coach's account for private communication meant those private chats were not displayed on the screen in front of the classroom.

Collaborative Assignments

Many assignments in Video Production require students to work in teams with a student responsible to act in a variety of roles focused on camera, sound, light, and talent grouping. Online students worked alone. One of the most significant adjustments I had to make was in relationship to the students online alone during small group equipment explorations. Recording boom mic tests or lavalier mic tests required a team structure: one student to operate the recorder, one to hold the boom, and one as talent. The students in the classroom were able to have classmates act as talent when performing camera motion projects and interview recordings. The students at home had to recruit family members into being their talent (video subjects). This functioned fine in a practical sense but often the cooperation and commitment of the home talent was minimal and as a result, online students' exploration of the skills was compromised.

Adjustments for Online Students

Supporting the online cohort required two adjustments. First, we made an effort to have online students participate in decision-making during the skill explorations through breakout rooms with these in-class teams. We also reproduced the same exercise on alternating days with the portion of the class that was hybrid. Monday would be the main day for the exploration and online students would participate without getting a hands-on opportunity and then on Wednesday the hybrid students who had been online on Monday formed a small practice group. Had there been no in-class only cadre and a balanced A and B group, alternating the lessons would have been a solution. Having an in-class-only cohort required this more flexible structure.

Three Types of Learning

The students' capacity to choose from one of three modalities created a classroom cohort with a significantly larger number of modal experiences and even a more diverse individual student experience. Tracking the needs of individual students and the level of student understanding required significantly more formative assessment. A student who is not in class on any given day may miss subtle cues about lab work or may misunderstand instructions.

The physically disconnected nature of the online student resulted in a distancing from the muscle memory and material understanding of specific technology. Students who were all online struggled with even the simplest technology including Zoom recorders and Canon DLSR cameras set on automatic. Even with a classroom coach giving close-up views of the technological devices during lecture and demonstration, online-only or students who were online during a lecture day struggled with their technological skill development. I provide one-on-one opportunities during office hours to support those online-only students as they explored the equipment.

Limited Access Devices

One of the most significant issues with the HyFlex structure was the student's choice to access class using a cell phone. Lack of home internet access led some students to choose to use cell phones for access to the class. This severely limited their ability to see demonstrations and to participate effectively in class.

Students in the online synchronous setting were often barraged by distractions, especially if they were attending through their cell phones. Depending on the environment where they engaged in the online session, students also encountered distractions, pets, television, and family members in their "home classroom." In the multi-modal in-class setting, this placed the students at different levels of understanding, HyFlex/hybrid students at one place, in-class only students at another, and all online at another, which became more extreme as the weeks passed. Making a conscious effort to continually check in with the online students, either through call-outs or formative assessments, alleviated some of these challenges.

The remedy for most of these technological issues was being proactive as an instructor. My lectures were designed to reduce potential confusion as well as provide basic instruction. Anticipating questions was critical to building a

comprehensive lecture. This assured that the language, the vocabulary of our work, and the specific technology we use were clear for all students as they attempted labs.

Providing Feedback

The process of offering feedback in the classroom during the aesthetic component of the course had to alter substantially. The traditional technique for providing feedback to students in lab activities is for the instructor or coach to informally walk around the classroom to review work, provide suggestions, and catch errors early in a lab or exploration. This technique was not possible with the online students. Informal, mentoring style feedback for online students had to become more intentional. If a student online was off prompt during an exploration activity, they might not discover the error until deep into an assignment, requiring substantive revision and wasting time. This was discouraging to the students. In order to prevent early mistakes from being compounded when not corrected right away, I broke labs into smaller chunks to allow opportunities for questions earlier in the lab session. Individual lab chunks were graded which, in a pre-COVID traditional classroom, would have been in-class lab-based ungraded checkpoints.

A specific example of this was the use of the cell phone as a vertical recording device which hindered students in learning proper video framing. The online students might work for a while until the framing error was discovered. I could see the in-class student errors immediately. As the term progressed the role of formative assessment was reevaluated, I began to ask for test images or recordings via email to assure they were using their camera/phone correctly.

Students also worked in hybrid breakout rooms so that they could informally discuss concerns and questions with their peers or with the classroom coach or myself.

Students had to intentionally share their screen with me so that I could evaluate their learning and it was impossible to examine the physical interaction between the student and their technology and their interaction with their own laptop. I relied on student descriptions of their actions to troubleshoot and advise them. I had to train my classroom coach in this alternate formative assessment pedagogical approach to feedback and mentoring.

To support the online and hybrid students, I instituted additional feedback opportunities.

Students provided their peers' feedback in online blogs asynchronously. The blog comments functioned adequately for the students to revise their work. Creating clear prompts for their blog comments increased the efficacy of the peer review.

My classroom coach and I had to be proactive in demonstrating appropriate feedback. As we watched students work together during class, we shared our feedback and contextualized our comments in terms of the peer reviews. Some of the blog feedback became supportive or encouraging rather than focused on increasing the quality of the student's work. In a classroom with live feedback, the students' shallow critiques could be challenged by other students or the professor. Small group feedback in Zoom breakout rooms was successful but required monitoring. Breakout feedback sessions provided more immediate commentary but without the whole class exploration of feedback, the comments shared in those breakout rooms were inconsistent in their efficacy.

There were increased efforts throughout the terms to critique synchronously. This was done with an online form each student filled out during the class, permitting me to review the comments and share those comments with students in real-time and also provide feedback on the quality of the peer review with the entire class.

I used VideoAnt (https://ant.umn.edu/) to provide feedback locked to time code on the videos. Students uploaded their video work to a class YouTube account and then I shared the feedback using the VideoAnt system, which permits text feedback to be attached to markers placed in the video. While the student watches their video, the feedback is highlighted on the right side of the screen. (See Figure 1.)

Figure 1. VideoAnt Interface
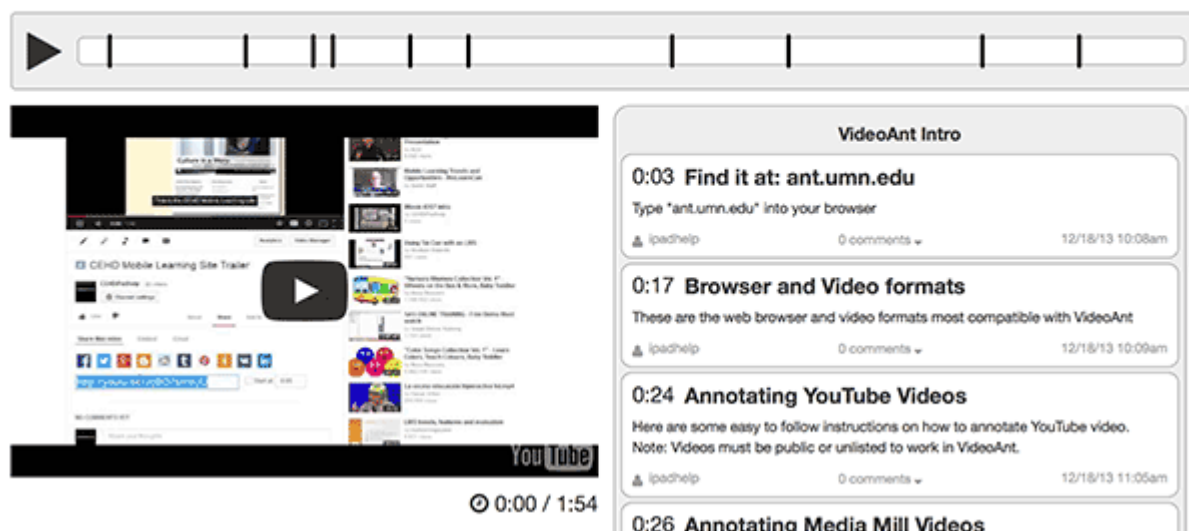
To create a more personal feedback relationship, I also recorded video Screencast-o-matic (https://screencast-o-matic.com/) recordings of my feedback as I watched their videos. The oral versions screen recorded, permitted me to demonstrate proper feedback behaviors and was more conversational, supporting the building of relationships with the students. Coupling the screen recorded feedback with the VideoAnt feedback successfully increased the quality of student work, although the development of feedback and skills in students was more limited than in a traditional face-to-face classroom.

Conclusion

Lab-based or exploration-based classes where students are learning skills and technologies have unique challenges in HyFlex. These challenges can be exacerbated by environmental factors like bandwidth, student access to technology and support, health protocols, and video conferencing applications. Shifting a traditionally in-person experiential course to HyFlex required significant adjustment in student engagement and mentoring. The normal informal, instructional encounters must be made more intentional, and significant care should be taken in providing feedback in multiple modalities.

Creating a classroom community where each student was accountable for every other student's experience helped students overcome the potential isolation the HyFlex switching caused. Student accountability and student engagement must be handled with consistency and care to assure the class understands the purpose of activities and the value of full engagement.

HyFlex in a lab-based entry-level video course provided us a new perspective on the underlying challenges of the multimodal classroom while providing an opportunity to evaluate traditional pedagogy and traditional classroom expectations and re-imagine the course in practice.

References

Banerjee, M. (2020). An exploratory study of online equity: Differential levels of technological access and technology efficacy among underserved and underrepresented student populations in higher education. *Interdisciplinary Journal of E-Skills and Lifelong Learning, 16*, 1-121.

John Doyle

Cabrini University

John Doyle is an Assistant Professor of Video Production at Cabrini University teaching Video Production, Advanced Editing, Short Documentary Film, Short Narrative Film, and Multimedia Storytelling. John has been producing video for 40 years. He acts as the videographer for the Montgomery County Commissioners as well as a variety of non-profit organizations in the Montgomery County region including the Municipality of Norristown and the NAACP. He has been the producer of The Hank Cisco Show, a regional cable program for 19 years. John has taught at Delaware County Community College, Wilma Theatre, and Drexel University. He has been employed by the Norristown Area School District since 1992 as an English, Gifted and Talented, and Philosophy teacher, There he initiated and coordinated the district's online learning until 2015 and was the Director of the Communication Center responsible for video production for the district and the management of five YouTube Channels producing up to 300 programs per year. He was an instructor for VHS learning. He has been a member of the district's Cultural Proficiency Team, founded the Black Student Union, and advised the Gay Straight Alliance. John has been producing theatre in the Philadelphia region since 1987. He is the Artistic Director of Iron Age Theatre founded in 1992 and has directed for or collaborated with Plays and Players, South Camden Theatre, Passage Theatre, Theatre in the X, Revamp, Luna Theatre and Hedgerow, Play, Pie and a Pint, One Minute Play Festival, Flying Quilt Productions, and the Philadelphia Dramatists Center. He directed the Internationally touring production of Howard Zinn's Marx in Soho and shepherded more than 20 new plays to the stage including one-man social justice plays about Fred Hampton, Thomas Paine, Emma Goldman, and The Triangle Shirtwaist Factory Fire. He has produced an annual Juneteenth theatrical event since 2010. His work has been featured in The Theatre Journal and Black Renaissance Noire. Currently working in a digital video arena, John is developing a variety of hyper local news, information, and entertainment distribution techniques. John is the Co-host of "The Racking Focus Podcast" a weekly film review podcast. He is a founding member of Walla Fest, a regional indie music and arts festival, and the Independent Voices Festival. He has presented a TedX Talk. John Graduated from Cabrini in 1985 with a Bachelor's Degree in History, English, and Communications and received a Master of Arts Degree from Villanova University in Theatre and Film. He has completed the certification program in Secondary Education at Cabrini University.

This content is provided to you freely by EdTech Books.

Access it online or download it at https://edtechbooks.org/hyflex/practical_experience.

One University's Hybrid-Flexible 'Studyflex' Course Experience in Melbourne, Australia

Lessons Learned and Further Opportunities and Challenges in the Wake of COVID19

John Bevacqua, Meg Colasante, & Swapna Verma

I – Introduction

This Chapter sets out the experience in a university in Australia, where five subjects were designed in a flexible hybrid format. Here the students were encouraged to navigate and create their own unique hybrid learning pathway via online or on-campus mode and to alternate between various combinations of the two. In essence, the curriculum model, conceptualised and deployed using educational design research and originally titled "StudyFlex", allowed students to self-determine their own bespoke hybrid journey, rather than the educator pre-determining a singular hybrid learning pathway through the subject. This central characteristic distinguished StudyFlex from most other hybrid or blended learning models deployed at that time in our local contexts.

The Chapter goes further, however, building upon the StudyFlex trial and the insights gained from participating educators, their students and online analytics derived from testing in contrasting contexts as part of that trial (Colasante, Bevacqua & Muir, 2020). Specifically, the discussion extends to identifying new and contemporary opportunities and challenges posed by "Hybrid-Flexible" (HyFlex) models like StudyFlex, including structural, socio-cultural, demographic and discipline-specific issues propelled to prominence by the COVID-19 pandemic and their impact upon student satisfaction and student performance. The work is timely given that many universities have provided students with various hybrid delivery options in order to accommodate pandemic public health restrictions. Early signs are that there will be significant post-pandemic demand for high quality hybrid delivery. The ultimate contention of the Chapter, therefore, is that there is a pressing need to continue to research, test and refine the implications of HyFlex initiatives like StudyFlex for students and their educators.

II – Why StudyFlex?

The genesis of the StudyFlex model was a series of discussions at La Trobe University in Melbourne, Australia in early 2018 on the feasibility of developing a single subject instance where students could self-select an on-campus or online mode of study from week to week or topic to topic, thus creating their own unique study blend or hybrid learning experience. Specifically, the aim was to design and administer a single offering which would allow enrolled online students the opportunity to intermittently switch between face-to-face and online learning experiences at various bespoke intervals. In essence, the goal was to find a way to move beyond a predetermined hard line between online and on-campus study, re-imagining university study as a "no-line" experience (Bevacqua & Colasante, 2018; 2019). A key

driver of this goal was the desire to maximise study flexibility for students without unnecessarily duplicating subject offerings to accommodate different study preferences – in particular, to accommodate the full spectrum of students, from those wishing to study fully online (and predominantly asynchronously) through to those wishing to engage predominantly on-campus. Traditional pre-determined "blended" offerings were incapable of accommodating this breadth of student flexibility whilst providing all students with an equivalent high-quality learning experience.

III – What is StudyFlex?

From the starting points outlined above, the StudyFlex pilot team settled upon a simple working definition:

> *In a StudyFlex offering, all students are enrolled in a single subject or course offering. Once enrolled, students will be able to choose from week to week or topic to topic how they wish to study. They can choose to complete either completely online, or supplement online activities with a degree of on-campus activity that suits them. Students can modify their choices on short notice. (Bevacqua & Colasante, 2018)*

In essence, students determined their own form of "hybrid" learning experience, rather than the university offering a pre-determined blend or teacher-led hybrid for all students.

While the StudyFlex model sits within the HyFlex family of approaches, it is arguably not the most common approach. Well-documented HyFlex models offer multimodal options that often coalesce around on-campus events capable of catering for both face-to-face and synchronous online participation, and typically supplemented with asynchronous access to recordings to accommodate other learners (Beatty, 2019). These models allow students to construct their own customised learning experience by participating in different ways from event to event. However, StudyFlex was fundamentally designed to transfer increased control to the students to accommodate (and encourage) their own bespoke learning pathways where primacy was not afforded to any particular on-campus event, study modality or pathway. This approach leans more toward HyFlex variations that offer on-campus and equivalent asynchronous online options. As such, the primary asynchronous online alternative learning option for each week or topic in StudyFlex was a structured stand-alone alternative to attending an on-campus event.

The core guiding design principles for StudyFlex can be reduced to addressing two key matters – (1) facilitating equivalent learning experiences for all students irrespective of their chosen hybrid learning pathway; and (2) maximising student choice and accommodating the broadest possible range of student learning mode preferences and hybrid learning pathways.

Equivalence for All Students: At its core, the StudyFlex pilot subjects comprised a "spine" or core online component that all students completed and used as their overall guidance across the semester, and a series of clear choice-points where students could create personalised learning pathways by choosing either an on-campus or online option of equivalent standard. That is, at each choice-point across a 12-week semester subject, all corresponding learning and assessment activities were designed to be equivalent in terms of intended learning objectives, quality, and workload effort required.

Maximum Student Choice and Suitability: All StudyFlex offerings were designed to accommodate the study mode preferences of the broadest possible range of students and potential learning pathways. Hence StudyFlex offerings necessarily included both online and on-campus learning experiences, with students having the option to complete the subject completely online or via a personalised hybrid pathway of their choice combining online and on-campus learning activities. Consequently, the pilot StudyFlex offerings did not include any compulsory on-campus attendance requirements. Reciprocally, they all also included some on campus activities for those willing and able to participate in those activities.

A key characteristic of the core design itself was a central online spine in the learning management system (LMS) as illustrated in the following diagram (Figure 1). This central spine or nucleus consisted of a singular online subject portal containing all the navigational supports and resources for all students. These supports included subject orientation

materials, topic introductions, and directions to weekly instructions on navigating and choosing between on-campus and online experiences.

Figure 1. Core Design
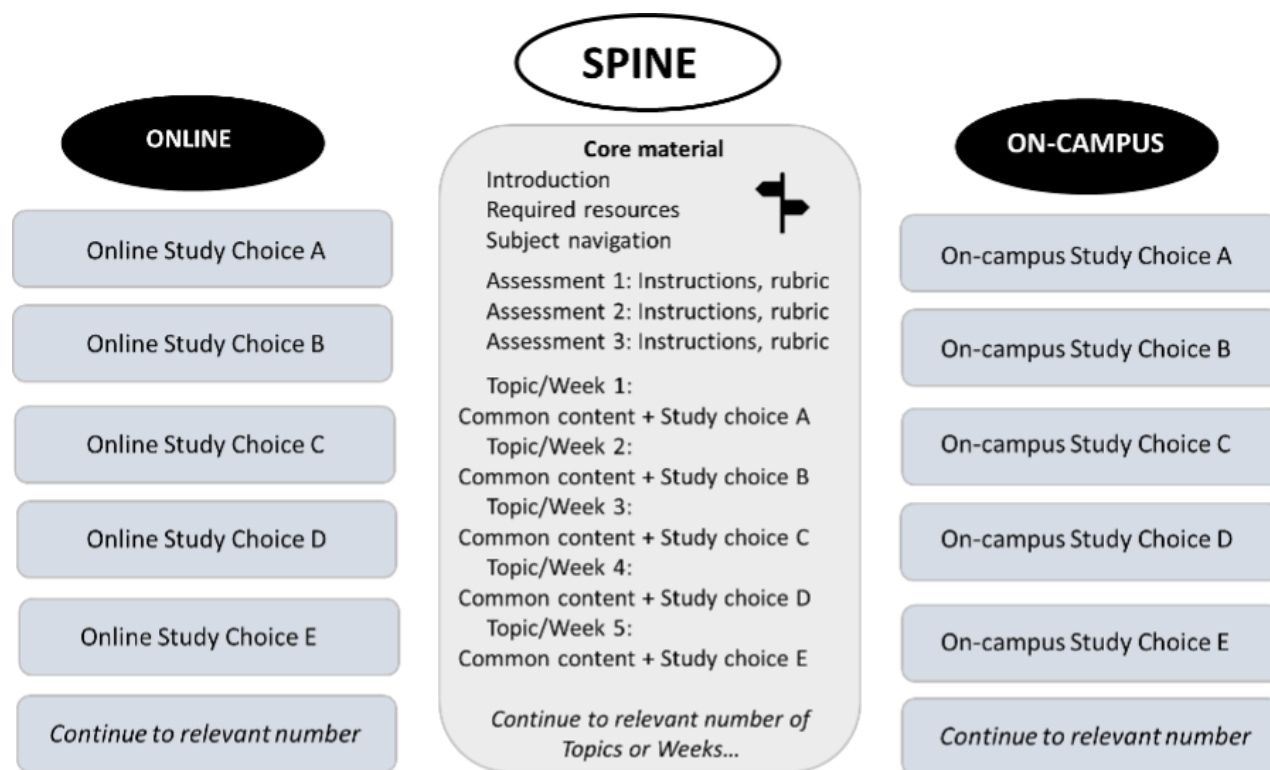
The arrows in Figure 2 below show an example of one student's possible hybrid learning pathway (indicating periodic switches between online and on-campus activities throughout the semester) in their StudyFlex subject:

Figure 2. Sample Student Hybrid Learning Pathway

Core material, online for all students (e.g. topic introductions, readings, assessment rubrics, mode options)

Each week, resources and activities available entirely **ONLINE** (mainly asynchronous)

1 2 3 4 5 6 7 8 9 10 11 12

Each week lecture/s and tutorial/s (or workshop/s) available **ON-CAMPUS** (synchronous)

1 2 3 4 5 6 7 8 9 10 11 12

Example of one student's bespoke hybrid journey across a subject ⟶

It is worth noting that the StudyFlex subjects align to the four Beatty (2010; 2019) values of HyFlex:

- "Learner Choice": students choose the mode of engagement that works for them - week to week or topic to topic
- "Equivalency" and "Reusability": there are no poor cousins between the modes, that is,
  - for Equivalency - despite mode chosen, they each provide students the opportunity for equivalent stand-alone learning outcomes (e.g. computer laboratory exercises offered as high fidelity online simulated exercises; collaborative development of strategic communications in group wiki format online or on-campus group poster development and each with structured intergroup peer review)
  - for Reusability - all content materials and resources can be accessed by all students irrespective of delivery mode (e.g. allowing students to compare or supplement their learning with equivalent activities; facilitating crossing of study mode boundaries in intergroup peer review activities).
- "Accessibility": universal accessibility design principles embedded intentionally and by default, (e.g. transcripts added to all content videos).

IV – How – The StudyFlex Trial

The StudyFlex trial involved redeveloping five university subjects as a proof of concept, with a view to potentially rolling out the model more broadly. The first tranche of subjects involved three postgraduate masters level subjects, including two computer science subjects and a health research subject (see Table 1). To further test the proof of concept, a further two subjects were also involved in prototype design experiments in the trial; a postgraduate humanities subject and an undergraduate health science subject (see Table 2).

Table 1: Flexible hybrid format for designed and delivered/taught subjects

Code	Subject	Discipline	Flexible hybrid format

BCC	Blockchain and Cryptocurrencies	Computer Sciences (postgraduate)	12-week, 12-topic semester: a) Sole LMS site: all core material; guided navigation to study choice points. b) On-campus 2-hour lecture and 2-hour IT lab each week, each of which had: c) Online equivalent options (at own time and pace within the week). All students were also offered a 2-day residential intensive practical session toward the end of the semester.
PEN	Penetration Testing Principles	Computer Sciences (postgraduate)	As for BCC above. *Plus*: the online equivalent options for laboratories involved support for setting up a virtual machine for online completion of PEN lab exercises.
QMH	Qualitative Methods in Health Research	Public Health (postgraduate)	10-week, 9-topic Winter intensive: a) Sole LMS site: all common material; guided navigation to study choice points. b) On-campus 10x two-hour intensive seminars. c) Online topics of 10x learning cycles with activities of an equivalent nature to the on-campus seminars. d) Common online discussion forum for all students, which intentionally extended beyond the structured topic period into assessment preparation time.

Table 2: **Prototype designs to test flexible hybrid model in other contexts (designed-only subjects)**

Code	Subject	Discipline	Design work for flexible hybrid format
STC	Strategic Communications	Humanities (postgraduate)	Prototype created for a 6-topic, 12-week semester: a) Sole LMS site: all common materials, activities, and guided navigation to study choice points. b) On-campus fortnightly optional attendance to scheduled 3-hour seminars (team/shared teaching), each of which had: c) Online equivalent options including social constructivist activities in each topic.

IAI	Infection and Immunity	Health Sciences (undergraduate)	Prototype design for a 4-part, 12-week semester: Design focussed on · restructuring 12 topics into 4 related themes (of 2-4 topics each), and: · conceiving how to transform associated science laboratory experiences into equivalent on-campus and online exercises, and how to incorporate this equitably to students enrolled at various campuses.

Building upon the common structure set out in Figure 1 above, all of the trial subject designs comprised several core common features. These included regular study choice points, incorporated to facilitate student self-determination of their choice of hybrid study pathway across the semester. Allied to this were detailed navigation guides through the learning materials and student supports for each mode. The subjects were designed to ensure any mode-switching was intentional rather than inadvertent. This was achieved by including clear signposting (icons and text) at each choice point, which allowed students to easily bypass materials that were not relevant to their chosen pathway. However, if desired, students could access all materials regardless of chosen mode.

The specific subject designs were customised to fit each subject's disciplinary context (summarized in previous Table 1). Accordingly, the two computer science subjects (BCC and PEN) were structurally quite similar to each other (both having a laboratory focus), but quite different to the public health subject (QMH) with its seminar focus. For the IT experiences required for PEN, a bespoke virtual machine was created to enable off-campus simulation of a variety of penetration testing online environments.

The additional prototype designs enabled testing the initiative with teachers in other disciplines to draw out further efficacy issues and design principles (summarized in previous Table 2). Hence the health science subject (IAI) catered for the complexity of science laboratory-based learning spaces in the model, the humanities subject (STC) catered for social constructive experiences such as group responses to a crisis scenario (on-campus poster or online wiki creation and peer review), and both subjects offered multi-week topic-based approaches rather than weekly structures.

V – Impact – StudyFlex Trial Data and Findings

The data collection approach from the StudyFlex trial have been set out in full elsewhere (Colasante et al., 2020) but the key features can be relatively concisely summarised. In terms of data collection, students from the three subjects taught in StudyFlex mode were invited to participate in an interview or complete an anonymous online survey. The survey asked students about their study choices in their subject, their preferences, suggestions, and whether they would recommend the model (n=19). The interviews offered deeper reflection opportunities on the same question themes, albeit had limited uptake (n=2). Almost all surveyed students (90%) and both interviewed students agreed the choice of study mode was (or was potentially) helpful for their learning. Each of the interviewed students and three quarters of the surveyed students recommended adopting this flexible approach in other subjects and/or extending this option to other students.

To supplement this data, analysis of anonymous student LMS access data was also undertaken. Each teacher involved in the trial also participated in an interview to discuss the design of their subject and to reflect on effectiveness, student attendance/participation, and suggested improvements (n=5). The teachers were all positive about the model, yet raised various challenges.

The data collected from the StudyFlex trial have had impact, both in terms of the insights into student and educator responses to the trial itself but also more broadly, in terms of implications and influence of those responses in shaping

the continuing hybrid learning research agendas of the authors. Key among these implications and influences are: (1) the significance and relevance of disciplinary context to successful hybrid delivery; (2) the need to embed support for students and staff in any hybrid-flexible learning initiative; (3) the need to accommodate complex and multi-faceted cohort socio-cultural and demographic factors; and (4) the need to be cognisant of significant structural and administrative challenges potentially affecting the viability and success of learning initiatives like StudyFlex.

The authors are engaged in preliminary work (at subsequent universities) to collect interview and survey data from students and staff concerning each of these issues to inform the design and development of a further and more-refined "StudyFlex2.0" trial in 2023. As such, the balance of this part of the chapter centres on discussing the StudyFlex trial findings (Colasante et al., 2020) with respect to each of the four key findings and influences set out above, and its implications for StudyFlex2.0 and a broader ongoing research agenda in this context.

Disciplinary Context

The results of the StudyFlex pilot highlighted that despite adhering to core values such as equivalence, hybrid-flexible teaching and learning models should be customised to the particular disciplinary context. Further, student responses to the opportunities afforded by hybrid learning may vary depending on the disciplinary context. One way this became evident was in disciplinary-specific variations evident upon analysis of the LMS participation data. For example, average views of online content showed that the highly technical nature of PEN attracted the highest range of students views of online content (15-37 views per student per week), followed by fellow computer science subject BCC (3-16), with comparatively low views recorded by the public health subject (QMH) students (approximately 4). This reflects the content-heavy nature of the two computer science subjects, especially PEN, compared to the process-oriented focus of the health research subject. This interesting insight suggests differences in student use of hybrid study choices depending on the disciplinary context.

As such, the authors are currently exploring avenues in StudyFlex2.0 to apply a new disciplinary-specific lens to test the viability and implications of applying hybrid-flexible learning models akin to StudyFlex. The chosen discipline is tax and business law. In part, this is due to the disciplinary teaching expertise and/or roles of members of the author team. However, this context also serendipitously allows for testing of the influence of a number of highly relevant disciplinary traits for potential impact on the successful design and implementation of hybrid learning. Key among these disciplinary traits are:

- learning volume and complexity (for which tax law in particular is infamous) – there is evidence to suggest that in online settings, in particular, excess volume can exacerbate perceptions of subject matter complexity more so than in face to face settings. It is unclear whether the same can be said of hybrid learning (the comparison of computer science versus public health data from the StudyFlex trial suggests this might not be the case);
- the accommodation of course or subject accreditation requirements which restrict the ability to modify subject content, delivery or assessment (for example, to remove the need for invigilated on-campus final examinations). These are common in legal and tax contexts in Australia and could significantly fetter the potential for hybrid models like StudyFlex which aim for maximum student-directed study-choices;
- fluidity and constantly-changing nature of the subject matter (another feature of tax and law in emerging or rapidly changing fields). This might have particular impact on the key hybrid design value of "reusability" and, consequently, the economics of applying hybrid delivery in such settings;
- applied versus theoretical applications – tax law teaching, for example, directly involves both (i.e. through the teaching of "black-letter" legal principles as well as tax calculation methodology). These features also have potential to raise challenges or opportunities in hybrid teaching settings. For example, it may be the case that hybrid learning options will be particularly more or less effective or desirable in one or other of these teaching applications.

It is not necessarily the case that one or more of these factors precludes the implementation of hybrid-flexible learning in this (or any other) disciplinary context. However, successful hybrid design may need to take these features into account – for example by limiting or directing more-or-less student-directed flexibility depending on the discipline-

specific curriculum features and requirements. For example, the curriculum for taxation law could be apportioned so that the calculations component of topics and/or topics which are not as comparatively enriched with technical concepts (such as tax administration and tax accounting) could be taught better online in either synchronous or asynchronous mode and topics which require the complexity of conceptual analysis could be better taught synchronously only in either online or on-campus mode (such as income versus capital distinction in various contexts). The current work of the authors aims to test these propositions.

Support for Staff and Students

It is apparent from the findings of the StudyFlex trial that hybrid-flexible models implemented without adequate support for both students and staff are less likely to be well-received or to succeed in meeting their full potential. In the case of students, hybrid offerings must be scaffolded with sufficient student support to enable them to navigate hybrid study choices and maximise benefits from hybrid learning. The StudyFlex teachers raised the need for support for students, including guiding them to understand how to navigate the new format. For example, one respondent lamented how some online students found difficulty navigating even basic LMS classes without the added "complexity of having to make these [study mode] choices". It was also noted that, beyond the navigation, not all students may grasp the "responsibility for the choices that they make", for example, how they best learn or how they can best take advantage of either or both modes; and that "there's some work to be done right at the start when people are introduced to this way, to support them making those choices and developing that reflective practice".

In the case of educators, hybrid models need to be designed with sufficient pedagogical support and reassurance in the form of professional development for those involved in flexible hybrid delivery to ensure they can do so effectively and efficiently. However further exploration is required to determine the form, nature and extent of the support required. Pertinently there is a further issue that warrants examination – to what extent the COVID-19 pandemic may have affected these matters (for reasons elaborated further in VI below).

Socio-Cultural and Cohort Demographic Factors

The success of any hybrid offering like StudyFlex hinges on an ability to cater for various socio-cultural influences on student study mode choice. For example, the StudyFlex trial revealed the significance of student work commitments, physical distance from campus, and life-load factors such as childcare commitments, illness and (changes in) lifestyle or personal circumstances affecting study plans.

During the trial, three general types of students emerged. Those whose decision-making was based on personal preference (e.g. prefer one mode or like the teacher); those who had some fundamentally inflexible reasons preventing on-campus participation (even if that formed their preference), such as location, work, or other responsibilities; and those students who unexpectedly used the flexible option as an online "back-up" when they otherwise preferred and intended to attend on-campus learning opportunities. Notwithstanding that some students labour under inflexible constructs that don't allow them to make a choice other than to study online, when asked to compare their original intentions with their actual study patterns, over one-third of student responses overall reported variations from their expectations to actuality. That is, they either made use of more online or more on-campus opportunities than they had intended. This trend approximately aligns to what Beatty (2014) reported on participation expectations for small-sized HyFlex classes.

However, much more work is required to determine the suitability of hybrid delivery models like StudyFlex for various cohorts. Key aspects which the authors are currently examining in StudyFlex2.0 are:

- The suitability, desirability and design of hybrid learning for international students – both for those studying on-shore and those studying off-shore by distance learning;
- The suitability and design of hybrid learning depending on the level of tertiary study experience of the student cohort. For example, hybrid learning may be more attractive to students later in their degrees (or undertaking postgraduate or part-time studies) compared to fresh secondary school graduates. The intuitive logic is that the former are more likely to be facing inflexible life-load commitments such as work or family than younger students. Conversely, school leavers are more likely to expect extra support which may or may not be able to be accommodated in a hybrid self-directed learning setting. While some of these issues have been examined in pure online learning settings, further study is required to determine whether these intuitively appealing conclusions apply with equal force (or at all) in hybrid learning settings.

Structural and Administrative Challenges

Whilst teachers involved in the StudyFlex trial were overwhelmingly positive about the model, they flagged various administrative difficulties in anticipating and sensibly managing on-campus attendance numbers. This included anticipated problems catering for unknown numbers of on-campus students, such as the science subjects requiring laboratory technicians to prepare equipment in advance. Even in a humanities context, the question was raised: "Is there a critical mass of students who need to say that they're coming along to a session before it will run?" Related concerns extended to teaching workload in flexible hybrid subjects. For example, the health research teacher said he felt a doubling of effort on being attentive to students in both modes, saying "even though I'm only teaching it as one subject, it really is like I'm teaching it twice".

These insights suggest a need for implementation of hybrid-flexible learning to be accompanied by contemporaneous data collection concerning student participation trends and preferences. Over time these trends can be refined to allow for better prediction of resourcing requirements to accommodate all students. The authors also aim to explore these propositions in greater detail in StudyFlex2.0 and other future work.

There are also potentially a range of more fundamental structural systemic issues which might hinder the full implementation or realisation of the potential benefits of hybrid learning in some contexts, for example where providing access to international students is concerned. Many of these structural and systemic limitations on student study mode flexibility have been recently tested as a result of the COVID-19 pandemic and are among a number of issues which will need to be addressed when implementing hybrid learning post-pandemic. Attention now turns to discussion of these issues.

VI - Beyond StudyFlex – Implementing Hybrid Learning in a post-COVID Era

Hybrid learning has increased in prominence due to the COVID-19 pandemic. The quarantining and other public health measures implemented worldwide to restrict physical contact and slow the transmission of the virus has compelled education providers to rapidly transition (albeit, temporarily) away from face-to-face delivery. In particular, at the height of the pandemic, teaching and learning required an unprecedented change to its pedagogy and required an immediate and significant transition to developing a digitised curriculum. In countries such as Australia, the response to this challenge by tertiary institutions has included adopting what has been loosely described as "hybrid" learning. One author has described the description of "hybrid learning" used during the pandemic as encompassing "...everything from parallel teaching (some learners online, some learners onsite), blended learning (use of digital or online resources in onsite teaching) to emergency remote teaching (teaching and learning during the pandemic)" (Nørgård, 2021, p.1711).

This rapid shift in teaching focus to "hybrid" learning has a number of potential effects on the implementation challenges highlighted by the StudyFlex trial. For example, insofar as support for students and staff for hybrid learning is concerned, there is a prospect that support needs may not be as significant post-pandemic. One reason is that many individuals have been compelled to equip themselves to learn, work, or study effectively from home. For many people, transitioning to studying from home has required a significant investment in new technologies and equipment and

changes in study practices. These investments and changes in practices will have been accompanied by improvements in digital literacy insofar as the use of learning technologies are concerned. The result is that many (including some of whom may previously have been hesitant) have now learnt how to effectively interact digitally in a range of educational settings. For these people, hybrid learning options may be increasingly accepted, preferred or even demanded. Indeed, there is growing recognition that forced distinctions between on-campus and online modes of learning ignore the realities of contemporary learning (Lamb et al, 2022).

The StudyFlex trial also highlighted a number of structural and administrative challenges associated with implementing hybrid learning models (some of which were noted previously in this Chapter). In addition, however, many of the discussions leading to the implementation of the trial concerned the ability of the University's systems and the University's regulatory rules and frameworks to offer sophisticated hybrid models to all students in any meaningful and enduring manner. The most obvious example of these concerns is the historical legal restriction on international student visa-holders, which in Australia restricts their ability to learn online and requires Australian universities to monitor on-campus class attendance of these student Visa holders. COVID-19 has provided both the opportunity and necessity for universities and regulators to challenge and relax these previously seemingly inflexible rules. For example, during the peak of the pandemic in Australia and in a number of other jurisdictions dependent on international students, face-to-face attendance student visa requirements were relaxed.

Although such regulatory restrictions may be intended to return when the pandemic ends, there will likely also be ongoing post-pandemic pressure on tertiary education providers to accommodate study mode flexibility "…to repair the damage caused by COVID-19's interruptions to learning trajectories" (Nørgård, 2021, p.1711). Many students have been compelled to defer or take leave of absence from their studies or particular study units due to COVID-19 restrictions and disruptions. Many will be impatient to resume and to make up for lost time. Others will have been forced to abandon their studies. They may choose to seek out alternative study options with greater inbuilt study mode flexibility to insulate against future risk of having to make the same decision in the event of future unanticipated calamities.

Others, who may not have previously contemplated or experienced online learning will now have had a taste of alternatives to traditional on-campus face-to-face delivery. Pearson's 2020 survey found that 84% of students globally agreed that "[s]tudents can still have a good university experience if some classes are held in person and some are held online" (Pearson, 2020, p.48). This suggests that in the wake of COVID-19 students will seek out high quality and flexible mixes of online and in-person learning experiences.

All of this provides a compelling case for universities and regulators to remove administrative hurdles in the way of innovative hybrid-flexible offerings like StudyFlex. It may also compel universities to consider the further issue highlighted by the StudyFlex trial – the need to capture contemporaneous and long-term data concerning both student preferences and student performance in hybrid learning settings. This will ensure informed long-term adjustments to resourcing, timetabling, and learning spaces which will be required to accommodate the likely widescale adoption of hybrid-flexible learning in one or more guises post-pandemic.

VII - Conclusion

The StudyFlex trial was the start of an ongoing journey. Whilst the nomenclature of StudyFlex has been repurposed at La Trobe University for other uses, and the model as originally conceived has not proceeded beyond the pilot stage at that university, the essence of the originally conceived model remains more relevant than ever. Specifically, the authors —having moved on to other universities—continue developing and building upon StudyFlex as part of a broader flexible-hybrid research agenda.

COVID-19 has accelerated the pace of this research and hastened the increasingly likely long-term transition to high-quality hybrid delivery in universities. The work required to ensure this transition continues apace and will require a large and committed international community of practice. The StudyFlex trial suggests a series of key starting priorities for this community of practice to address to ensure the benefits of flexible learning choice are fully realised. The continuing work of the authors stemming from the StudyFlex trial will aim to further build and refine the research agenda to allow

educators to confidently assess whether and how to implement hybrid learning approaches in their particular classroom, disciplinary, administrative, and regulatory contexts.

Specifically, the StudyFlex trial and the values of HyFlex highlight uncertainties in our current understanding, acceptability, and impact of hybrid learning and illustrate that any existing knowledge must be qualified by the realisation that study attitudes and behaviours are not static, nor will they be the same in all disciplinary and cohort-specific contexts. Accordingly, future research needs to extend to include an array of highly contextualised studies involving the design and implementation of flexible hybrid learning models like StudyFlex, building to a critical mass of continually evolving and empirically backed body of research. The COVID-19 pandemic and anticipated realities of living in a post-pandemic world may provide the necessary momentum for the initiation and acceleration of this sorely needed body of research.

References

Beatty, B. (2010). 'Four Fundamental Principles for HyFlex – The Pillars', *HyFlex World: Supporting learners with face to face and online options – all the time*. Retrieved 18-February-2022 from https://edtechbooks.org/-fkxV

Beatty, B. (2014). Hybrid courses with flexible participation: The HyFlex course design. In L. KyeiBlankson & E. Ntuli (eds.), *Practical Applications and Experiences in K-20 Blended Learning Environments*, IGI Global, Hershey, PA, 153-177.

Beatty, B. (2019). *Hybrid-Flexible Course Design: Implementing Student-Directed Hybrid Classes*. EdTech Books. https://edtechbooks.org/-vGsU

Bevacqua, J. & Colasante, M. (2018). New shores: Preliminary observations from a proof-of-concept project, to define and design a student-centred approach to study mode selection. In M. Campbell et al (Eds.) *Proceedings ASCILITE2018: 35th International Conference on Innovation, Practice and Research in the Use of Educational Technologies in Tertiary Education*, Geelong, VIC, 309-313. https://edtechbooks.org/-uBjA

Bevacqua, J. & Colasante, M. (2019). No Lines: Observations from a pilot project to re-imagine, design and implement a flexible student-centred approach to study mode selection. *Journal of University Teaching and Learning Practice, 16*(1). https://edtechbooks.org/-fZvk

Colasante, M., Bevacqua, J. & Muir, S. (2020). Flexible hybrid format in university curricula to offer students in-subject choice of study mode: An educational design research project. *Journal of University Teaching and Learning Practice, 17*(3). https://edtechbooks.org/-dyJ

Lamb, J., Carvalho, L., Gallagher, M. & Knox, J. (2022). The postdigital learning spaces of higher education. *Postdigital Science and Education, 4*, pp:1–12

Nørgård, R. (2021). Theorising Hybrid Lifelong Learning. *British Journal of Educational Technology, 52, pp:* 1709-1723.

Pearson. (2020). *The Global Learner Survey August 2020*. Retrieved 11-March-2022 from https://edtechbooks.org/-seES

John Bevacqua

Monash University

John is an Australian legal academic and commercial lawyer. John holds a PhD in tax law from the University of New South Wales. John has held multiple roles as Director of Education and Academic Director of university online programs. These roles have allowed John to pursue his passion and scholarly interest in effective online and hybrid delivery. John also publishes regularly both in Australia and abroad in the field of tax administration and is recognised as an expert in taxpayer rights and remedies.

Meg Colasante

Deakin University

Dr. Meg Colasante (PhD, SFHEA) is a Lecturer at Deakin University in Australia. At Deakin, Meg currently (2022) works in faculty development in the Learning Innovations team of the Faculty of Business and Law, while also teaching courses within the Graduate Certificate of Higher Education (Learning and Teaching). These roles demonstrate her interest in collaboratively advancing higher education teaching practices, along with completing a PhD in co-constructing digital teaching practice in higher education (using a cultural-historical activity theory perspective). Meg received her PhD from the School of Education at Deakin University in 2021, and earlier her Master of Professional Education and Training (Flexible, Online and Distance Education) from the School of Education at Deakin University in 2010.

With a background of innovating in university teaching practices (e.g. designing the pedagogical affordances of a media annotation tool), Meg was delighted to lead a project team to design, develop, trial, and research the hybrid-flexible StudyFlex model at La Trobe University under the sponsorship and mentoring of Dr John Bevacqua. In previous roles, Meg worked in faculty development and curriculum design roles at each of University of Melbourne and RMIT University, and at RMIT taught instructional design, and research design courses (after earlier leading and teaching into various health programs at RMIT). Meg has been admitted as a Senior Fellow in the Higher Education Academy (UK).

Swapna Verma

Monash University

Swapna Verma is currently a Lecturer in the Department of Business Law and Taxation at the Monash Business School, Monash University, Australia. Since 2019, she has primarily been Chief Examiner, Unit Co-ordinator and Lecturer of undergraduate Taxation Law and Business Taxation. Prior to her appointment, Swapna joined the Monash Business School as a Teaching Associate and Assistant Lecturer.

Swapna holds a Bachelor of Science (Psychology), Bachelor of Laws and Masters of Law (Taxation) from the University of New South Wales, Australia. She is also admitted to practice as a solicitor of the Supreme Court of New South Wales and is a member of the Australian Tax Teaching Association.

Swapna is a recipient of 2020 Deans Commendation for Teaching Excellence and 2020 Department of Business Law and Taxation Commendation for Teaching Excellence, recognising her genuine passion for teaching and students' learning, and expertise in implementing innovative and scholarly-informed teaching and learning in online and physical teaching spaces – particularly during COVID-19. Swapna is also a recent co-recipient with Dr. John Bevacqua of a 2021 Business Education Research Group ("BERG") grant from the Monash Business School to collect empirical qualitative data on student and staff attitudes and knowledge of hybrid delivery, which will assist in the design, development and implementation of hybrid teaching across business and taxation law subjects. More broadly, this research will allow an investigation of the challenges and opportunities of hybrid delivery.

Prior to joining Monash University, Swapna practiced as a taxation lawyer and consultant at PwC, Sydney and Melbourne Australia, working in corporate tax, tax controversy and the tax technical knowledge centre (TTKC). She also practiced as a commercial lawyer in many other legal firms in Sydney, Australia.

Swapna is particularly interested in research studies relating to taxation reform, tax policy and anti-avoidance.

This content is provided to you freely by EdTech Books.

Access it online or download it at https://edtechbooks.org/hyflex/one_universitys_hybr.

HyFlex Teaching and Learning at Bow Valley College

Svetlana Miftahov-Rapoport

Teaching   Learning   Pandemic Pedagogy

I. Introduction to the chapter

Throughout the past two years of the global pandemic, educators all over the world have been trying to reinvent themselves by adjusting their teaching practices and redesigning their classes to fit into this new virtual teaching mode. There definitely was a lot of discomfort, challenges, and resistance at the beginning, but it soon became a new normal. When postsecondary institutions finally announced that we were going back on campus, many of my colleagues and I couldn't wait to get back to the classroom to have face-to-face interaction with our students. And while the face-to-face interactions felt so familiar and exciting, the traditional classroom did not look the same. It became a Modern Classroom. So instead of going back to the old normal, we were so used to, we had to go, once again, through the process of adjustment and reinvention of ourselves and our teaching practices.

To clarify, Modern Classroom is the name for the HyFlex classroom at Bow Valley College (BVC) in Calgary, Alberta, Canada. This classroom has been equipped with the technology for HyFlex teaching, allowing a mix of students to be present in the physical classroom or join the class virtually. While the HyFlex classroom provides high flexibility and accessibility, it creates multiple challenges for educators as they are required to provide both a virtual and a traditional classroom experience supporting student learning. Reflecting on my personal experience and one of my colleagues, while teaching in a HyFlex classroom is an exciting new experience for many, it often feels like teaching two different class modalities simultaneously, which brings multiple challenges and increases the workload.

In this chapter, I would like to share what I have learned through the literature review and my professional development, as well as how we at Bow Valley College embrace this new reality and enhance our HyFlex teaching and learning practices by applying Universal Design for Learning (UDL) techniques and Students' Voices. I am so grateful I found Dr. Brian Beatty's book this year and used it quite a lot in my teaching practice and my Master's research. And now, I see this as a great opportunity to give back. I hope that the tips, strategies, and ideas I share in this chapter will support and inspire others the way this book has inspired me!

II. The Why of Modern Classroom

While HyFlex teaching and learning is not new, I believe that the Covid-19 pandemic has taken it to a level many institutions, educators, and students haven't experienced before. We must also consider the fact that the needs and skills of the students and educators have undergone a serious transformation during the past two years of dominantly virtual education. To keep up with this new environment and meet the needs of our diverse learners, The Modern Classroom at Bow Valley College provides an innovative space where learning can happen either face-to-face, remotely, or in a HyFlex format. It combines new technology to support different ways of learning and offers flexibility for learners

and educators. At BVC, we welcome students from all over the world. We also know that our learners have many responsibilities outside of college, such as families and jobs. During the Covid-19 pandemic, we have discovered how much our learners appreciated the flexibility in their studies and being able to learn from home. Also, during the lockdowns and travel restrictions in the past two years, many of our international students could not come to Canada to start their studies, but thanks to the Modern Classroom technology, we were able to welcome our new learners virtually. Today, our learners want and need freedom and choice of how and when they engage in their learning experience. By offering HyFlex classes, we thrive to remove education barriers by providing high flexibility and access.

In the summer of 2021, when we had just started offering HyFlex courses, I was one of the instructors involved in the pilot project in this teaching and learning modality. I believe HyFlex learning is here to stay and will only grow and evolve in the future. Being a big fan of new technological advancements and a teacher by calling, I am extremely excited to have the opportunity to combine these two passions of mine, but I also believe that while technology is able to transform and enhance educational experiences for both students and teachers, technology in the classroom should never be the end goal. We must remember that the goal is to enable access to learning and enrich the learning (and teaching) experiences, and this is my ultimate goal as an educator. As BVC's vision statement says, "We open doors and open minds by creating opportunities for learners, employees, employers, and communities, and by shaping the future of college education" (Bow Valley College, 2022). And I believe the HyFlex education mode helps us do just that.

III. What do the literature, students, and faculty say?

As an educator, a HyFlex teaching modality was new to me. But I also knew I didn't need to reinvent the wheel or have all the answers. So, I decided to turn to those who knew better. I chose the topic of HyFlex teaching and learning for my Master's research and conducted a literature review where I was able to find some valuable insights. Also, being a learner-centered teacher, it was really important for me to know what the students had to say about their HyFlex course experience. So, after running the course in this modality for the first time, I conducted an anonymous survey to see students' perspectives. In addition to the student survey, I was also able to collect information from the faculty through an anonymous survey to learn more about their experience teaching HyFlex courses. All the information collected helped inform my HyFlex teaching practice, and I'd like to share the results with you.

What does the literature say?

In the literature review, I found four key themes regarding how the HyFlex modality affects education and the experience of both teachers and learners. The four key themes are summarized as follows:

- Student-centered approach
- The role of technology
- Social relations and social presence
- Institutional support

Student-centered approach

As Dr. Beatty emphasizes in this book, the fundamental drive to use a hybrid approach in teaching and learning is to be able to meet the needs of both online and in-person learners and "when students are given the freedom and ability to choose which mode to participate in from session to session, they are able to create their own unique hybrid experience" (Unit 2, 2019, para 2). Also, Caulfield (2011) emphasizes a learner-centred perspective in his book *How to Design and Teach a Hybrid Course*. He argues that students in a hybrid course have the same expectation as students in any teaching and learning environment. The author stresses that, first and foremost, students must be treated fairly and equitably in any modality. They must be provided with opportunities to safely express themselves, get constructive feedback, and have easy access to learning tools. Another case study presented by White et al. (2010) concluded that as long as teaching in a hybrid environment based on similar learner-centred learning outcomes and motivation, it does not have a negative impact on the student learning process.

The role of technology

Technology has revolutionized our world and daily lives (including education) as it makes everything easier and faster. In a study conducted by Raes et al. (2018), they provide an overview of the worldwide evidence on the benefits, challenges, and design practices of the synchronous hybrid course. One of the positive highlights they present is that hybrid course offering creates educational equality by providing access to educational content and removing the barriers of physical location. In addition, it provides flexibility in course attendance and helps to accommodate certain work and family commitments adult learners have. Moreover, Raes et al. (2018) emphasize that a hybrid approach to teaching and learning allows access to a larger variety of courses regardless of the location of the students or where the course is typically taught and provides more opportunities to invite guest speakers and experts to the class (as it no longer requires their physical presence) which helps to meet the diverse needs and personal interests of the learners. In another paper on Synchromodal Classes, Bell et al. (2014) predict that hybrid learning will become increasingly common in a range of courses. They emphasize that technological advancements will help to make hybrid learning more accessible and effective. They also address the point of ever-changing technology, and while it presents some challenges, especially when it comes to adopting new teaching practices, they argue that it will provide new solutions.

On the other hand, Justin Reich (2020) discusses the latest educational technologies that were supposed to create transformation but instead caused many troubles. In the book *Failure to Disrupt- Why Technology Alone Can't Transform Education*, Reich (2020) argues that instead of disrupting systems of inequality, technology "reproduces inequalities embedded in the systems. New apps, software, and devices are put in the services of existing structures and systems, rather than rearranging them" (p. 149). He also points out that despite the belief that free and easy access to technology can democratize education, research shows that "new technologies, even free ones, disproportionally benefit already advantaged students" (p. 150).

Social relations and social presence

A HyFlex learning environment is generally viewed as engaging and relevant as it provides a high level of flexibility. And with the increased access and flexibility, this environment affects social relations among learners and instructors. Dr. Beatty (2019) emphasizes the importance of social presence in the hybrid learning environment and highlights that "communities are formed when people with a shared goal are connected to each other as they complete common activities and share meaningful experiences." (Unit 2.2, para 5). He also says that to connect online and classroom students in meaningful ways, we must use learning activities that help support and encourage the development of a meaningful learning community.

Chen and Chiou (2012) found in their study that students in a HyFlex learning environment felt a strong sense of community as this learning environment provided alternative ways of communication and contributed to increased students' motivation because of its convenience. In an additional study, Raes (2021) explores HyFlex learning designs and practices and compares these to traditional in-person programs, she found that there were no significant differences between the students present in-class and online and their understanding of the concepts, but there were significant differences found in the levels of engagement. Raes (2021) highlights in her findings that having innovative technologies does not guarantee a good learning experience, and she shows in the results of the study that:

> Two-thirds of the students indicated that the actions of the teacher during the course (epistemic design) and having the feeling that you are not alone (social design) are the most important for engendering engagement. Nonetheless, social design and epistemic design are closely interrelated with set design, as a certain teaching space can better support interaction and a sense of belonging (p. 155).

Institutional support

In today's new reality, educational institutions understand the importance of investing in and creating technology-enhanced learning spaces. As Daffron & Caffarella (2021) stress, "with the emergency that the COVID-19 virus created and the push of institutions and organizations to try and function as normally as possible, educators and trainers across the world were suddenly forced to learn about teaching online, whether they want it or not" (p. 55). And while research shows there are many organizational benefits when it comes to HyFlex teaching and learning, it is important to ensure that we create these new learning spaces that are effective for both students and educators.

Dr. Beatty (2019) addresses the challenges faced by the faculty when required to effectively teach in both classroom and online environments at the same time. He stresses that most of the teachers have more experience teaching in a face-to-face environment, and for that reason, it will require more effort to adapt to the online teaching portion in the hybrid environment. He also emphasizes that this challenge becomes even bigger when faculty are required to serve in-class and online students simultaneously, "ensuring that students are engaged in a single learning community regardless of their participation mode" (Unit 2, para 6). Dr. Beatty (2019) also highlights the increased workload that comes with hybrid teaching, which includes an increased time to develop a course plan and material, the requirement to learn new skills and technologies, and delivery of instruction as well as out-of-class interactions with the students in multiple modes.

In their study, Raes et al. (2019) highlight some pedagogical and technological challenges in the synchronous hybrid learning environment. They emphasize that a hybrid teaching and learning environment requires a shift in pedagogical approaches that will include the use of new technologies, adaptation of the learning activities and increased competencies in using technologies. Also, a hybrid environment increases educators' mental load as they need to pay attention to two locations (in-class and online students) and ensure that the online students feel included in the learning environment as they do not have the same observation as the students who are present in the physical classroom have. Raes et al. (2019) stress that these challenges increase the workload for educators, and educational institutions must provide pedagogical and technological training and support for educators. In later research by Raes (2021) on HyFlex teaching and learning, they wanted to explore teachers' experiences in this new environment. The research found that while some teachers felt lucky to have experienced the new teaching spaces, not every HyFlex teaching and learning space would have the same facilities and support. Raes (2021) highlights that when designing hybrid spaces for teaching and learning, "it is crucial to take into consideration pedagogical, social and technical elements as being part of the epistemic, social and set design of a learning and teaching space" (p. 155).

In Lakhal et al. (2017) research, the authors presented a literature review of blended synchronous course delivery mode and found that "the promises of a blended synchronous course delivery mode can only be realized if those in charge of its implementation can overcome important challenges" (p. 51). They discussed the challenges related to the technologies used, the approach to course design, and the relationships between in-class and online students. Lakhal et al. (2017) stress that there is more effort required to design a blended synchronous course as it demands much more physical and social preparation. If the organization does not recognize these efforts, it makes faculty feel unsupported.

What do students say?

During the Fall 2021 semester, I collected voluntary anonymous feedback from students at the Chiu School of Business at Bow Valley College on their experience in the HyFlex course. A total of 88 students participated, and the summary of their feedback is presented below:

Question 1: How did you attend most of your classes in the course:
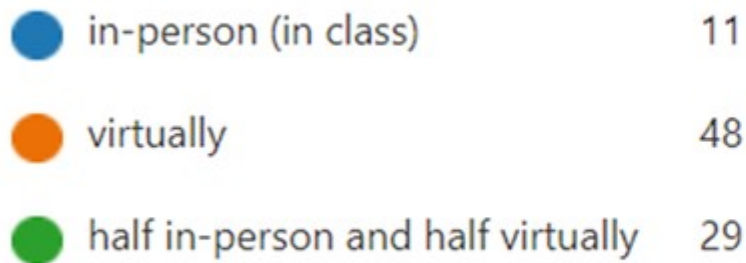
Figure 1. Student survey response to Q1

Question 2: What did you like most about the Modern Classroom?

In-Person	Virtually	Both
• Flexibility • Better focus • Engagement • Interactions *many students who attended classes in person emphasized the flexibility the hybrid Classroom provides*	• Flexibility & Accessibility • Not having to commute • Save time and money on transportation • Having more time to study • Recorded classes • Health and Safety • Accessibility • Small group interactions • Online tools	• New technology • New experience • Interaction • Flexibility and Accessibility

Table 1. Student Responses to Q2

Question 3: What did you like least about the Modern Classroom?

In-Person	Virtually	Both

- Low in-class student attendance - Not enough interaction with students who are online - Technical issues during the class "Sometimes it makes it very intimidating when you are the only person that shows up in class with the instructor."	**Issues with technology** **Lack of interactions** - Inconsistency in delivery - Hard to focus - Not enough interaction with students who are in-class	- Lack of proper communication between in-class and virtual students - Technical issues (internet connection, in-class camera doesn't always follow the instructor) - Wearing masks makes in-class communication challenging - Lack of interactions

Table 2. Student Responses to Q3

Question 4: Reasons for attending classes virtually

- Health and safety
  "anxiety of returning to school due to the pandemic," "scared to catch the virus," "new coming cases of covid19."
- Weather conditions.
- Life-work-school balance.
- Expensive and time-consuming commute to the College. Expensive parking.
- Long line at the entrance to show proof of vaccination.
- Sanitary issues due to COVID-19.
- Proof of vaccination.
- Traveling.
- Tight schedule, and a lot of assignments.
- Low number of students in class.

Table 3. Student Responses to Q4

Question 5: How would you rate your Modern Classroom experience?
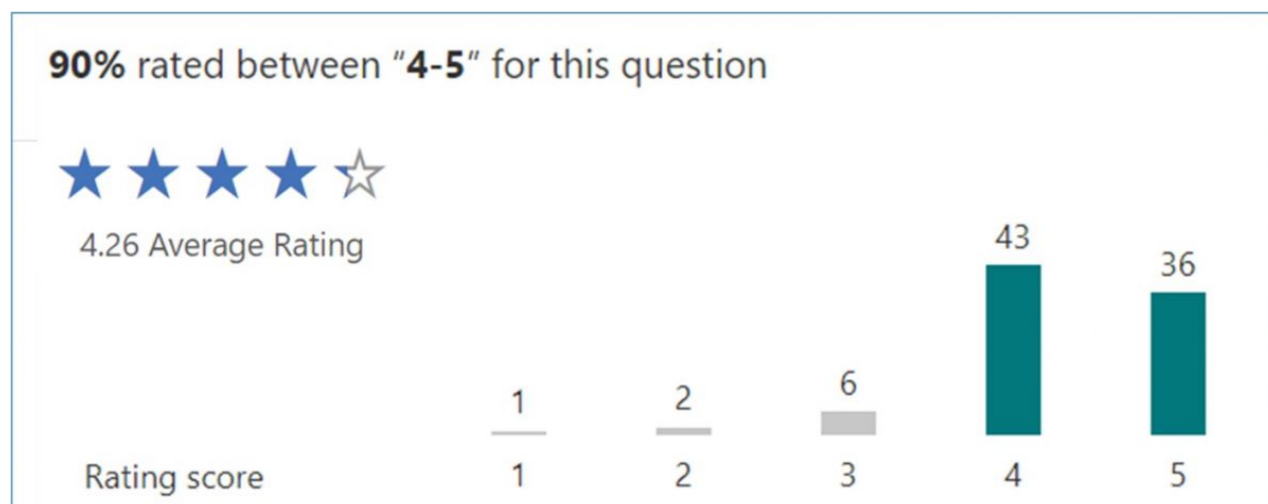
Figure 2. Student survey response to Q5

What do the faculty say?

In addition to the student feedback, I was also able to collect anonymous feedback on the BVC's faculty experience teaching in the HyFlex classroom. A total of 18 faculty members participated and the summary of their feedback is presented below:

What do you like about teaching in a HyFlex course?	What don't you like about teaching in a HyFlex course?
- Modern Technology - Accessibility and flexibility for learners - Flexibility of the delivery in one class - New teaching approach (creativity and out of comfort zone)	- Technical issues during the class - Classroom management *"feels like teaching 2 different classes at the same time."* - Increased workload (prep time) - Stress and Uncertainty - Low interaction between in-class students and online students

Table 4. Faculty Survey Responses

Combining Literature Review and Survey Results

Both the literature review and results of the student survey show that, on the one hand, students appreciate the access and flexibility that a hybrid learning environment provides. In this environment, they have the freedom to be members of both learning communities, in-class and online, and can form close relationships with members of both subgroups (Beatty 2019). On the other hand, building connections and engaging with their peers remains the leading indicator contributing to their positive learning experience in a hybrid classroom. As presented in the survey results, both groups of students, in-class and virtual, indicated that one of the main disadvantages of their HyFlex learning experience was when they did not have proper interactions with their peers.

When it comes to educators' experience, the survey results and the literature review strengthen the importance of institutional support in creating a meaningful HyFlex learning experience. Dealing with new technologies, adapting to the new ways of teaching and having an increased workload adds stress to instructors' daily teaching practice. The

required shift in pedagogical approach, acquisition of the new competencies in using technologies and increased mental load, were also addressed by Raes et al. (2019), Lakhal et al. (2017), and Beatty (2019) when discussing educators' experience teaching a HyFlex course. Based on the faculty survey results and findings by White et al. (2010), one of the most significant challenges educators face in a HyFlex environment was related to the difficulty of teaching face-to-face and online students simultaneously. BVC's faculty members stressed in the survey that teaching in a hybrid classroom often feels like teaching two different classes at the same time. In addition, Raes et al. (2019) and White et al. (2010) highlighted the importance of educational institutions to provide adequate support, pedagogical and technological training and support for educators.

IV. This is how we do it at Bow Valley College

We all probably know what the oxygen mask protocol on the airplane says- we should put our mask on first before assisting others. The same rule applies in the teaching practice. We must support educators first, who then will take care of and support their learners. I am lucky to work with a group of fantastic, like-minded people at Bow Valley College, with whom we are able to create a wonderful learning community and help each other grow personally and professionally. This community includes faculty, a leadership team, and a learning design team. Together we ensure that all faculty members have access to relevant training and materials that help to enhance teaching practice and reduce stress. It also helps to create collaboration among faculty members and aligns with BVC's values of Inclusion and Creativity. Our learning design team creates professional learning opportunities for faculty and provides support in instructional practices and the use of educational technology, including the HyFlex mode of teaching and learning. We have an incredible UDL Community of Practice where we regularly interact, learn and share how we apply UDL in our teaching practice by creating opportunities that allow for student choice and agency. We also run HyFlex Practice Learning Circles, a monthly meeting where faculty members are able to share their best practices in HyFlex courses, ask questions and bounce ideas off each other.
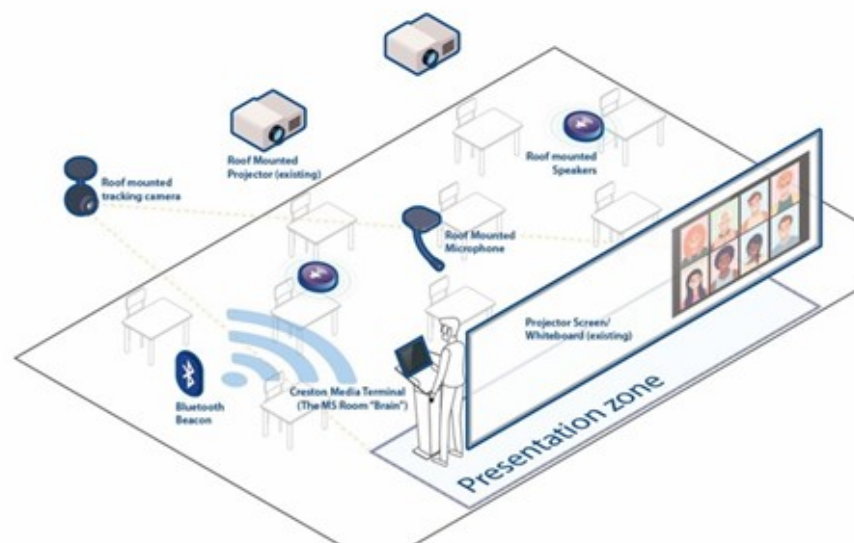
Figure 3. Bow Valley College Modern Classroom (2022)

Student Engagement is a win-win situation

When it comes to student engagement in a HyFlex environment, I always want to ensure that in-class and virtual students not only have equal opportunities to participate but also get to know each other better. There are a couple of activity examples I incorporate in my classes:

- **30-Second Challenge**: one of the activities I do at the beginning of each HyFlex course is a fun icebreaker to encourage online and in-class students to communicate with each other. In this activity, students in class and students online are assigned into groups, and they need to come up with a 30-second Challenge for another group. When everyone is back, I ask the in-class groups to challenge the groups online and vice versa. Examples of the challenges could be literally anything (the funnier the better): *do 5 pushups in front of the camera; say Hooray as a group 3 times as loud as possible; sing Happy Birthday to You as a group as loud as possible,* and so on. **This activity is usually lots of fun. It helps students get to know their classmates better, reduces some stress but, most importantly, creates a dialogue between the in-class and online students, improving their communication throughout the semester.**

Figure 4. Students at Bow Valley College (2022)

- **Blended Groups:** in many in-class activities, I mix the in-class and online students when working on group projects. To be able to do that, learners are assigned to the virtual breakout rooms (on Zoom or MSTeams). If it's an in-class activity, students in-class as well as students online join the virtual class on Zoom or MsTeams and randomly (or manually) are assigned to the breakout rooms. One of the concerns I've had before trying this out is how this would work for the in-class students if they don't have proper devices with them. However, it worked out just fine as students don't even have to have their laptops with them; using their smartphones is more than enough. So, I use blended groups for both in-class activities and presentations. **I found that this approach helped me to bring the in-class and online students together, provided them with more opportunities to collaborate and made them feel like they were sharing the same learning spaces, even though technically they weren't.**

Figure 5. Instructor and Students at Bow Valley College (2022)

- **Online collaboration tools**
  During the past years of virtual teaching and with the growing popularity of hybrid courses, I have been experimenting with multiple online engagement tools. They were very useful during virtual classes and keep being useful today in a hybrid class to create collaboration between the in-class and online students. For example, doing Mind-mapping on Jamboard or creating a Wordcloud in Menti, all these tools help students in a hybrid class to collaborate, share ideas and be a part of the same learning space. Here is a list of the tools I like and use the most:

- **Jamboard-** a digital interactive whiteboard developed by Google
  Click here to watch a video tutorial, "The Ultimate Guide to Google Jamboard."

- **Mentimeter-** an easy-to-use presentation software where you can create fun and interactive slides.
  Click here to watch a video tutorial, "5 Ways to use Menti to Engage and Interact with Students."

- **Kahoot!-** is a game-based learning platform used as educational technology
  Click here to watch a video tutorial, "Create a Quiz Game with Kahoot."

- **MS Forms-** an online survey creator, part of Office 365, allows users to create surveys and quizzes with automatic marking. The data can be exported to Microsoft Excel
  Click here to watch a video tutorial, "How to use Microsoft Forms."

- **Branching in MSForms-**You can add branching logic to a survey or quiz so that it changes according to the responses to specific questions. ... In a survey or quiz that branches, questions appear only if they are relevant to the respondent.
  Click here to watch a video tutorial, "How to use Microsoft Forms Branching."

- **Nearpod-** Nearpod helps educators make any lesson interactive, whether in the classroom or virtual. The concept is simple. A teacher can create interactive presentations that can contain Quizzes, Polls, Videos, Collaborate Boards, and more
  Click here to watch a video tutorial, "How to use Nearpod."

- **Miroboard** - Miro is the online collaborative whiteboard platform that enables distributed teams to work effectively together, from brainstorming with digital sticky notes to planning and managing agile workflows
  Click here to watch a video tutorial, "How to use Miro."

- **Slido-** Use live polling, word clouds, quizzes and more to engage your audience in real-time. Slido is easy to use and integrates with PowerPoint.
  Click here to watch a video tutorial, "How to use Slido for Live Polls in PowerPoint Presentation

- **Poll Everywhere-** Create simple surveys in minutes and let people vote. Turn feedback into actions
  Click here to watch a video tutorial on how to use it.

- **Padlet-** From a web app that lets users post notes on a digital wall.
  Click here to watch a video tutorial on how to use it.

When you don't know what to do, ask your students

I am a survey freak. I love including my students in the decision-making process for my courses. It is also a great UDL practice that allows for student choice and agency. One of my biggest concerns when developing the HyFlex course lesson plan was that I never knew for sure how many students would be in class and how many would join virtually. To plan my classes better and have some level of certainty, I implemented a quick solution: Polly Feedback. This is an online survey I post for my students before each class to check how many students will be in-class and how many will join online. Students and I can see the results of the survey right away:

Sender: Svetlana Miftahov Rapoport | ✳ Open | 🔒 Anonymous

How are you planning to attend the upcoming class on March 3rd?

In person on Campus		47% (11)
On MSTeams		52% (12)

Total Votes: 23
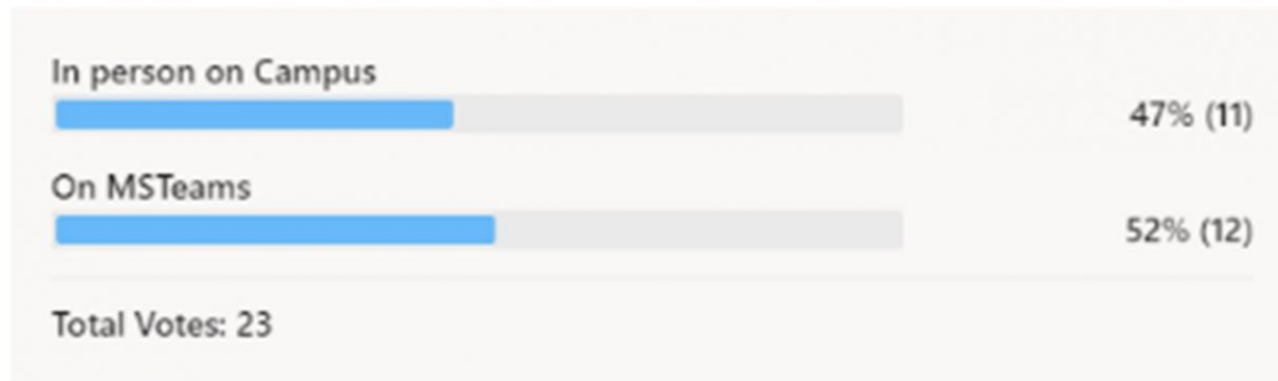
Figure 6. Ask your students!

Knowing how many students will be in class and how many online helped me to prepare the class material properly (hard copies and digital copies of handouts) and plan engagement and learning activities accordingly. Today, I utilize this practice in every HyFlex class, and it helps students and me have better learning and teaching experiences.

An additional practice I utilize in my courses is planning activities and exams for the course together with the students. Here is an example of a Final Exam Planning Survey (Figure 7) and Final Exam Questions Survey (Figure 8). This approach helps me build the exam in a way that meets my students' needs (and "wants") and makes them active participants in their assessment planning. The survey is distributed to the online and in-class students prior to or during the class. The first survey (see Figure 7 below) is completed individually, and the second survey (see Figure 8 below) is completed in groups of four. I use MS Form to create the survey, but you can use any other survey platform you are familiar with:

Figure 7: Final Exam Planning Survey

Figure 8: Final Exam Questions

Students' Voices

Today, our students have been through a full year of their HyFlex courses, so we wanted to hear from them again. Using the student feedback, we are able to try some new initiatives that put our students in leading positions in the classroom. Our student feedback will continue to influence the decisions we make in the Modern Classroom and HyFlex courses.

Modern Classroom Wins [8:22 min]: *Students share their stories and the benefits of the Modern Classroom approach*

https://edtechbooks.org/-qgQg

The Modern Classroom Challenges and Opportunities [11:02]: *Students discuss their challenges learning in the Modern Classroom*

https://edtechbooks.org/-dMeh

V. Conclusion

Disruptive technological innovations are happening in today's world, laying a new foundation for a learning society. Technology forces us to gain new skills. Today, more than ever, we see the importance of combining human and tech-savvy skills when expanding our learning horizons. I do not believe that technology will ever replace great teachers. However, when great teachers use technology wisely, it helps to create transformational learning experiences. We all know that technology has enormous potential to address educational needs more efficiently and enrich learner experiences by removing barriers and providing an individualized student learning experience, and this is what I believe a hybrid classroom offers. But we must remember that technology in the classroom is not the end goal. Enabling access to learning and enriching the learning experience is the goal. As Reich (2020) suggests:

> *If the energy and excitement generated by new technologies could be applied not just to technology but to technology and systems change combined, that would provide the best possible chance for the field of learning at scale to meaningfully improve how people learn in school and beyond (p. 243).*

I am excited for the future of education and the opportunities the HyFlex modality provides. And while the future itself is uncertain, I believe if we continue learning, sharing, and caring for one another, we will be able to build a big global learning community that will help create transformational educational experiences and make the world a better place.

References

Beatty, B. J. (2019). Hybrid-flexible course design. *Implementing student student-directed hybrid classes*. https://edtechbooks.org/-jqcG

Bell, J., Sawaya, S., & Cain, W. (2014). Synchromodal classes: Designing for shared learning experiences between face-to-face and online students. *International Journal of Designs for learning*, *5*(1).

Bow Valley College. (2022). *Open Doors Open Minds- Introduction to Bow Valley College Strategic plan.* https://edtechbooks.org/-biw

 Butz, N. T., & Askim-Lovseth, M. K. (2015). Oral communication skills assessment in a synchronous hybrid MBA programme: does attending face-to-face matter for US and international students?. *Assessment & Evaluation in Higher Education*, *40*(4), 624-639.

Caulfield, J. (2012). *How to design and teach a hybrid course: Achieving student-centered learning through blended classroom, online and experiential activities*. Stylus Publishing, LLC.

Chen, B. H., & Chiou, H. H. (2014). Learning style, sense of community and learning effectiveness in hybrid learning environment. *Interactive Learning Environments*, *22*(4), 485-496.

Daffron, S. & Caffarella R. (2021). *Planning programs for adult learners: A practical guide. 4th edition*. San Francisco: Jossey-Bass.

Reich, J. (2020). *Failure to Disrupt: Why Technology Alone Can't Transform Education.* Harvard University Press.

Lakhal, S., Bateman, D., & Bédard, J. (2017). Blended Synchronous Delivery Mode in Graduate Programs: A Literature Review and Its Implementation in the Master Teacher Program. *Collected Essays on Learning and Teaching*, *10*, 47-60.

Raes, A., Detienne, L., Windey, I., & Depaepe, F. (2020). A systematic literature review on synchronous hybrid learning: Gaps identified. *Learning Environments Research*, *23*(3), 269-290.

Raes, A. (2022). Exploring Student and Teacher Experiences in Hybrid Learning Environments: Does Presence Matter?. *Postdigital Science and Education*, *4*(1), 138-159.

Szeto, E. (2014). A comparison of online/face-to-face students' and instructor's experiences: Examining blended synchronous learning effects. *Procedia-Social and Behavioral Sciences*, *116*, 4250-4254.

White, C., Ramirez, R., Smith, J., & Plonowski, L., (2010). Simultaneous Delivery of a Face-to-Face Course to On-Campus and Remote Off-Campus Students.

Svetlana Miftahov-Rapoport

Bow Valley College

Svetlana Miftahov-Rapoport is an authentic educator and relationship builder. Her life passion is service to others. Having traveled the world extensively, Svetlana lived and worked in three different countries, which has shaped her outlook on international development and cross-cultural engagement. Thanks to her natural curiosity and enthusiasm, Svetlana worked in three main sectors: private, public, and education and she is fluent in three languages: Hebrew, Russian, and English. As a lifelong learner, Svetlana believes that continuing education and personal development can inspire everyone to live an enriching life. She holds a Master of Education from the University of Calgary, a double major Bachelor's degree in Communications and Management from the Open University of Israel, and a double major Diploma in Human Resources and Public Relations from Bow Valley College. These days Svetlana is working as a business Instructor at Bow Valley College and has continued to enhance her skills and abilities through ongoing professional development and community engagement.

This content is provided to you freely by EdTech Books.

Access it online or download it at https://edtechbooks.org/hyflex/bow_valley_college.

Evolving HyFlex from Emergency Measure to Sustainable Program: Northern State University

Ben Harley & Danette Long

Introduction

Like many institutions of higher education, Northern State University (Northern) began offering Hybrid-Flexible courses in response to the COVID-19 pandemic. During Spring 2020, the University switched to remote learning. Just a few months later, in Fall 2020 students, faculty, and staff returned to campus, and administration encouraged faculty to offer their courses as HyFlex in order to navigate the pandemic. The University offered training in HyFlex throughout that academic year, and student surveys indicate that quality of HyFlex instruction improved drastically as the year progressed. In Fall 2020 16% of students said HyFlex led to poorer content delivery whereas only 8% said that in Spring 2021 (Office of Institutional Research and Assessment "SOI Results: Spring 2017-Spring 2021"). Despite these improvements, implementation of HyFlex remained inconsistent throughout the 2020/2021 academic year, and faculty interpreted *HyFlex* in myriad ways. In response, during Summer 2021, Northern's Academic Affairs division, led by the provost, decided all faculty wishing to offer HyFlex courses in the future must complete a year-long certification program offered by the University's Center for Excellence in Teaching and Learning (CETL). Upon completion of the program, faculty would be able to offer any of their courses as HyFlex, pending approvals. The inaugural HyFlex Certification cohort was launched in Fall 2021 and was limited to ten faculty to ensure each participant could richly engage with the content and receive high-quality feedback from the Director of CETL and the CETL Instructional Designer. Now that the first cohort has completed the program, 70% of its members plan to continue offering HyFlex courses and seven courses are being offered in Fall 2022. Additionally, several faculty members who were not in the original cohort have shown interest in completing the training because they see HyFlex as a way to make their courses more accessible to the students at our small, rural South Dakotan university.

Written from our perspectives as the leaders of Northern's CETL, this chapter explains how Northern State University used primary and secondary research, federal and local grant monies, in-house training programs, and a bit of trial-and-error, to move its HyFlex course offerings from a COVID-19 emergency measure to a robust, sustainable, and growing program that includes several course options for students, training for faculty, and a graduate certificate in HyFlex pedagogies.

Northern State University—A Geographic and Demographic Overview

Northern State University is a regional comprehensive university and predominantly undergraduate serving institution located in Aberdeen, South Dakota. In Fall 2020, the total enrollment was 3,431 students, 87% of whom were undergraduates. Of those 2,968 undergraduates, 61% were part-time, 66% were enrolled in at least one distance education course, and 37% were dual-credit high school students. Of the 1,149 full-time undergraduate students, 18%

were first-generation and 28% were receiving Pell grants due to financial need (NCES). In other words, Northern serves a small student population with diverse needs.

In that same semester, 34% of Northern's degree-seeking undergraduates were from Aberdeen and the surrounding area, which is normal for the University. This trend of local enrollment means that the regional geography and demographics greatly impact the University, so it is important to understand the area (Mammenga, "Question"). With a population of 28,315, Aberdeen is the third largest city in South Dakota. The National Center for Education Statistics (NCES) designates Aberdeen as a remote town surrounded by rural communities. The nearest metropolitan areas (Fargo, ND and Sioux Falls, SD) are about 200 miles away and a three-hour drive by car. Ten percent of Aberdeen's population lives in the city center, which is designated an opportunity zone—i.e., a community so distressed that investors receive special tax benefits for supporting economic development within them (Opportunity). The poverty level in Aberdeen and the surrounding county is slightly above the national average at nearly 12% (US Census).

Moreover, 68% of Northern's full-time undergraduate students come from the state of South Dakota (Mammenga, Personal interview), meaning that many have grown up in rural communities where it is difficult to recruit and retain teachers because of location, low salaries, large classroom sizes, and increasingly politicized criticism and animosity toward public education (Pfankuch). While South Dakota's teacher shortage has been an issue for over a decade, it is currently at a five-year high and is projected to worsen (Pfankuch). The most recent South Dakota Department of Education Report Card for K-12 schools claims that factoring for grade level, only 53% of students are proficient in English, 43% in math, and 42% in science. Additionally, the report found that only 57% of graduating high school students met the state's criteria for college and career readiness.

The low proficiency levels of SD high school graduates are evident in Northern's student population: 16% of first-time, full-time, degree-seeking students are placed into developmental, zero-credit courses in English, math, and/or reading. Specifically, 5% of first-year students are placed into developmental math, 12% into developmental English, and 2% into developmental reading (Mammenga, Personal interview). The student demographics, combined with the remote location of the University, create unique educational challenges. Faculty must ensure their courses are accessible to students with different levels of college preparation and different accessibility needs related predominantly to their economic and geographic backgrounds.

Aberdeen's remote location also creates a unique problem for student-athletes. Thirty-two percent of Northern's full-time students are involved in collegiate athletics and may miss up to twenty class days, or a quarter of the semester, due to travel, depending on their sport. The NCAA Division II Northern Sun Intercollegiate Conference to which Northern belongs covers over 137,000 square miles and teams regularly travel vast distances for competition. This extensive loss of academic hours is challenging for both students and faculty. Though faculty strive to accommodate student needs, they often struggle to make sure athletes can retroactively make up course content and receive the guidance and support they need.

All of these data indicate that even before the pandemic, Northern faculty could have benefitted from a course design method that would accommodate the unique needs of students who live in rural and remote areas, have varied levels of college preparation, and have responsibilities to their teams, employers, and families; however, this is not why the University initially adopted HyFlex course design.

COVID-19 and Remote Learning

Like most universities in the US, Northern pivoted all courses to remote learning in Spring 2020, though the process took some time. On March 12, 2020, Northern's president sent an email to the entire campus stating, "Due to the continued spread of the COVID-19 virus, the Board of Regents has decided to extend spring break an extra week for students at Northern and all regental universities . . . We are currently assessing how to proceed from that point forward" (Downs, "Message from President Downs"). Later that same day, the provost emailed faculty, suggesting they, "use this extra week to prepare for the strong possibility that we will take all instruction online March 23" and directing

them to the available instructional design resources (Wanous, "Academic Planning"). Four days later, on March 26, the NSU News sent an all-campus email stating, "Beginning Monday, March 23, S.D. Board of Regents institutions, including NSU, will move all classes online for a two-week period. On-campus, in-person classes are currently scheduled to resume on Monday, April 6" (NSU News). Eight days later, on March 24, the president announced, "Today, the Board of Regents has determined that all South Dakota public universities will transition classes online for the duration of spring semester" (Downs, "NSU-Update"). After this announcement all courses remained remote, some synchronous, others asynchronous, but all courses were remote.

While students and faculty largely understood the need for remote instruction and did their best to adjust to the unexpected change in modality, concerns arose because faculty had not initially designed courses to be online and many students had not signed up for online courses. Despite the ad hoc nature of emergency remote instruction, however, the number of students who rated their courses and instructors as excellent remained consistent with the previous three-year averages. Though the number of responses was substantially lower than in previous years, the office of Institutional Research and Assessment saw "absolutely no evidence that the Spring 2020 scores were impacted by COVID-19 adjustments" (Office of Institutional Research and Assessment "SOI Results: Spring 2017-Spring 2020"). We believe that this consistency in instructional quality is largely because before March of 2020, 80% of Northern's faculty had gone through the online teaching certification program taught by CETL's Instructional Designer and had experience teaching at least one online course (Northern State University). This experience and training made the difficulty of remote instruction more tenable than it would have been otherwise and allowed for consistency in educational quality.

Despite Northern's success with remote education, the SDBOR announced On May 1, 2021 that all universities under its governance would be returning to campus in the fall:

The South Dakota Board of Regents announced today its commitment to on-campus operations this fall, with the resumption of face-to-face teaching and learning across the public university and special schools' system . . . they will be guided by safety, science, and the institutions' educational mission, with a priority to balance the significant value of on-campus teaching and learning with an equal responsibility to protect community health and safety. ("Public University System")

The claims that face-to-face education is inherently more valuable than online learning and that on-campus experiences are necessary for creating intellectual communities were reiterated by Northern's president, who explained:

At the heart of this decision [to return to campus in the fall] is community, because Northern is truly a great community. We pride ourselves on being a place that feels like home – where students feel supported to pursue their passions; encouraged to unleash their potential as scholars and citizens; and prepared to develop the skills needed to succeed in their careers and in life. On-campus collaboration and commiseration are such an important part of the college experience, which has become even more evident due to our turbulent spring semester. (Downs).

While accommodations were made for some faculty who could not be on campus because of their health or that of their families, and while some students (mostly international) would not be able to return to Aberdeen, it was decided in May that most everyone would be returning to campus and face-to-face instruction in August. The return came with unique challenges.

HyFlex Course Design and the Return to Campus

Returning to campus was a demanding task, and in May 2020 the University established a Return to Campus COVID-19 Taskforce to coordinate the efforts. This task force included members from all parts of campus—academics, administration, athletics, facilities, student affairs, technologies, etc.—each of whom needed to take on their own roles to ensure that students, faculty, and staff could return to campus safely. Our role as the Center for Excellence in Teaching and Learning was to determine how on-campus faculty could best teach when some students could not return, some students would not feel safe being in the classroom, some students and faculty would be out sick, and

certain rooms would have social distancing configurations that would not enable all students enrolled in a course to be present in the same room at the same time.

In response to these challenges, and at the urging of the provost, Northern decided to implement a voluntary HyFlex initiative that would enable any instructor to teach their courses HyFlex if they desired. In turn, we at CETL would provide an introduction to HyFlex pedagogies, training on HyFlex technologies, and additional HyFlex programming throughout the year. The faculty were first introduced to this initiative during an event we hosted with Jenni Hayman of Cambrian College on Monday June 22, 2020 that we called "No Stress HyFlex." (See Fig 1.) During that event, Hayman discussed the pedagogical philosophies underlying HyFlex, showed a few activities she uses in her courses, and shared some of her successes with HyFlex course design.
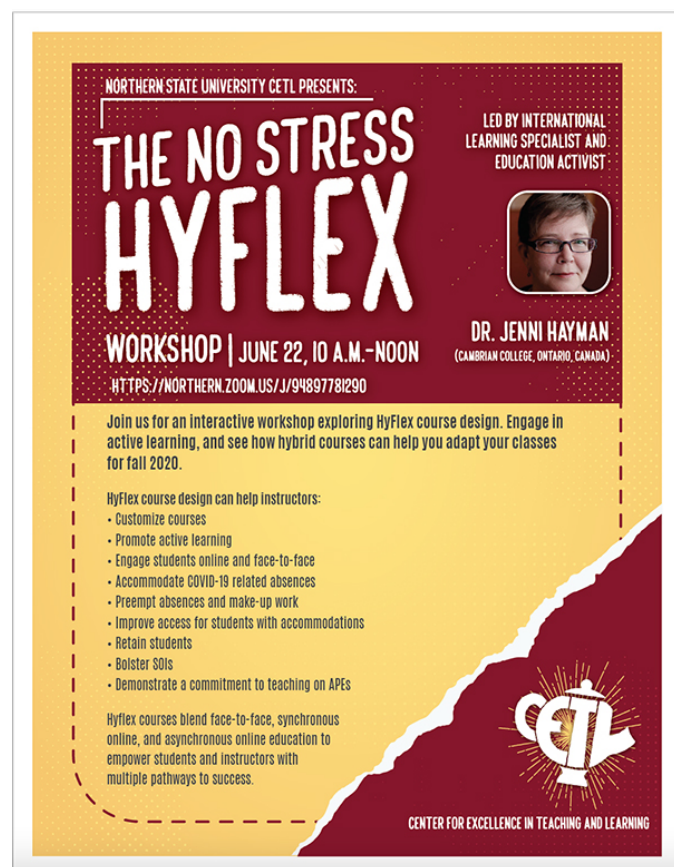
Figure 1. No Stress HyFlex Flyer

Three days after the Hayman presentation, we hosted a "HyFlex Techs" workshop in conjunction with Media Services (MS) and Instructional Technology Services (ITS). During this workshop, we explained how to use hardware (e.g., computers, document cameras, touch monitors), software (e.g., Zoom, Notepad, Panopto, D2L), and embodied performance (e.g., acknowledging Zoom students, looking to the camera occasionally) to successfully run a HyFlex course. To model the work and make it accessible to everyone, we conducted the workshop HyFlex—with faculty participating face-to-face, via Zoom, and asynchronously using a shared learning management system (LMS) page.

Attendance was high at both training events—86 faculty (67%) and 49 faculty (37%) respectively—and in Fall 2020, 48 faculty members (about 37% of Northern's total faculty) were signed up to teach a combined 121 HyFlex courses (Lapka); however, because the training was so rushed, and because we ourselves were still learning about HyFlex, there were inconsistencies. What *HyFlex* meant varied widely among faculty. While we in CETL maintained that HyFlex was meant to give students the freedom to choose their attendance mode for any given class period, most faculty viewed the online attendance options simply as COVID workarounds, not as valid choices for students in their own right.

A popular HyFlex modification used by faculty was the A-group/B-group strategy, which served those whose COVID classrooms could no longer accommodate their full course roster, due to new COVID room configurations. These faculty alternated which groups would attend in person and which would attend synchronously via Zoom. They continued to take attendance and required students to provide notice from the University if they were going to miss class due to COVID quarantine. Similarly, some faculty modified HyFlex so that online synchronous and asynchronous options were only available to students who had written excuses. In short, what counted as HyFlex was inconsistent in the level of student choice, as faculty did their best to modify face-to-face courses.

Collaborating with MS and ITS, we created tutorials, shared resources, and met individually with faculty to troubleshoot specific issues. These efforts improved the quality of HyFlex education on campus, and we believe they contributed to faculty delivering high-quality instruction throughout the pandemic (Office on Institutional Research and Assessment, "SOI Results: Spring 2017-2021). Despite this sucess and despite CETL, MS, and ITS staff working 70+ hours per week, some faculty still remarked to us that they felt as if they were on their own.

To further support faculty and to make Northern's HyFlex course offerings more consistent, while also honoring faculty autonomy and academic freedom, we continued to present faculty with a variety of HyFlex-related programming throughout the year. Our events in the 2020/2021 academic year included Chris Gilliard on digital equity, Maha Bali on community building across modalities, Marcia Dixon on communicating with online students, Stephanie Kerschbaum on accessibility, and several HyFlex panels featuring Northern faculty, staff, and administrators on Northern specific issues. (See fig. 2.) Through these events, all of which were held as HyFlex to model best practices, we encouraged faculty to think about how to design and execute high-quality HyFlex courses.

Figure 2. HyFlex Half-day Event

Researching Faculty Experiences

To better understand the issues that faculty were facing with HyFlex, in Fall 2020 we conducted an IRB-approved interview study with ten faculty who were implementing HyFlex in their courses for the first time. We were lucky enough to receive volunteers from each of Northern's four colleges: Arts and Sciences, Business, Education, and Fine Arts. From September through December we—along with undergraduate research assistant Tony Mangialetti—met with each of the faculty volunteers individually once a month and conducted hour-long interviews about their experiences with HyFlex. From these interviews, we learned how faculty were running their courses, where they were struggling, where they were seeing success, how students were responding, and how we could better support teaching and learning.

We are still coding and interpreting the data from this study, so we cannot make any definitive claims at this time; however, it quickly became apparent that Northern faculty were struggling in part because they were not receiving the immediate feedback and validation of their work that face-to-face classrooms provide. Many of the faculty struggled to see if students were listening to them, engaging with the course, and learning the course content. Faculty reported missing the ability to see their students smile, nod, take notes, and look engaged (Participant A, Dec.). They missed the ability to read over shoulders, glance at classroom work, eavesdrop on small groups, or touch a student on the arm (Participant I, Dec.).

One of our participants was a first-year faculty member, who was diligently trying to keep track of excused absences; he was becoming disheartened as he realized students with COVID-excused absences were not returning to his courses after their mandated quarantines. Several of these students were still doing well in his class, but he felt as if they were not engaging with the content as much as they may have in a traditional course: "I don't feel like I've had a chance to make my sell on it—here's why this matters and here's why it's actually pretty interesting . . . I want to make it relevant to them . . . and I feel like I am having a hard time accomplishing that" (Participant B, Oct.). Another faculty respondent who heavily relies on small group work in his classes claimed, "I like the in-person dynamic . . . because it holds people, I think, naturally more accountable because the Zoom crowd is still—I'm still having a lot of problems with people who are just logging in and then they're really not there. They're in the background doing something else, and I'll admit it's at a point now where it's getting kind of aggravating" (Participant C, Oct.). These faculty perceived that their online students were not engaging in course material with the same amount of depth as their face-to-face peers.

Even when faculty knew their students were engaging material, they often felt as if they themselves were not doing enough to respond to students. Faculty felt as if they were failing to oscillate between the students in different modalities. As one faculty member suggested, "I think it could work out if I could just do one modality, but both is just a killer, and it's so draining right now . . . it is taking more mental energy" (Participant D, Nov.). Another faculty member stated, "I found it very difficult to juggle the Zoom people and the face-to-face people during class time. It is hard for me to concentrate on more than one thing at a time. It's hard for me to switch tasks . . . And so I oftentimes in class didn't feel like I was at my best" (Participant I, Dec.). For these faculty, the multiple modalities made their courses more accessible but also made it more challenging to provide each student with the direct and immediate attention they may need to be successful. At the end of this semester, faculty in the study reported feeling burned out, drained, exhausted, and having low morale (Participant A, Nov.; Participant B, Nov., Participant D, Dec.; Participant I, Nov.; Participant J, Oct. and Nov.).

Faculty found it particularly draining to try and engage with asynchronous students, many of whom checked out of the class for prolonged periods of time and fell behind their peers. A faculty member told us about her experience working with one such student: "It started with COVID, and then it started with going to Zoom classes, but then she would go to interviews or her internship, and she would tell herself, 'Oh, I'll just watch the lectures later' . . . but she never did go back later, and so she's trying to teach herself" (Participant E, Oct.). In response to this situation, the instructor tried to come up with alternate assignments and schedules for the student, so she could still pass the course. This kind of story about a student choosing asynchronous attendance but falling behind and leaving faculty to try and re-engage them and find novel ways for them to still learn course content and be successful was very common in our research. Faculty tried a variety of strategies to reach students—direct emails, invitations for on-on-one Zoom meetings, and flagging students

on student success software that alerts advisers and other stakeholders–but the results were varied and often unsuccessful (Participant A, Nov.; Participant B, Dec.; Participant D, Oct.; Participant E, Oct.).

Our discussions suggested that the faculty who were most successful in engaging students were those who were willing to let go of traditional classroom structures, who were able to see the HyFlex classroom as more diffuse than the traditional classroom, and who were able to lean into the principles of accessibility, choice, and flexibility. These folks were better able to see student engagement, learning, and growth because they were focusing on what students were creating rather than the modes in which students were participating. In other words, faculty who leaned into HyFlex values—who respected student choice and created equitable assessments for students attending face-to-face, via Zoom, and asynchronously—felt less stress and more validation because they were embracing HyFlex as its own mode of education rather than trying to force it to look like traditional face-to-face courses. For example, one faculty member learned to lean into the fact that some of her art students would choose to attend her course via Zoom so they could do their studio work at the same time. She said, "Oh, you're still working in the studio but listening to [my lecture]? Alright. I'm not mad. It's kind of like a podcast . . . Hey, you're still in class. You can still speak up if you want to" (Participant F, Oct.). Another instructor who eventually embraced student choice, learned to focus on creating a singular community: "I just try to keep it positive, which is kind of tough to do . . . I just try to keep it like this fluid system where if they want to come in person and then come and sit on Zoom, it doesn't matter. I try to keep it like one classroom" (Participant F, Dec.). As these participants learned to accept student choice, flexibility, and fluidity–their HyFlex experiences became more positive.

Technology and Grant Funding

The idea of using technology to create one classroom community despite the different modalities in which students were participating was common for respondents. Many of them wanted to "use that platform to create a sense of community, somewhere [students] could interact with others and engage with others" (Participant G, Dec.). They suggested that creating "lots of activities that would work with HyFlex [could get] students engaged because that is what they want; they don't want to sit there passively listening" (Participant A, Dec). Respondents suggested that this kind of community-building active learning work needs to start at the beginning of the semester in order to get students used to multiple modes of engagement and multiple ways of participating in a learning community (Participant D, Dec.). Faculty participants suggested that their peers should embrace HyFlex. One went as far as to say, "don't be afraid of it. You know, it's a little uneasy at first . . .[but] once you get used to it, it's really fine" (Participant H, Dec.). It seems that given enough training and experience, faculty found ways to engage students and build community using HyFlex course design.

This eventual embrace of HyFlex does not mean that it was always easy to use technology to facilitate community; in-fact our research posits that faculty found technology to be the most challenging aspect of HyFlex teaching. Despite ITS and MS installing basic recording technologies in all the classrooms and working with CETL to train faculty on their use, the classrooms simply had not been designed for HyFlex course design; they had been emergency retrofitted. Faculty were recording videos using document cameras or monitor cameras: both of which were clunky, hard to angle, and forced the instructor to stay in a single position all class (Participant I, Nov.; Participant J, Dec.). Similarly, the computer microphones were often not sensitive enough to pick up faculty voices, so many had to wear lapel microphones provided by the University. These microphones helped the audio quality of faculty voices but did not facilitate student-to-student interactions because online students could not hear the comments made by face-to-face students (Participant F, Nov.; Participant H, Sept.). Additionally, almost all of the faculty we interviewed experienced some issues with internet connectivity, software updates, or hardware malfunctions (Participant D, Dec.; Participant E, Sept. and Nov; Participant G, Dec.; Participant J, Dec.).

Figures 3-9. Classroom Learning and Teaching Technology Setups (Various)

In response to technology issues, Northern, due to the advocacy of the provost, chose to spend a portion of its Higher Education Economic Relief Fund (HEERF) to update classroom technologies in ways that benefited students attending in all modalities. While each room required unique interventions, most were reoriented to better use space, furnished with easily-arrangeable desks and chairs, equipped with mounted cameras, and arrayed with ceiling microphones that could capture all the sounds in a room. As a result of these efforts, 22 of Northern's 37 classrooms (59%) are now optimized for HyFlex instruction.

In addition to the HEERF funds, CETL applied for and received a $61,660 grant from the Knight Foundation of the South Dakota Community Foundation to build a pedagogy lab where faculty can practice with a variety of pedagogical ideas and technologies, including those related to HyFlex. The room is equipped with two cameras (one oriented toward the presentation space and another oriented towards the audience space), an array microphone, a projector, easily-arrangeable furniture, and a lounge space. Additionally, faculty can check out equipment such as Meeting Owls for capturing small seminar courses, ring lights for creating quality asynchronous material, iPads and Magewell USB capture devices for digital whiteboarding away from the lectern, and a variety of pedagogical books.

Figure 10. Welcome to the Pedagogy Lab!

Figures 11-14. Pedagogy Lab (Various)

We used information gleaned from our faculty interviews and the newly purchased technologies to improve the HyFlex experience for faculty and students. As these improvements were enacted, Northern's whole community began to see HyFlex less as an emergency COVID measure and more as an important tool for making education more accessible to every student and a way of increasing enrollment; however, the provost recognized that if the University was going to continue offering HyFlex courses, we needed to address the issue of consistency, which is why we developed the HyFlex Certification Program.

The HyFlex Certification Program

In April 2021, the South Dakota Board of Regents announced that all state schools would be returning to normal instruction in Fall 2021. This policy meant no mask mandates, no socially distanced classrooms, and no flexible attendance. In response, Northern's administration had to determine what role HyFlex course design would play moving forward. The previous year had demonstrated that HyFlex courses were valuable for all students, especially those who had obligations to their work, family, tribe, or team. Additionally, HyFlex enabled commuter students to avoid the inclement weather during the harsh South Dakota winters, and students with needs relating to mental health said they appreciated the Zoom option (synchronous online) on days when it was hard for them to attend class. Faculty also appreciated the flexibility on days they were ill and could not come to campus

Weighing these benefits with the concerns faculty had expressed in the research we had conducted the previous fall, we at CETL proposed that the University stop offering HyFlex courses while we taught a year-long HyFlex training program using a cohort model of no more than ten faculty, who would be HyFlex certified upon completion. The certification would enable those faculty to offer any of their courses as HyFlex, provided their chair, dean, and the provost approved. Northern's interim president approved our proposal and provided us with $50,000 of HEERF monies for the program. We dedicated $34,000 to paying faculty and CETL staff for their work. The rest we earmarked for guest speakers and equipment. In an announcement for the new program, the provost clearly expressed why we chose to keep HyFlex instruction and why we chose to require certification:

Following guidance from the SD Board of Regents, Northern is returning to "normal" this fall with face-to-face instruction without face coverings. As we look back at our experience with COVID, I am trying to find the silver lining to COVID—what did we learn that we will take with us into the future. One of those silver linings is HyFlex teaching. HyFlex has value as a teaching approach even without a pandemic, making college more accessible for students who regularly have to miss class for a variety of personal, professional, and medical reasons. This fall, Northern's Center for Excellence in Teaching and Learning (CETL) will start a HyFlex Certification Program. This training will allow faculty to utilize the HyFlex approach on a voluntary basis and ensure quality and consistency with our HyFlex courses. (Wanous, "The Future")

Throughout the summer, we fleshed out the certification course and developed the application form. We determined that the CETL Advisory Committee—made up of one representative from each of the colleges, a librarian, a student member, and ourselves—would determine which faculty applicants would be accepted into the HyFlex training program. We announced the program during in-service and gave faculty two weeks to submit applications. We were fortunate to receive more applications than we had slots available, and we were able to make choices based on who seemed most invested in HyFlex values and who seemed capable of navigating the pedagogical and technological challenges involved. Ultimately, the selection committee chose three faculty from Arts and Sciences, three faculty from Business, two faculty from Education, and two faculty from Fine Arts. A week later, we announced who had been accepted, coordinated participant schedules, and by mid-September we started meeting.

During the fall, we met with the cohort weekly for ten weeks to study HyFlex pedagogies. Each meeting lasted an hour and required about two hours of preparation in the form of readings and homework activities. As a group, we read and discussed Brian Beatty's *Hybrid-Flexible Course Design (2019)*, Stephen Kosslyn's *Active Teaching Online (2021),* and a variety of supplementary texts on topics such as course objectives, assessment, privacy, and equity that prepared participants to design high-quality HyFlex courses (Caruana 2019, Fisher & Bandy 2019, Kshetri 2020, Miller et al. 2020, Moses 2020, NAME n.d., Stanford 2020, Sublett 2020). Our meetings often centered around active learning activities such as mind-mapping, discussion, and peer review. Additionally, Brian Beatty, Cathy Littlefield, and Derek Bruff held digital workshops for our cohort, each of which demanded another hour of our faculty's time. By the end of this extensive program, faculty had a firm grasp of HyFlex pedagogy and practices. They also had developed their own HyFlex courses to teach in the spring.
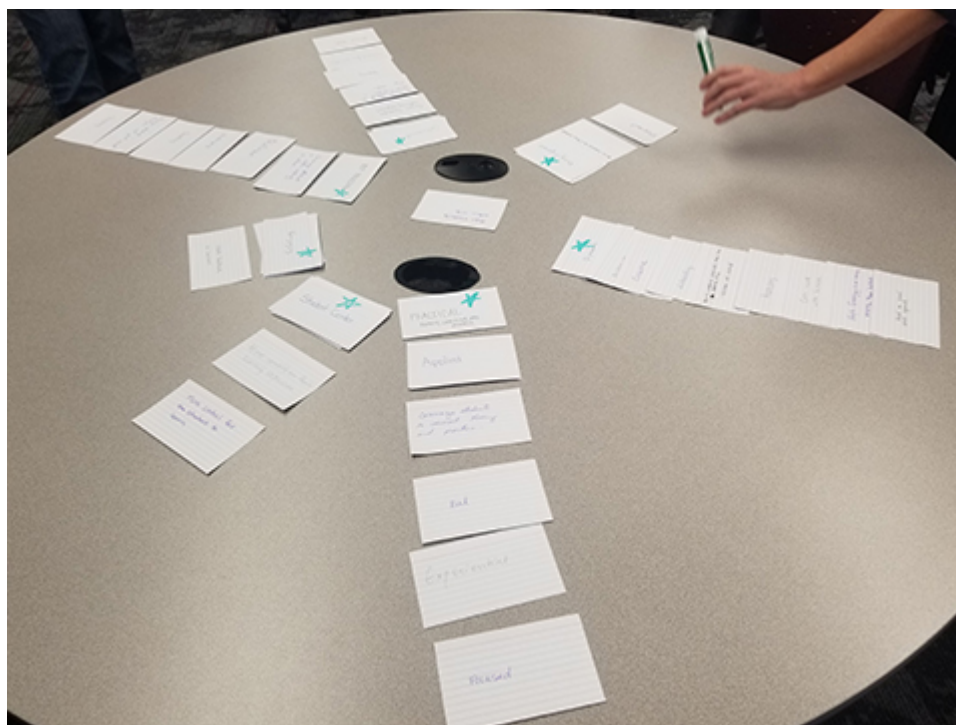
Figures 15-17. Faculty Active Learning Activities

In Spring 2022, faculty taught their HyFlex courses, created written reflections of their experiences, conducted independent research on HyFlex course design, and met monthly to discuss their experiences. Because they were teaching HyFlex, this portion of the program required a lot less of our cohort's time; meetings were an hour and a half each month and the outside research and reflection only took a few hours to complete. Cohort members also read Kevin Kelly and Todd Zakrajsek's *Advancing Teaching Online (2020),* and Kelly held a workshop for the cohort on how best to design accessible and equitable courses. The faculty's independent research took on a variety of forms: some conducted secondary research, some engaged in action research with new technologies, and others conducted primary research on student motivation. By the end of the program, it was clear that each member of our cohort understood the principles, challenges, and benefits of HyFlex and were ready to engage with it more deeply. In fact, faculty presented their experiences and research at an end-of-semester in-house conference, *Distinctive Dialogues,* where Stephen Kosslyn served as the keynote speaker.
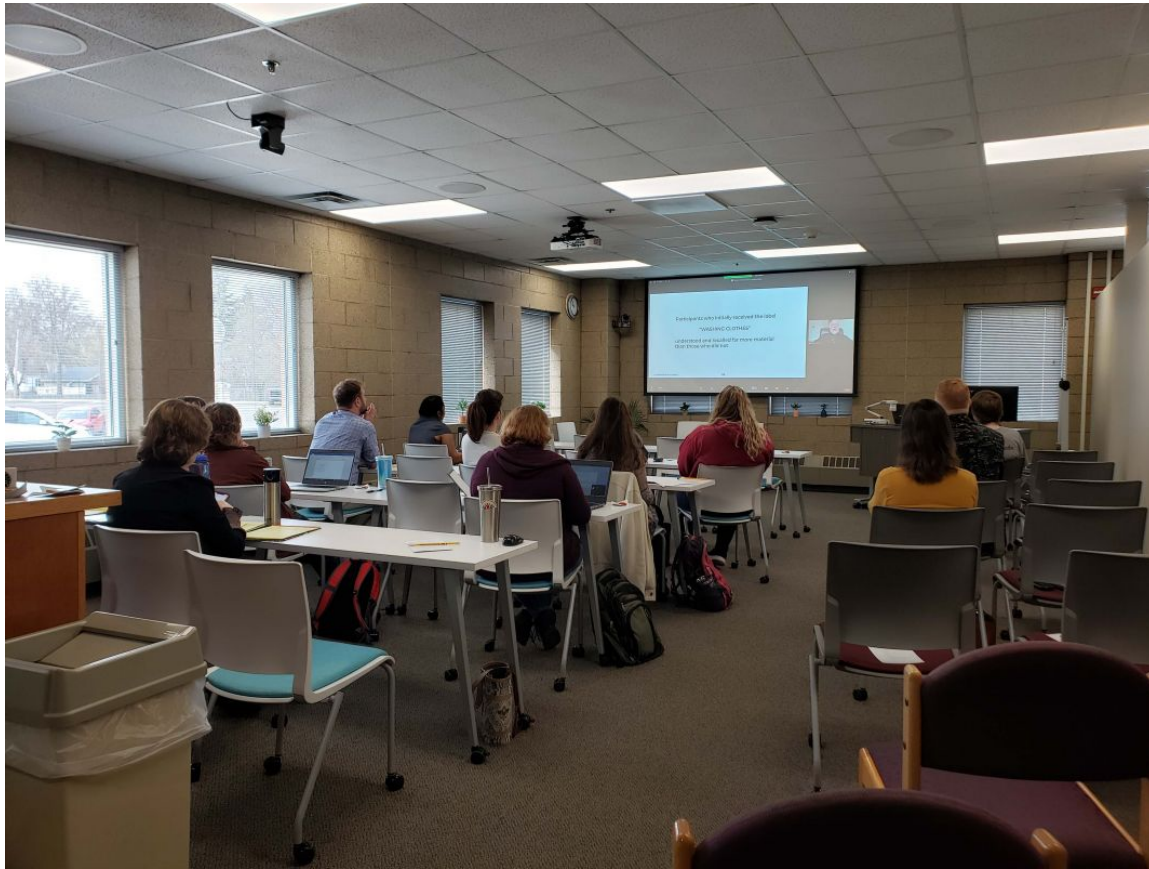
Figure 18. Distinctive Dialogue Conference Session

HyFlex Futures

Northern's initial HyFlex Certification cohort was largely a success. Eleven courses were offered as HyFlex in Spring 2022: nine were offered by faculty enrolled in the HyFlex certification program, and two were offered by the Director of CETL. Of the ten faculty who enrolled in the program, nine successfully completed it and one chose not to continue midway through the spring because he did not think the delivery method would work for his course content. In Fall 2022, seven courses will be offered as HyFlex. Additionally, our counseling program is making strides to offer all of the courses in their degree program as HyFlex. We will continue offering HyFlex certification in the upcoming academic year, but due to funding, we will only be able to train four faculty members. Finally, working with faculty from Northern's masters in Instructional Design and E-learning program, we will be offering a HyFlex training Graduate Certificate starting in Fall 2022. This graduate certificate will enable educators outside of Northern to benefit from CETL's research and experience, faculty expertise, and Northern's facilities and equipment.

Moving forward, we at CETL support Northern growing its HyFlex program because it makes education more accessible to all students, especially those who have traditionally been excluded from higher education because of their work schedules, family needs, tribal obligations, disabilities, or geographic locations. HyFlex can also make faculty's lives easier because they are already planning for multiple modes of attendance, which means they don't need to make last-minute accommodations for students who cannot attend face-to-face sessions.

Additionally, we realize that students will increasingly expect more flexible methods of instruction, since they know contemporary technologies enable them to attend their courses in a variety of modes. For example, this year, many faculty have told us that students have asked if they can attend via Zoom while they are out of town or if the faculty will record and share lectures and activities. These local anecdotes align with national data on student desires. A recent survey of students who attended college in Fall 2020 and Spring 2021 found that the pandemic learning experience

improved their perception of online courses, hybrid courses, and the use of digital tools. Fifty-seven percent of respondents said their perception of online learning improved due to the experience, 48% said their perception of hybrid learning improved due to the experience, and 52% said their perception of digital tools improved due to the experience. More importantly, these changes in perception have led to students wanting to take more online and hybrid courses. Seventy-three percent of students said they would like to take more fully online classes in the future, 68% said they would like to take more hybrid courses in the future, and 68% said they would like to see more digital tools in their face-to-face courses (McKenzie 2022). If institutions of higher education want to survive, they need to meet student needs, which means faculty will need to learn how to teach in multiple modalities and to do so well. At Northern, doing this well means rigorous HyFlex training programs for interested faculty, which we believe will lead to better learning experiences for students.

Works Cited

Bali, M. "Creating a HyFlex Classroom Community: Using Liberating Structures to Create Community in the HyFlex Classroom." HyFlex Half Day. 30 Nov. 2020, Northern State University, Aberdeen, SD. Workshop.

Beatty, B. *Hybrid-Flexible Course Design: Implementing Student-Directed Hybrid Classes.* EdTech Books. 2019.

—. "Assessing Learning in HyFlex." HyFlex Cohort. 06 Oct. 2021, Northern State University, Aberdeen, SD. Workshop.

Bockorny, Kristi, et al. "Student Engagement in HyFlex." 11 May 2022, Northern State University, Aberdeen, SD. Panel Discussion.

Bruff, D. "Intentional Tech/HyFlex/Northern State." HyFlex Cohort. 20 Oct. 2021, Northern State University, Aberdeen, SD. Workshop.

Caruana, V. "Designing Meaningful and Measurable Outcomes: A First Step in Backwards Design." *Faculty Focus.* 24 June. 2019. https://edtechbooks.org/-hRa. Accessed 8 Sept. 2022.

Dixon, M. "Engaging Online Students." Faculty Training, 7 Jan. 2020, Northern State University, Aberdeen, SD. Keynote.

Downs, T. "Message from President Downs: Campus Update COVID 19." Received by Ben Harley and Danette Long, 12 Mar. 2020.

—. "Message from President Downs: Fall 2020 Semester." *NSU News*. 1 May 2020. https://edtechbooks.org/-vwzJ. Accessed 15 July 2022.

—. "NSU Update - Response to COVID-19: March 24, 2020." Received by Ben Harley and Danette Long, 24 March 2020.

Fisher, Michael R. Jr., and Joe Bandy. "Assessing Student Learning." *Vanderbilt University Center for Teaching.* 2019. https://edtechbooks.org/-eVq. Accessed 8 Sept. 20.

Gilliard, C. "Digital Equity during a Pandemic." Faculty Training, 16 Sept. 2020, Northern State University, Aberdeen, SD. Workshop.

Hayman, J. "No Stress HyFlex." Faculty Training, 22 June 2020, Northern State University, Aberdeen, SD. Workshop.

Kelly, K. "Exploring Equity, Equivalency & Effort in HyFlex Courses." HyFlex Cohort, 11 Feb. 2022, Northern State University, Aberdeen, SD. Workshop.

Kelly, K, and Todd D. Z. *Advancing Online Teaching: Creating Equity-based Digital Learning Environments*. Stylus Publishing, LLC, 2020.

Kerschbaum, S. "Access and Accessibility in Classrooms." Faculty Training, 25 March 2021, Northern State University, Aberdeen, SD. Workshop.

Kosslyn, S. *Active Learning Online: Five Principles that Make Online Courses Come Alive*. Alinea Learning, 2021.

—. "Active Learning Online." Distinctive Dialogues, 11 May. 2022, Northern State University, Aberdeen, SD. Keynote.

Kshetri, N. "Remote Education Is Rife with Threats to Student Privacy." *The Conversation*. 6 Nov. 2020. https://edtechbooks.org/-Qpzf Accessed 8 Sept. 2022.

Lapka, J. "HyFlex Fall 2020." July 2020. Accessed 15 July 2022.

Littlefield, C. "Rethinking the Classroom for HyFlex Learning." HyFlex Cohort. 25 Oct. 2021, Northern State University, Aberdeen, SD. Workshop.

Long, Danette, et al. "Active Learning HyFlex." 11 May 2022, Northern State University, Aberdeen, SD. Panel Discussion.

Bockorny, K., et al. "Student Engagement in HyFlex." 11 May 2022, Northern State University, Aberdeen, SD. Panel Discussion.

McKenzie, L. "Students Want Online Learning Options Post-Pandemic." *Inside Higher Ed.* 27 Apr. 2021. https://edtechbooks.org/-CnnJ. Accessed 15 July 2022.

Mammenga, B. Personal interview. 18 Aug. 2022.

—. "Reports Summarizing SOI Feedback." Received by Ben Harley and Danette Long, 14 July 2022.

—. "Question: Please Read and Respond." Received by Ben Harley and Danette Long, 13 July 2023.

Miller, J. B., et al. "Student Choice, Instructor Flexibility: Moving Beyond the Blended Instructional Model." *Issues and Trends in Learning Technologies*. The University of Arizona. https://edtechbooks.org/-Hks. Accessed 8 Sept. 2022.

Moses, T. "5 Reasons to Let Students Keep Their Cameras Off During Zoom Classes." *Fast Company.* 21 Aug. 2020. https://edtechbooks.org/-IEFk. Accessed 8 Sept. 2022.

NAME.org. "What is Equity?" *National Association for Multicultural Education*. https://edtechbooks.org/-wuJB. Accessed 8 Sept. 2022.

National Center for Education Statistics. "Northern State University." *College Navigator*. https://edtechbooks.org/-GLlm. Accessed 1 July 2022.

Northern State University. "Assurance Argument: Northern State University - SD." Northern State University. 28 June 2021.

NSU News. "Update on COVID-19 Precautions: March 16." Received by Ben Harley and Danette Long. 16 Mar. 2020.

Office of Institutional Research and Assessment. "SOI Results: Spring 2017- Spring 2020." *Northern State University*. 19 June 2020.

—. "SOI Results: Spring 2017 - Spring 2021." *Northern State University*. 6 Aug. 2021.

Opportunity Zones Database. "Census Tract 9515, Aberdeen, South Dakota." *OpportunityDB*. https://edtechbooks.org/-JhNQ. Accessed 1 July 2022.

Participant A. Personal interview. 19 Nov. 2020.

—. Personal interview. 10 Dec. 2020.

Participant B. Personal interview. 08 Oct. 2020.

—. Personal interview. 11 Nov. 2020.

—. Personal interview. 01 Dec. 2020.

Participant C. Personal interview. 22 Oct. 2020.

Participant D. Personal interview. 09 Nov. 2020.

—. Personal interview. 04 Dec. 2020.

Participant E. Personal interview. 19 Oct. 2020.

Participant F. Personal interview. 08 Oct. 2020.

—. Personal interview. 02 Dec. 2020.

Participant G. Personal interview. 02 Dec. 2020.

Participant H. Personal interview. 07 Sept. 2020.

—. Personal interview. 01 Dec. 2020.

Participant I. Personal interview. 23 Nov. 2020.

—. Personal interview. 07 Dec. 2020.

Participant J. Personal interview. 02 Dec. 2020.

—. Personal interview. 16 Oct. 2020.

Pfankuch, B. "Special Report Part 1: Teachers in S.D. Endure New Stress as Politics and Culture War Seep into Classrooms." *South Dakota News Watch*. https://edtechbooks.org/-XeBe. Accessed 1 July 2022.

South Dakota Board of Regents. *Fact Book: Fiscal Year 2022*. South Dakota Board of Regents, 2022. https://edtechbooks.org/-iiZF. Accessed 1 July 2022.

—. "Public University System Prepares for Fall Semester Launch." South Dakota Board of Regents. 1 May 2020. https://edtechbooks.org/-xWgN. Press Release

South Dakota Department of Education. *State Report Card 2020-2021*. South Dakota Department of Education. https://edtechbooks.org/-qVER. Accessed 1 July 2022.

Stanford, D. "Videoconferencing Alternatives: How Low-Bandwidth Teaching Will Save Us All." *Iddblog*. 16 Mar. 2020. https://edtechbooks.org/-fjsD. Accessed 8 Sept. 2022.

Sublett, C. "Distant Equity: The Promise and Pitfalls of Online Learning for Students of Color in Higher Education." *American Council on Education*. 2020. https://edtechbooks.org/-AvPR. Accessed 8 Sept. 2022

United States Census Bureau. "Quick Facts: Aberdeen city, South Dakota." *United States Census Bureau*. https://edtechbooks.org/-vmDN. Accessed 19 Aug. 2022.

Wanous, M. "Academic Planning for the COVID-19 Situation." Received by Ben Harley and Danette Long, 12 Mar. 2020.

—. "The Future of HyFlex Teaching at Northern." Received by Ben Harley and Danette Long, 30 June 2021.

HyFlex Learning: Starting from where you are

Temasek Polytechnic, Singapore

Shirley Tan & Loh Gin Hin

Technology   Faculty Development   Implementation

Introduction

During the COVID-19 pandemic, many higher education lecturers found it challenging to teach via videoconferencing due to their discomfort in teaching online and lack of competencies in thoroughly engaging students (Rapanta *et al.*, 2020). Likewise, it has not been easy for lecturers in Singapore to teach online and sustain online classroom engagement. Within the School of Applied Science (ASC) in Temasek Polytechnic, Singapore, students have had their fair share of cognitive and social struggles during this time.

Temasek Polytechnic (TP) is one of the five polytechnics that offers post-secondary education in Singapore. While Singapore is a city-state with high internet connectivity, learners and academic staff were taken by surprise when the country pivoted to a fully online Home-Based Learning (HBL) with the COVID-19 circuit breaker lockdown in April 2020. Faculties within TP are required to comply with the institution's COVID-19 Safe Management Measures (SMM) advisory in terms of percent footfall on campus while ensuring that there is no learner left behind. While academic staff remained stoic throughout all the reopening phases, they had to adjust their teaching and learning practices to comply with rapidly changing SMM. As such, the ASC school within TP employed HyFlex Learning to address their needs to pandemic-proof teaching and learning practices during reopening phases of COVID-19. Hyflex learning can be defined as a way of learning whereby students have the flexibility in the modes of participation; enabling them to choose either face-to-face class sessions in-person or via online without physically attending class (Beatty, 2019).

The ASC School's HyFlex Learning was the first reported use-case of HyFlex in TP. The ASC team employed innovative strategies to pivot the school's Teaching and Learning practices with active and sustained HyFlex class engagement during the COVID-19 pandemic while fostering strong buy-in from academic staff and learners.

Inclusion and Equity

ASC School aims to "pandemic-proof" its teaching and learning practices and not leave any learner behind during the COVID-19 reopening phases. During the reopening phases, schools in TP needed to align to several safe management measures such as small group sizes (e.g., not more than 5 students per group), safe distancing between groups, as well

as not more than 50 students per venue from May 2021 until October 2021. Although the initial objective for HyFlex Learning was to manage percent footfall on campus, the purpose of HyFlex Learning organically evolved into one that gives students autonomy, flexibility, and equity for learning. HyFlex Learning made provision for learners, who were well but were missing classes because of "Stay Home Notice". Up to 25% of the tutorial sessions are HyFlex, and ASC encourages all staff to be HyFlex-ready for all tutorial sessions. Thus, the School of ASC was able to support academically "at-risk" learners, and those learners without an optimal learning environment at home (e.g., unstable Wi-Fi, space constraints, etc.) through HyFlex Learning (onsite). This could have impacted their learning if HyFlex Learning had not been an option.

From Simple Tech to High Tech: Starting from where you are

The School of ASC took a "whole of faculty" approach by starting where people are. Technology adoption has always been problematic and rarely straightforward in terms of implementation. The ASC management also considered the fact that not everyone may be on the same page regarding technology adoption and readiness. As such, ASC got "buy-in" from academic staff by taking a stance of personal readiness and individual progression. Staff could start from simple technology to more advanced technology; learning from the process as they progressed. Moreover, there was also a lot of knowledge sharing of practices to enable them to learn from one another.

The initial cost of Hyflex enabling technology was also kept low so that everyone within the faculty could participate in Hyflex Learning. Simple hybrid-flexible classes were trialed using wireless earpieces (US$30) (Figure 1) to affordable "Plug and Play" devices which allowed zooming in of content on a whiteboard (US$90) (Figure 2) to more advanced devices displaying 360 conferencing capability (US$1000) (Figure 3 and 4). The School of ASC is currently experimenting with building special user-friendly classrooms with various audio and visual components (see Figure 5). The idea has always been about encouraging staff to dabble and try out so that they could conduct HyFlex classes smoothly and at their own pace. The approach enabled staff to work within a sweet spot of their comfort zone without sacrificing the quality of teaching.

Figure 1
Wireless headset

Figure 2
Sessions conducted using a "Plug and Play" device

Figure 3

A HyFlex Learning experience using 360 cameras with mic

Figure 4

Capture of Student's screen from home in the HyFlex Learning session
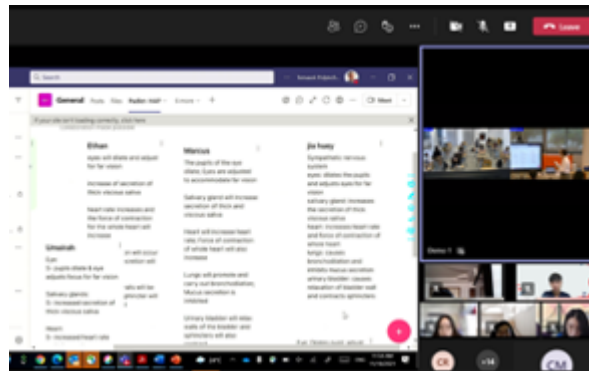
Figure 5

An impression of the "user-friendly" classroom as envisioned by the lecturers
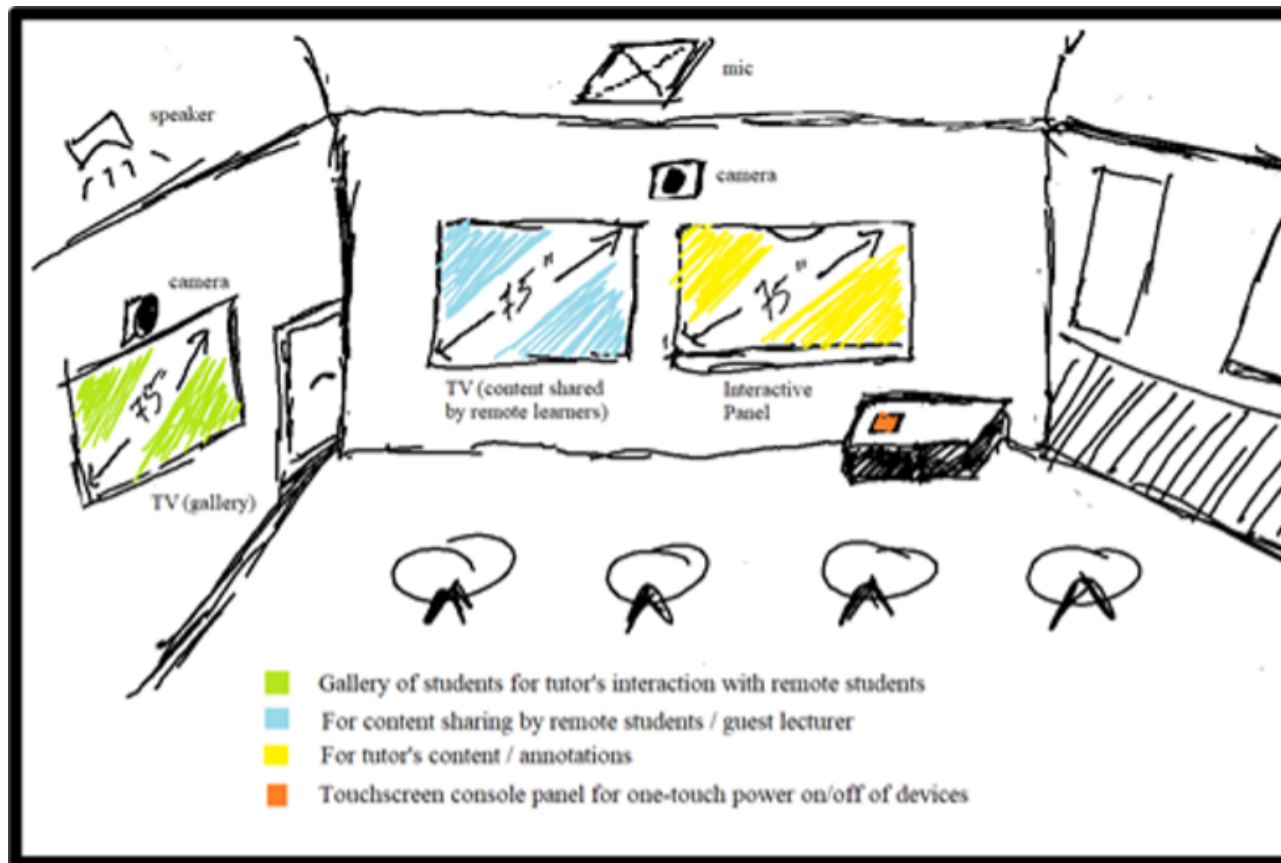
(Source: TP's HyFlex Learning Space Team – C.K. Boey, M. Kong, M. Yap, K. Goh, M. Fadlin, M.K. Goh, S. Tan-Ong, G.H. Loh)

Learning and relearning (On-going Data Collection)

The approach has been about starting where staff are in terms of readiness and allowing time for staff to learn and find their footing in the new technology. However, the journey in HyFlex would only be meaningful if all the stakeholders' voices were heard. It was necessary to find out from the students whether they were fully engaged during the HyFlex

session or not. Our hypothesis was that students would be fully engaged in the HyFlex session, but we wanted to verify this with students.

Student Engagement

The HyFlex learning journey concerns users and the only way to learn about their experience is to hear directly from them. In this case, the users include the lecturers and the students. The HyFlex Learning team at TP piloted a study on students' engagement (emotional, physical, cognitive) in a HyFlex learning environment. The data collection consisted of two parts: a student engagement survey and student focus groups.

Part 1: A survey on student engagement about their HyFlex learning experiences was conducted twice; once at the mid-point and again at the end of the HyFlex learning intervention to confirm the hypothesis that there would be significant student engagement in learning within the HyFlex environment. The BESS (Burch Engagement Survey for Students) (Burch et al., 2015) instrument was used. (See Appendix A.) The following definitions of engagement were used for the study.

Physical engagement

This relates to the extent to which people expend their efforts, both physical and mental, as they go about their jobs.

Emotional engagement

Emotional engagement encompasses positive and negative reactions to teachers, classmates, academics, and school, and is presumed to create ties to an institution and influence willingness to do the work. It refers to students' affective reactions in the classroom, including interest, boredom, happiness, sadness, and anxiety.

Cognitive engagement

Cognitive engagement draws on the idea of investment; it incorporates thoughtfulness and willingness to exert the effort necessary to comprehend complex ideas and master difficult skills.

Part 2: Two focus groups, comprising five participants each, were conducted with students from the HyFlex session. (See Appendix B.) Students were interviewed after the end of the HyFlex learning experience to provide an in-depth understanding of their experience. The following are some of the findings.

Findings

Figure 6 describes the Student Engagement Study Survey conducted at two points: Physical Engagement Survey 1 represented by PE_1 (at the mid-point of the HyFlex class) and the second survey is represented by PE_2 (at the end of the HyFlex class). Similarly for Emotional Engagement Survey 1 and 2, EE_1 and EE_2 and Cognitive Engagement Survey 1 and 2 represented by CE_1 and CE_2. The results showed that there was an increase in student engagement; specifically, physical engagement, emotional engagement, and cognitive engagement.

Figure 6

Student Engagement Survey Results
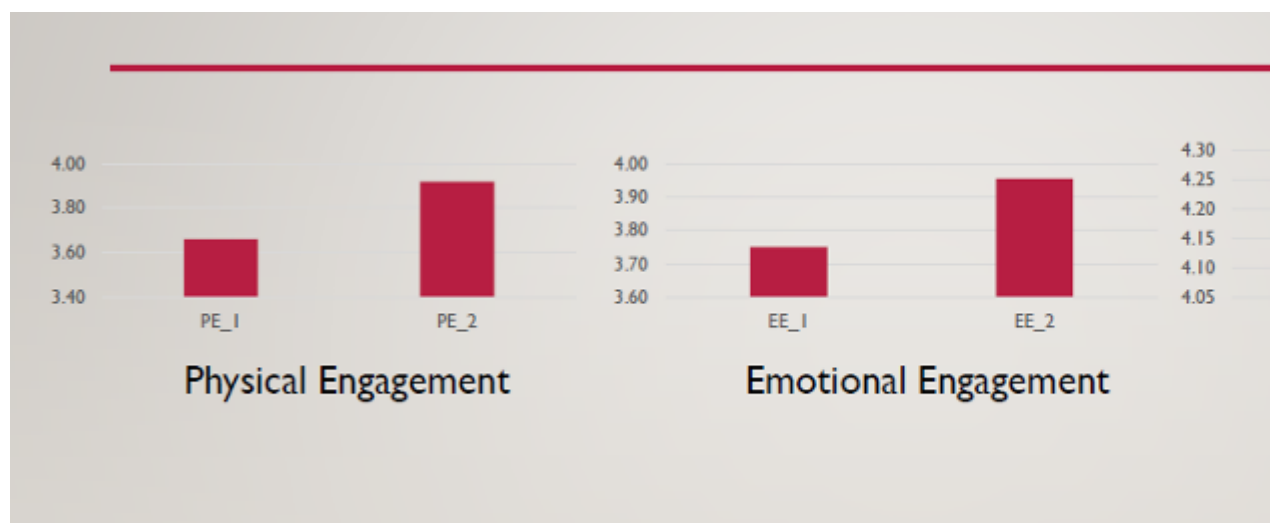
Note: Mean score for PE_1 = Physical Engagement Survey 1; PE_2 = Physical Engagement Survey 2; EE_1 = Emotional Engagement Survey 1; EE_2 = Emotional Engagement Survey 2; CEF2F_1 = Cognitive Engagement, Face 2 Face Survey 1; CEF2F_2 = Cognitive Engagement, Face 2 Face Survey 2.

Themes arising from the focus group part of the study include the following:

· **Challenges:** The students found that it was hard to work around that "new-found" freedom where they need to monitor their own learning. Most students recognized that the online part of HL needed different strategies but were uncertain about the right type to use. They also claimed that it was harder for them to "speak-up" when they are dialing in from home. Straddling between face-to-face and online classes also brought about some confusion in timetabling (scheduling).

· **Benefits:** Most students liked the flexibility in HL. Most of the HL lessons are also recorded, as such, they found it easier to review the lessons. In the home-based part of HL, they also liked the fact that they can get up late for class and yet, be on time.

· **Social Interactions:** Students found that in the "face-to-face" aspect of HL it was easier for them to connect with their lecturer and fellow classmates. Student S mentioned that "face-to-face makes me feel more of a sense of belonging…". Student E, " Face-to-face session in HL, the concentration level is a lot higher because there is this atmosphere where everyone is paying attention, and then it also gives a little bit of peer pressure…"

" For online aspect of HL, you are just staring at a screen, then there is not much interaction between the teacher and student. So, like, there's just something different about human-to-human interactions," as expressed by student A.

· **Technical challenges:** They were unfamiliar with the platform when they started using the collaborative platform as it was new to them. Some technical issues, such as frozen screens while the lecturer was talking, made following the class very difficult. When the home Wi-Fi was weak, the experience was also detrimental to learning. In some instances, students were unable to see the lecturer's slides during the session.

· **Learning Strategies:** Students realized that different approaches were needed in the two formats of HL. Taking notes, peer discussion, and asking lecturers questions were the key learning strategies they applied in the face-to-face environment. However, these learning strategies were not easily transferred to the online environment. The students had a routine way of doing self-study in the face-to-face environment but found it hard to keep up with their old routine in the online environment.

· **Self-regulation:** Students found that they procrastinated a lot in the online aspect of HL. They found that they were easily distracted and did not find "the urgency of learning" as the recorded sessions would always be available to them. They were also not sure of what kind of learning strategies to use in order to help themselves to persist in their learning. Some of the students tried out new learning strategies, others used old strategies that worked well in the face-to-face environment but did not work well in the online environment.

Data was also collected from the academic teaching staff in interviews. The following are some of the findings from the analysis of the interview data.

Staff sentiments

The academic staff members interviewed felt that they can engage onsite and remote learners cognitively and socially in their HyFlex classes through carefully crafted lessons. Furthermore, they also found the sharing of use cases of HL helpful, especially for those who are new to HL. Generally, the provision of affordable basic equipment such as wireless earpieces to academic staff enabled them to better engage onsite learners in HL.

Just like the common phrase, "it takes a whole village to raise a child", it took a "whole faculty" approach for HyFlex Learning to be implemented across the ASC school. The learning, designing, implementing, and finally, sharing was an iterative cycle (Figure 7) where everyone benefited from the experience. Before embarking on the further design of engagement with a different configuration of the technology, the team learned from their experience, then implemented a revised approach with the knowledge learned.

Figure 7

Iterative cycle: Learn, Design, Implement, Share

Limitations

There are some limitations to this pilot study as it only provided a snapshot of the phenomenon and only a small group of learners were surveyed and interviewed.

Conclusion

There is a place for further investment and investigation into HyFlex Learning Spaces as the School of ASC implement the next round of technology improvement. We've learned to "start from where you are and learn from the challenges". If anything, the COVID-19 pandemic has helped us develop the ability to rise above challenges through learning and re-learning.

References

Akkoyunlu, Buket & Yilmaz Soylu, Meryem. (2008). A Study of Student's Perceptions in a Blended Learning Environment Based on Different Learning Styles. *Educational Technology & Society.* 11. 183-193.

Beatty, B. J. (2019). Designing a Hybrid-Flexible Course: Creating an Effective Learning Environment for All Students. In B. J. Beatty, Hybrid-Flexible Course Design: Implementing student-directed hybrid classes. EdTech Books. Retrieved from https://edtechbooks.org/hyflex/hyflex_design

Burch, G.F., Heller, N.A., Burch, J.J.; Freed, R. & Steed, S.A.; (2015) Student Engagement: Developing a Conceptual Framework and Survey Instrument, *Journal of Education for Business,* 90:4, 224-229, https://doi: 10.1080/08832323.2015.1019821

Rapanta C, Botturi L, Goodyear P, Guàrdia L, Koole M. (2020). Online University Teaching During and After the Covid-19 Crisis: Refocusing Teacher Presence and Learning Activity. *Postdigital Science Education,* 2(3):923–45. https://doi: 10.1007/s42438-020-00155-y. Epub 2020 Jul 7. PMCID: PMC7339092.

Staker, H., Chan, E., Clayton, M., Hernandez, A., Horn, M.B., and Mackey, K. (2011). *The Rise of K–12 Blended Learning: Profiles of emerging models.* Innosight Institute. https://www.christenseninstitute.org/wp-content/uploads/2013/04/The-rise-of-K-12-blended-learning.emerging-models.pdf

Appendix A

Burch Engagement Survey for Students (BESS) G. F. BURCH ET AL.

Emotional engagement

1. I am enthusiastic about this class/course.

2. I feel energetic when I am in this class/course.

3. I am interested in material I learn in this class/course.

4. I am proud of assignments I complete in this class/course.

5. I feel positive about the assignment I complete in this class/course.

6. I am excited about coming to this class/course.

Physical engagement

7. I work with intensity on assignments for this class/course.

8. I exert my full efforts toward this class/course.

9. I devote a lot of energy toward this class/course.

10. I try my hardest to perform well for this class/course.

11. I strive as hard as I can to complete assignments for this class/course.

12. I exert a lot of energy for this class/course.

Cognitive engagement: In class

13. When I am in the classroom for this class/course, my mind is focused on class discussion and activities.

14. When I am in the classroom for this class/course, I pay a lot of attention to class discussion and activities.

15. When I am in the classroom for this class/course, I focus a great deal of attention on class discussion and activities.

16. When I am in the classroom for this class/course, I am absorbed by class discussion and activities.

17. When I am in the classroom for this class/course, I concentrate on class discussion and activities.

18. When I am in the classroom for this class/course, I devote a lot of attention to class discussion and activities.

Cognitive engagement: Out of class

19. When I am reading or studying material related to this class/course, my mind is focused on class discussion and activities.

20. When I am reading or studying material related to this class/course, I pay a lot of attention to class discussion and activities.

21. When I am reading or studying material related to this class/course, I focus a great deal of attention on class discussion and activities.

22. When I am reading or studying material related to this class/course, I am absorbed by class discussion and activities.

23. When I am reading or studying material related to this class/course, I concentrate on class discussion and activities.

24. When I am reading or studying material related to this class/course, I devote a lot of attention to class discussion and activities.

Appendix B

Guide for Focus Group Interview

1.   EMOTIONAL ENGAGEMENT

·   Like or dislike (e.g., video lectures, in-class learning activities)

·   Interest or boredom

·   Sense of belonging (e.g., individual pre-class learning, peer interaction)

2.   PHYSCIAL ENGAGEMENT

·   Tasks intensity (e.g., online learning tasks, homework, classwork)

·   Effort towards learning

·   Persistence and concentration (e.g., face-to-face lessons)

3.   COGNITIVE ENGAGEMENT (IN & OUT of class)

·   Self-regulation (e.g., strategies to plan, monitor, and evaluate)

·   Investment in learning (e.g., go beyond requirements, prefer challenge)

·   Coping strategies (e.g., facing failure or challenge)

Inclusion and Equity

Shirley Tan

Temasek Polytechnic

Dr. Shirley Tan is a senior educational developer at the Learning Academy of Temasek Polytechnic in Singapore. With over 20 years of experience in teaching and training and an additional decade in media design and technology consultancy, she has a wealth of knowledge and expertise in her field. Dr. Tan has been instrumental in driving change and innovation in the field of education. Her collaborative effort with the School of Applied Science at Temasek Polytechnic on HyFlex Learning has been highly successful, as evidenced by their winning of the institution's Education Innovation Award in 2021. Her research interest includes Self-Directed Learning, Hyflex Learning, Teaching in the Next Generation Learning Spaces, and Technology Adoption.

Loh Gin Hin

Temasek Polytechnic

Dr Loh has about 20 years of tertiary teaching and educational research experience in Temasek Polytechnic, Singapore and has a Doctorate in Educational Studies at the University of Sheffield (2021). His current educational interests include educational innovation, quality assurance and enhancement. As a trained microbiologist, Dr Loh is also interested in applying microbiology to ensure food safety. He also won several awards including five for Educational Innovation, namely "Academic Apprenticeship in Hospitals" together with S.C. Chew and staff from the Diploma in Biomedical Science (2008), "Teaching, learning and Assessing at the TP Animal Clinic" together with staff from the Diploma in Veterinary Technology (2013), "Enhancing Lab Demos using 3D VR Technology" with the Diploma in Biotechnology (2019), "Creating a 2-ways communication learning environment using ClassPoint" (2021) and "Hybrid Learning in ASC" (2021).

HyFlexK12

A Hybrid and Flexible Learning Option Given the Appropriate Circumstances and Conditions

Gina Riley, Ph.D. & Jerusalem Rivera-Wilson, Ph.D.

More educational models are needed to help address the new educational needs in K-12 learning environments. HyFlex education provides learning options in-person, asynchronously, and synchronously online, simultaneously. The pandemic has changed how K-12 schools, and institutions of higher learning in the United States and abroad are approaching and adopting this pliant model in allowing learners to choose both their learning experiences and environment (Beatty, 2019). However, many schools view HyFlex learning as an emergency solution to a pandemic problem. How can we dispel or reframe the myths associated with HyFlex education and transform it from a short-term learning solution to a lasting form of educational practice that allows for equitable, accessible, and innovative models and choices that benefit all students?

Introduction

In this chapter, we will share our experiences and research focused on HyFlex K-12. Our interest in HyFlex heightened from the urgent need to pivot to flexible learning options for K-12 students during the pandemic. As higher education faculty members who work with both in-service and preservice educators, given our 50+ years of remote and in-person teaching and learning experience, we were able to quickly adapt and adjust pedagogical approaches and modes of delivery to best meet the needs of our learners.

HyFlex instruction began as a way for colleges and universities to provide in-person and fully online students at the same time (Beatty, 2019). HyFlex found renewed purpose post-pandemic, as K-12 schools, colleges, and universities attempted to transition students back to brick-and-mortar schools, while still adhering to social distancing mandates (Riley, Baecher, & Guy, 2022). An advantage of HyFlex is that it allows schools to maintain instruction when previously classes would have been cancelled, because with HyFlex learning, remote instructional options are already in place (Maloney & Kim, 2020).

Rationale

During the pandemic crisis, education at every level was forced to be more "elastic" minded about how students could gain access to education. How institutions of learning were able to pivot to create alternative learning options took a number of forms depending on resources and access. This type of emergency learning unmasked another pandemic, the widespread epidemic of inconsistent, inequitable, and inaccessible education to all. For most K-12 schools and or

districts, systematic educational learning systems varied, and for some, were nonexistent. The constant adaptations and unpredictable expectations coupled with a world filled with human and economic loss caused chaos for children, families, and teachers resulting in long and short-term emotional and educational scarring (Anderson, Flaverio, & McCain, 2021). This difficult time in history forced many educational settings to urgently adopt more flexible learning options that did not require students to learn under the same roof and four walls (see Figure 1). This included using various learning management systems and modes of instruction without training or support. Despite the academic setbacks due to learning loss, many lessons were gained from education as a result of the pandemic that can inform future academic structures (Brooks, 2023).

Figure 1. Example of Technology Used for HyFlex Teaching. Photo Credit: Jay Greenberg, Romoland School District, California USA
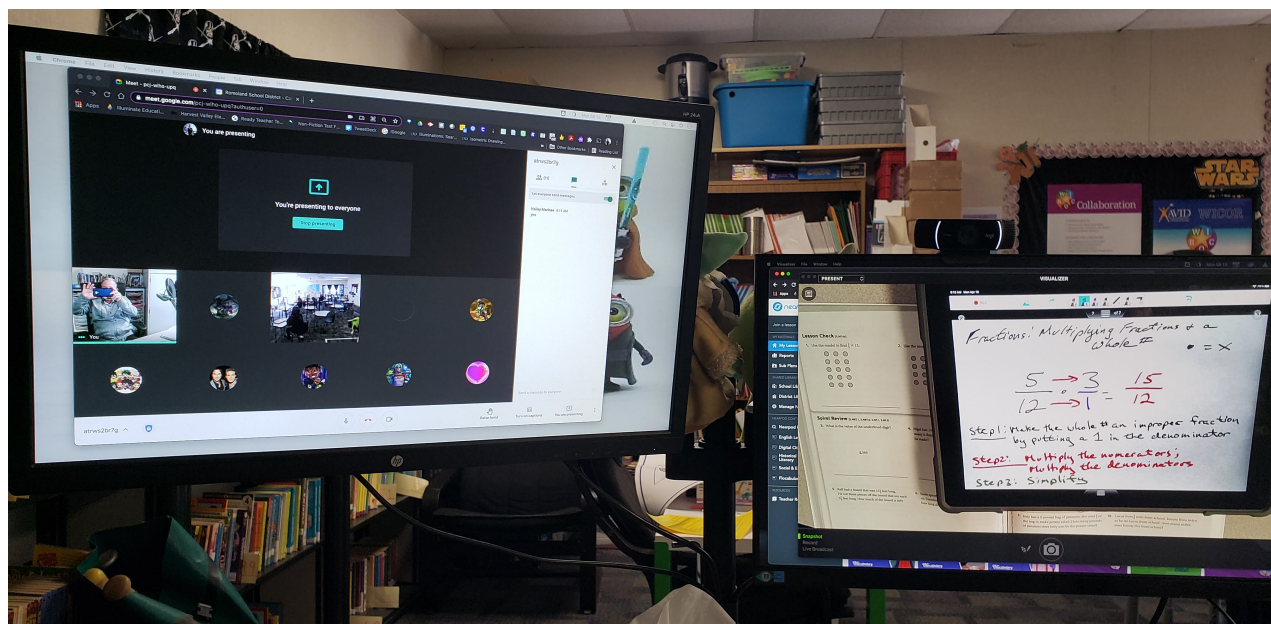
There are many pedagogical and personal reasons why students, parents, and teachers may choose a HyFlex modality. HyFlex learning allows individuals choice regarding the style in which they learn. It also has benefits in terms of accessibility, giving students and teachers with mobility issues, students who are not feeling well, or students and teachers with visible or invisible disabilities an alternative way to learn and access the curriculum. HyFlex classroom environments naturally follow the major principles of Universal Design for Learning (UDL) (CAST, 2022), creating innovative, engaging, and equitable classroom spaces (Riley, Baecher & Guy, 2022).

Post-pandemic, education needs a revolution (Brooks, 2023). The K-12 classroom can no longer be seen only as a physical space. Instead, there needs to be a new type of classroom, allowing students agency and preference in the way they want to learn and attend school. HyFlex learning recreates and redefines the classroom in a way the world hasn't seen in years. This change parallels what is happening in spaces of higher education and in the workforce, where remote or HyFlex work, and school, are becoming more popular (Penrod, 2022).

Funds and resources must be invested to make HyFlex work. Parents, students, administrators, and other stakeholders need to buy into the model, through parent and professional development information and workshops. HyFlex teaching involves preparation and support (Riley, Baecher, & Guy, 2022). This includes developing K-12 teacher skills in technology, pedagogy, and student engagement specifically for the HyFlex modality (Romero Hall & Ripine, 2022), as well as making sure working HyFlex technology is available in classrooms for teachers who choose to teach in this modality. Equally important, educational technology support staff must be available to assist teachers and students to ensure a seamless school experience (see Figures 2 and 3).

Figure 2. Example Technology (Tablet) Used for HyFlex Teaching. Photo Credit: Jay Greenberg, Romoland School District, California USA
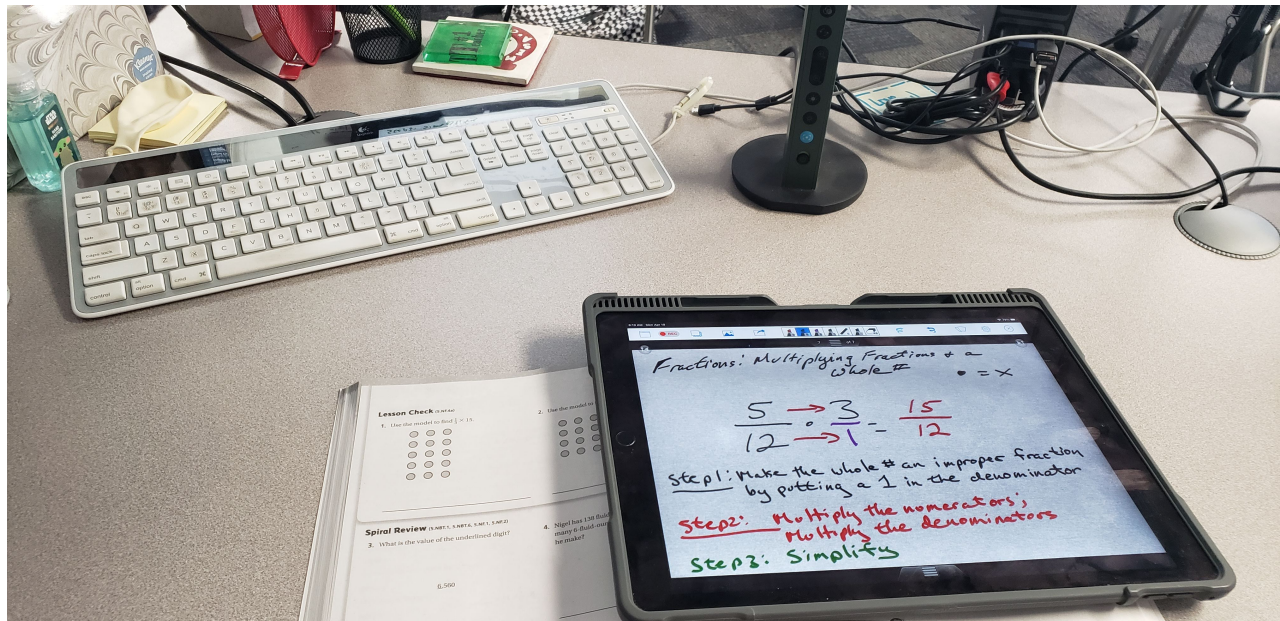
Figure 3. Example of Technology in the HyFlex Classroom. Photo Credit: Jay Greenberg, Romoland School District, California USA
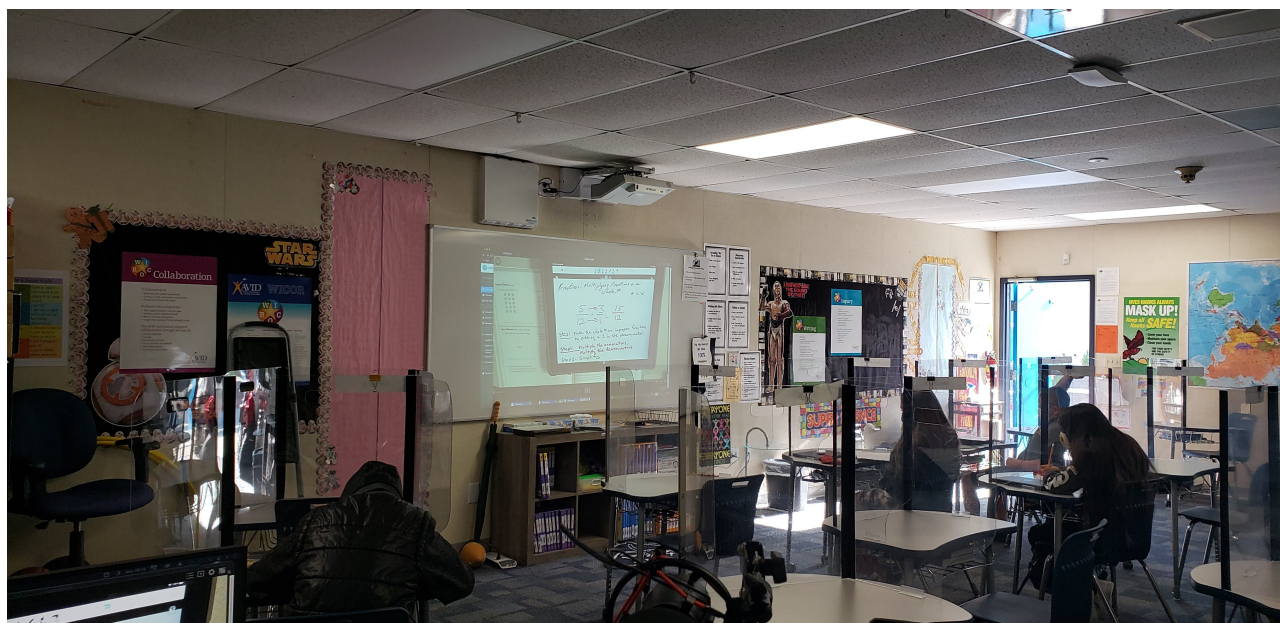
Benefits of HyFlex K-12

A HyFlex learning environment allows K-12 students to attend and engage with their class virtually or within a traditional physical classroom space. HyFlex learning also provides equitable access for students with a range of physical, learning, and/or emotional dis/abilities. As an example, a student who temporarily has to use a wheelchair or crutches

due to an injury can attend class remotely and not lose class time. They also don't have to worry about accessible transportation to their school or waiting for an "elevator key" to get to their classroom. A student who suffers from anxiety or school refusal may have the opportunity to attend class asynchronously or synchronously and would still be able to form relationships with their teacher(s) and classmates. Post-pandemic, a student who tests positive for COVID will be able to access coursework and instruction through the HyFlex modality. The HyFlex classroom space is also helpful for students with a variety of learning preferences. Students who prefer more interpersonal learning experiences have the opportunity to attend in-person or synchronously; students who prefer more self-paced classes can participate asynchronously (Riley, Baecher, & Guy, 2022). HyFlex learning environments also allow for continued instruction given specific circumstances including snow days or state/city-wide emergencies (CAT Subcommittee on Enhancing Teaching, Learning, and Support, 2022). A significant benefit of HyFlex instruction is the ability to open up language or AP classes to students in rural districts, providing learning opportunities that may not be readily available to some students. For example, a Chinese language class offered in a large urban high school can be opened up to those attending classes at a school in a rural area. Community colleges can also partner with local school districts to provide options for high school students to take college classes and earn college credits via a HyFlex modality.

Another helpful benefit of HyFlex learning in K-12 settings is the facilitation of intrinsic motivation it naturally provides. Within education, curiosity and engagement are essential to academic success (Akey, 2006). The more choices students have regarding their learning environment, the more intrinsically motivated they become (Dec & Ryan, 2000). HyFlex learning is one way to facilitate intrinsic motivation in learning, allowing students choice and flexibility in the way they learn, naturally adhering to basic principles of Universal Design for Learning (UDL) (Hodnett, Gryta, Schnell, & Riley, 2022). This increased flexibility has ripple effects, allowing for greater student engagement and investment; as well as a possibility for increased enrollment. Post-pandemic, parents of K-12 students are looking for more choice and flexibility regarding their child's educational experience (Eggleston & Fields, 2021), and allowing for HyFlex learning options in public schools may provide parents and students with an innovative, attractive option.

Challenges of HyFlex K-12

There are many benefits to HyFlex teaching and learning in the K-12 environment, but there are also many challenges. For example, teachers will need assistance and training in developing their classes in multiple modalities, including the asynchronous modality. There may also be cognitive overload issues in both teachers and students; because of the need to attend to synchronous and in-person modalities all at once (Huang, 2017). Students and parents/guardians must also learn how to work with the element of choice in a HyFlex environment, and there is an educational component associated with this. One of the most noted challenges within HyFlex teaching and learning is the challenge associated with technology, including technology acquisition; technology use; and technology support (Hirshmann & Riley, 2023; Riley, Baecher, & Guy, 2022).

Hirschmann and Riley (2023) have noted four challenges to HyFlex teaching and learning from the following perspectives: Physical space challenges, technology challenges, pedagogical challenges, and student challenges. We have added one for consideration in the K-12 environment, namely, attendance challenges.

Physical Space Challenges:

A HyFlex equipped room may look different than your average K-12 classroom. If portable technology like OWLs or cameras on tripods is used, attention needs to be paid to the placement of these instruments for accessibility and safety, as well as for ease of repair. If mounted cameras and mics are used, educational technologists or technology support staff need to be available during class time for any issues that may come up during class.

Figure 4. Example of HyFlex Classroom Space. Photo Credit: Jay Greenberg, Romoland School District, California USA

Technology Challenges:

Even the most advanced of HyFlex classrooms may encounter audio, video, and connection issues. It is important for teachers to have a protocol for "getting students back" if this happens. The protocol may be for the teacher to engage in troubleshooting activities first, and then call on technology support. The teacher may also need to have set plans regarding how to review missed classwork with students who encountered an audio or video-based issue while engaging synchronously or asynchronously online.

Figure 5. Example HyFlex Teaching Workstation. Photo Credit: Jay Greenberg, Romoland School District, California USA

Pedagogical Challenges:

Along with teachers needing support in creating class activities and lesson plans in multiple modalities; there is also the cognitive overload and teaching anxiety that can happen when an instructor must attend to both synchronous and in-person students. Teaching assistants and co-teachers can provide assistance and support here. For example, teaching assistants or co-teachers can monitor chat or backchannel conversations; as well as technical issues, as the lead teacher focuses on content.

Student Challenges:

Not much has been written regarding the student experience in a K-12 HyFlex environment, however, this is so important to consider. In every classroom space, students, teachers, and parents or guardians must be partners in learning; and this is especially important within a HyFlex environment. Well-designed HyFlex courses are ones where all students have relationships with each other; relationships that transcend modality choice. A teacher must specifically plan a time when synchronous students can chat casually with their in-person peers; and when asynchronous students can be involved in synchronous and in-person student conversations (Hirschmann & Riley, 2023).

Attendance Challenges:

How to "count" student attendance in a K-12 environment is something important for schools, districts, and states to consider. Student workload hours must be equivalent between all modalities within a HyFlex learning environment (Rhoads, 2021). If a student attends class asynchronously, required hours of schooling are required to be recorded. A K-12 work estimator (similar to the one Wake Forest University has created here https://cat.wfu.edu/resources/tools/estimator2/) can be utilized to calculate school attendance hours given teacher or technologist input of class information, class materials, and other assignments.

Misconceptions

The most frequently mentioned misconception surrounding K-12 HyFlex teaching involves HyFlex being seen as a temporary solution to a pandemic problem. (The same misconception surrounds online learning in K-12). It is important to note that just like fully online instruction; HyFlex instruction has been used by many school districts for years. For example, Newton Public Schools in Suffolk County, New Jersey offers students a HyFlex model; as does the Xavier School in the Philippines. Many International Baccalaureate (IB) Schools also offer HyFlex models. The main issue preventing the growth of the HyFlex modality in K-12 schools is that during the pandemic, many K-12 schools cobbled together a HyFlex learning plan; thinking of it as temporary until "things get back to normal". There was a lack of training and understanding about HyFlex, leading to non-optimal teaching and learning outcomes. The reality, however, is we are living in a "new normal", and schools must move forward in their thinking to advance learning and success for all students (Brooks, 2023). The growth of HyFlex K-12 should continue, given new technological advances, tools, and increased training stemming from the learnings of the pandemic (Rodriquez, 2022).

Another frequently mentioned misconception concerning HyFlex teaching and learning is that a HyFlex environment creates double the planning and workload for teachers. We agree that a K-12 HyFlex classroom is a new classroom structure, with its specific challenges. However, planning a HyFlex lesson, once mastered, is not very different timewise from planning a traditional K-12 lesson, if HyFlex teachers utilize best practices and plan the asynchronous model first. Planning the asynchronous K-12 HyFlex model allows teachers time and space to reflect on how they are in person and virtual classrooms utilize Universal Design for Learning, allowing equitable access for all students, including multilingual language learners and students with disabilities. As an example, planning an asynchronous module first asks K-12 teachers to deeply reflect on the readings they give their students. Are they differentiated? Do they match lesson objectives? Do they adhere to accessibility mandates? Recording an asynchronous lesson gives the K-12 HyFlex teacher time to rehearse a lesson before giving it to their synchronous and in-person students, and allows for greater mastery of content. Finally, preparing activities for asynchronous students allows time for the HyFlex teacher to think about how each activity will also look for synchronous and in-person students. For example, if a K-12 HyFlex instructor assigns students a short oral presentation, the in-person students can do the oral presentation in class; while

synchronous students can provide the presentation via video conferencing software. Asynchronous students can choose the option of recording the lecture and posting it on the K-12 learning management system.

An additional myth surrounding HyFlex education is that all students learn best in person and that students and teachers prefer in-person learning. In reality, this is false. According to a Pew Research study (2021), 65% of teens said that they preferred in-person over hybrid or remote learning options. Nine percent stated they would prefer a remote environment; while 18 percent preferred a more hybrid experience. Seven percent of students weren't sure what type of environment they preferred. These statistics also differed by race, gender, and socioeconomic status. For example, only 50% of Black students said they preferred an in-person schooling environment, with both Black and Hispanic teenagers stating they would prefer a mix of online and in-person instruction post-pandemic (Anderson, Faverio, & McClain, 2021). Many teachers are also requesting increased remote or flexible learning options, despite union or school district hesitancy (Zimmerman, 2022). The American Psychological Association has also espoused the benefits of flexible learning options, including enhanced intrinsic or autonomous motivation, better access to telehealth or flexible mental health services, decreased school bullying, and a more equitable environment for students with disabilities (Abramson, 2021).

Professional Development and Preparation

One of the best ways to provide training and professional development to pre-service and in-person teachers on HyFlex teaching and learning is to provide more HyFlex classes within schools of education. Gina, for example, teaches student teaching/practicum seminars within a HyFlex model, so teacher candidates get exposure to the HyFlex modality firsthand. If student teachers are further interested in the HyFlex model, clinical placement supervisors can seek out teaching environments that have a HyFlex model already in place; so that student teachers get practice utilizing the model with a cooperating or mentor teacher. Professional development can also be provided to preservice and in-service teachers regarding flexible learning environments and their benefits to students. In our experience as professors within Schools of Education, in-service and preservice educators are highly interested in providing choice, options, and flexibility for their students; and seek out opportunities to learn more about them.

Case Studies

We provide the below case studies so districts, administrators, teachers, parents, and students can discuss the benefits and challenges of a HyFlex modality; and how HyFlex may best work in their schools. Feel free to use these studies for discussion in your own districts.

Case Study 1: World Language Instruction

Ms. Margolis is a Chinese language teacher who teaches in a rural high school. With district approval, she decides to teach her course in a HyFlex mode of instruction for the following reasons:

● She believes in student choice in education and instruction.

● Offering the HyFlex option allows students from other districts to join her classroom.

● Her students are comfortable with online learning and are comfortable accessing a course in various modalities.

Over the summer, to prepare her students and their families, she wrote a letter and included the course syllabus, introduced herself, outlined the class format, and defined and explained the term HyFlex. Before the start of the new academic year, Ms. Margolis offered several informational sessions for parents/guardians and students synchronously and asynchronously to discuss the course and address questions. Ms. Margolis carefully and equitably modified her coursework to match the HyFlex mode of instruction. For all classes, students had the choice of which modality to

participate in the class (asynchronous, synchronous, or in-person). Most students chose an in-person modality, except for students from other districts who joined synchronously and/or chose an asynchronous learning environment. Finally, all students, during the first class, took a HyFlex learning preference assessment, to see what modality might work best for them. This HyFlex preference assessment was given electronically, so all students had equal access. They discussed this self-assessment in class.

At the beginning of a given week, Ms. Margolis would post a video lecture and all course materials within the class learning management system. For asynchronous students, she posted questions and activities that would be discussed/completed within the in-person and/or synchronous environments. All students had access to the same materials, lectures, activities, and discussion questions in all modalities. Overall, students had a positive experience with HyFlex, except for some minor technology glitches that occurred for the students who synchronously participated in the class. Ms. Margolis's students (and their parents/guardians) asked for more HyFlex class opportunities moving forward. The district was happy with the experience and agreed to offer more HyFlex classes moving forward.

Reflection: What are the benefits of HyFlex within this scenario? What are the challenges? If you were to create a HyFlex "self-assessment" for your students, what would that look like? What elements might it contain?

Case Study 2: District-Provided Instruction

A parent, Mrs. Perez, reaches out to her son Fernando's school district to discuss his long-term health and academic needs. This year, the district has decided not to support any hybrid or flexible learning options while the neighboring district has decided to pilot HyFlex for the junior and senior classes to reduce the growing rate of absenteeism. Mrs. Perez shared with the district that during the pandemic, Fernando, an 11th grader flourished socially, emotionally, and academically because:

● he met with his peers and teachers regularly synchronously

● lessons were recorded and he could revisit the content as often as needed to solidify his understanding

● his academics were not interrupted when he needed to seek treatments for his chronic condition

Although the school district was aware of the neighboring district's pilot and was supportive of Mrs. Perez's suggestions to continue virtual learning options for certain classes for grades 11 and 12, they felt it would be best for at least the next two years to let everything go back to normal within their district.. Discontent with the district's response and aware of other families interested in more remote learning options, Mrs. Perez pulled a group of concerned parents/guardians and students to speak at the School Board Meeting. The group consisted of parents/guardians and students who have chosen to pursue 1:1 instruction provided by the school district for a myriad of reasons (e.g., social, emotional, and health), as well as others who were interested in having a HyFlex or Hybrid learning option for their children/teens. These individuals spoke about the benefits that HyFlex options would have on their children but also benefits to the school environment as a whole.

Reflection:

What do you think parents saw as the benefits of HyFlex within this scenario? What were the challenges possibly faced by the district? If you were on the school board, what would be your recommendation to the district?

Case Study 3: Performing Arts Academy

Ben, a 10th Grader at Performing Arts Academy, has recently been selected as a vocal and movement artist to be on a national tour for musical theater. Whitney, also a 10th grader at PAA, has been selected to be one of the principal dancers for an upcoming ballet production. These two students are examples of the opportunities that students at PAA are offered throughout the year. PAA is a highly selective school for gifted and talented artists in music, dance, and visual and performing arts. As a result of this, the school has a high rate of absenteeism due to students being out for auditions or performance obligations.

Although the school has policies and procedures for short-term and extended absences, students who are away from the school generally have a difficult time meeting their academic obligations and feel disconnected from the school and their peers. PAA is concerned about its students, school community, as well as its state funding. To continue to have a vibrant school where students can call their academic home, PAA is considering adopting a hybrid and flexible (HyFlex) model for students who have approved short-term and long-term performing opportunities. As a result, students will be able to participate academically in person, asynchronously, and synchronously.

PAA's rationale for the HyFlex proposal is as follows:

● Students can participate fully in their academics at any time regardless of their circumstances which will minimize academic slides.

● Teachers will be able to stay connected and monitor the student's academic progress.

● Students will be encouraged to participate via Zoom to directly benefit from instructional training classes. All lessons will be recorded and accessible at any time for students to access and revisit the content.

● Students will feel able to continue to grow artistically and academically while maintaining social and emotional relationships with their community.

Reflection:

In this scenario, are there benefits of adopting HyFlex? What are some of the challenges? Why would a HyFlex model work or not for this school and its students?

Case Study 4: Snow Days

Vista View School District (VVSD) has 1,500 K-12 students and is located in the foothills of a major mountain range. In the past several years there has been an increased number of snow days needed which extended the academic year past June. Parents and students are unhappy that the school calendar was constantly in flux. This past year, even after the school district took back the weeklong April break, students needed to attend school until July 1st. The Vista View area financially heavily relies on tourism in the winter and summer months. This means the community is dependent on student employees especially until after Labor Day. Also, students who wish to participate in athletic and other academic opportunities outside of Vista View are unable to do so due to the uncertainty of when the school year will end. Teachers have noticed that given the elongated academic year, student motivation and morale have significantly declined which is impacting student performance. Given that there are not many academic options in Vista View, parents are exploring online schools or homeschooling.

Since starting the school year in August is not feasible, the teachers of Vista View have requested an opportunity to share with the VVSD School Board an alternative to pushing out the school year which was vetted and supported by administration, parents, and students. The teachers would like the school board to consider adopting Emergency Remote Learning Days (E-Days), which would include HyFlex instruction.

The teachers' justification to adopt an E-Day Plan is based on the following:

● Less academic disruption and continuity in student learning can be accomplished by retaining a certain number of snow days but once exhausted, pivoting to E-Day instruction. This means, in lieu of canceling school, the district can pivot instruction in a Hybrid Flexible way (asynchronously and synchronously online). For academic continuity reasons, and to prevent learning loss, any weather-related school closure of more than a day will transition students to virtual learning.

● More meaningful learning. Tacking additional make-up days at the end of a long school year is less academically beneficial.

● Increases student morale, motivation for learning, and academic performance.

● Flexible participation mode based on student need or preference. HyFlex allows students the choice to work at their own pace and time.

Reflection:

What are the benefits and challenges of adopting a flexible virtual learning alternative within this case study? If you served on the VVSD School Board what questions or concerns might you have? How would you vote and why?

Conclusion

As more flexible options are introduced into the K-12 sphere, it is essential to think about how districts may utilize HyFlex teaching and learning to enhance their current offerings. We suggest a backward planning mindset, thinking first about how HyFlex can be utilized in grades 9-12 to offer AP courses, foreign language courses, and courses that give college credit . Many K-12 teachers and administrators have shared with us that they believe high school classes are the ideal place to begin a HyFlex learning option, as it would give students an opportunity to engage not only in-person, but also assist in students becoming highly proficient with online modalities that they will encounter later in their educational career (University at Albany, 2022). High schools can also collaborate with local colleges or universities to create HyFlex courses that juniors, seniors, and college students can all attend. Once high schools master the HyFlex option, flexible teaching structures can then be offered in middle schools, providing students in grades 6 through 8 with class options that may not have existed previously. Within elementary schools, different aspects of HyFlex can be introduced to the school community. For example, Parent Teacher Association or school-based presentations can be given utilizing a HyFlex option. Elementary schools can also utilize a HyFlex option in classrooms to serve students who may be absent for long periods due to illness or accident; or for students dealing with school-based anxiety or other mental health issues. Once the HyFlex option is introduced successfully, it becomes easier for parents and students alike to imagine more opportunities for K-12 HyFlex integration. Post-pandemic, education is going through a revolution, and the HyFlex option provides solutions for parents, teachers, and administrators alike. It truly is the future of education.

References

Abramson, A. (2021, September). Capturing the benefits of remote learning. Monitor on Psychology, 52(6). https://www.apa.org/monitor/2021/09/cover-remote-learning.

Anderson, M., Flaverio, M., McClain, M. (2021). Pew Research Center: How Teens Navigated School during COVID-19. https://www.pewresearch.org/internet/2022/06/02/teens-school-covid19

Beatty, B. J. (2019). Hybrid-Flexible Course Design (1st ed.). EdTech Books. https://edtechbooks.org/hyflex

Beatty, B. (2021). Can HyFlex options support students in the midst of uncertainty? The Educause Review. https://er.educause.edu/blogs/2020/5/can-hyflex-options-support-students-in-the-midst-of-uncertainty

Beatty, B. (2021). Common anxieties and student confusion. https://www.hyflexlearning.org/2021/11/19/common-anxieties-student-confusion/

Bower, M., Dalgarno, B., Kennedy, G. E., Lee, M. J. W., & Kenney, J. (2015). Design and implementation factors in blended synchronous learning environments: Outcomes from a cross-case analysis. Computers & Education, 86, 1–17. https://doi.org/10.1016/j.compedu.2015.03.006

Brooks, D. (2023). America should be in the middle of a schools revolution. The New York Times. https://www.nytimes.com/2023/02/16/opinion/america-schools-revolution.html.

CAST.org (2022). CAST UDL Guidelines. https://udlguidelines.cast.org/.

CUNY Hyflex Pilot Information (2021). https://www.cuny.edu/academics/faculty-affairs/cuny-innovative-teaching-academy/cuny-hyflex/info/#1630437186021-7be80e5b-7eb3 .

CUNY Hyflex Training (2021 & 2022), Blackboard Learning Management System.

CUNY Committee on Academic Technology Subcommittee on Enhancing Teaching, Learning, and Support.

Detyna, M., Sanchez-Pizani, R., Giampietro, V., Dommett, E. J., & Dyer, K. (2022). HyFlex teaching and learning: Climbing the mountain of implementation challenges for synchronous online and face-to-face seminars during a pandemic. Learning Environments Research. https://doi.org/10.1007/s10984-022-09408-

Eggleston, C. & Fields, J. (2021). Census Bureau's household pulse survey shows significant increase in homeschooling rates in fall of 2022. https://www.census.gov/library/stories/2021/03/homeschooling-on-the-rise-during-covid-19-pandemic.html

Hirschmann, K. & Riley, G. (2023, in press). Strategies to mitigate the challenges of HyFlex instruction. http://www.learntechlib.org/p/221877/

Hodnett, K., Gryta, V., Schnell, L. & Riley, G. (2022, October 8). Utilizing the HyFlex instructional approach to offer universally designed learning experiences in higher education. Presented at the 12th International on Education and Justice. https://www.kevinkumashiro.com/2022conference.

Huang, Y., Shu, F., Zhao, C., & Huang, J. (2017). Investigating and analyzing teaching effect of blended synchronous classroom. In 6th International Conference of Educational Innovation Through Technology, 134–135. https://doi.org/10.1109/EITT.2017.40.

Kim, J., & Maloney, E.J. (2020). The low-density university: 15 scenarios for higher education. Baltimore: Johns Hopkins University Press., doi:10.1353/book.77218

Kirby, L.A.J., & Thomas, C.L. (2021). High impact teaching practices foster a greater sense of belonging in the college classroom. Journal of Further and Higher Education, 46(3). https://www.tandfonline.com/doi/abs/10.1080/0309877X.2021.1950659

Penrod, J. (2022, March 25). Staying relevant: The importance of incorporating hyflex learning into higher education strategy. https://er.educause.edu/articles/2022/3/staying-relevant-the-importance-of-incorporating-hyflex-learning-into-higher-education-strategy

Riley, G., Baecher, L. & Guy, G.M. (2022). HyFlex instruction at CUNY [Whitepaper]. Retrieved from https://hyflex.commons.gc.cuny.edu/wp-content/blogs.dir/21752/files/2022/09/Final-HyFlex-paper.pdf

Romero-Hall, E. & Rupine, C. (2021). Hybrid flexible course design: Exploring faculty preparedness. Online Learning Journal, 25, 1-24.

Skopec, C. (2021). Technology considerations to support a HyFlex learning model. Collegis Education. https://collegiseducation.com/news/online-learning/tech-considerations-to-support-hyflex-learning/.

University at Albany (2022). HyFlex Teaching and Learning in K-12 Schools. https://aatlased.org/

Xavier School (2020). Xavier School Implements a Hybrid Model in the Philippines. https://www.youtube.com/watch?v=ao0Om-PC99s

Zimmerman, A. (2022, January). NYC might create a remote option this school year, the Chancellor tells parents. https://ny.chalkbeat.org/2022/1/13/22882158/david-banks-eric-adams-nyc-school-remote-option

Photo Credits: Jay Greenberg, Romoland School District, California USA

A Pandemic HyFlex Story at Central Michigan University

Ben Andera

It was the spring of 2020, and there was so much uncertainty in the world. The COVID-19 pandemic brought a new set of struggles to an institution already facing challenges (Son et al., 2020). Even before the pandemic, budget challenges severely impacted Central Michigan University (CMU) due to the tremendous reduction of state appropriations and the decline in enrollment. Like many in higher education, the demographic shifts of the country left universities like CMU in a position where they were competing for every student. With the rising costs of tuition, declining state funding, and increased competition for research grants, universities were finding it harder to maintain their financial stability. In addition, the COVID-19 pandemic brought its own set of financial challenges, including decreased enrollment (accompanied by decreased tuition revenue) and increased costs for technology and safety measures (Krishnamurthy, 2020). Therefore, finding a balance between cost-cutting and maintaining academic quality remains a delicate challenge for higher education institutions even to this day.

The pandemic has many stories of suffering, but it also created a situation that forced the world to innovate and adapt. One of the few positive aspects of the pandemic that should be recognized relates to our ability to change and be resilient. This story is about how CMU implemented HyFlex to be resilient during the pandemic (Andera, 2022). It was amazing to see how fast things changed at CMU. Higher Education is known for its slow pace of change, but the pandemic forced higher education to change at a speed that was unique and accelerated. Decision-making was streamlined, and leaders made decisions with limited information since we were working in uncharted territory and with extreme urgency.

Faculty who had never taught in online formats were immediately thrust into new learning modalities (The Chronicle of Higher Education, 2020). Entire courses were reworked in a matter of days to accommodate the shift in course formats. A very close peer working with faculty on these adaptations liked to say "we are making a number of years' worth of progress and changes in a matter of weeks". In the spring 2020 semester, students went on spring break but were asked to return to online courses ONLY to complete that spring semester. In Michigan, the Governor had issued a stay-at-home order. A worldwide pandemic had shut down the world.

Spring 2020 was a challenging semester for everyone. One of the silver linings at CMU was the way academic support units responded to the challenge. The Office of Information Technology (OIT) was accustomed to developing tabletop exercises to deal with various threats. Handling a pandemic was never one of those exercises. Nevertheless, the OIT team responded extremely well with the little knowledge that we had during the beginning of the pandemic. I have joked often saying "Leaders should have bought the OIT members of the team Superman caps with a flying C (CMU's logo) on them since they were flying around saving the day". At the end of the spring 2020 semester, the Academic Senate of CMU acknowledged the herculean efforts of the Office of Information Technology by passing a resolution to commend us.

Figure 1. Resolution to Commend OIT

The Beginning of HyFlex at CMU

Every institution's story about how HyFlex started at their institution is unique. Many times, it is driven by faculty who are looking to expand educational pathways for students (Beatty, 2019). For CMU, it was driven by the desire to stay relevant and operational. Leaders across CMU and the nation were grappling with ways to keep students learning in a safe environment during the pandemic (Educause, 2020; Educause, 2021; Iglesias-Pradas et al., 2021). The HyFlex proposal started from the Academic and Research Computing team that supports five of the seven colleges. At that time, the IT professionals discussed how they could help the university be resilient and survive the pandemic. This team of IT professionals always supported the classrooms. They also understood, as IT professionals, the need to be adaptable and to plan for many different scenarios. One of the buildings on campus had purchased webcams for all their podium classroom setups. They primarily did this to invite special guests into the classroom and to have the class join other classes across the world in a virtual field trip scenario. The proposal to equip all podiums across campus with a "webcam-on-a-stick" was quickly developed from this model. The proposal was sent to leadership on a Thursday.

The initial presentation to leadership went well, but there was an understanding that many of the curriculum and instructional best practices would be required to make this idea successful. Leadership asked the project team to expand their thinking and return with a more robust campus-wide proposal. The Registrar and Curriculum and Instructional Support team joined the project, which took the technical proposal to a more robust level. In their research, the project team identified that their implementation was a teaching modality Dr. Brian Beatty termed HyFlex, which is an amalgamation of "Hybrid and Flexible" (Beatty, 2019).

A revised campus-wide proposal was approved four business days after the expanded team helped flesh out the ideas. The speed of decision-making was essential to the project's success since the world had supply chain issues and everyone needed similar equipment. The HyFlex proposal called for technology to be installed in the classrooms which

best enabled multiple students (or instructors) to join the physical spaces from remote locations. The proposal was built with the following underlying principles:

- HyFlex defined: In a HyFlex course, courses are delivered both in person and online at the same time by the same faculty member. Students can then choose for each class meeting whether to attend class in person or to join it online. The underlying design ethos behind the HyFlex Model is flexibility and student choice (Maloney & Kim, 2020).
- While every attempt will be made to leave technical options flexible, the installed technology, configuration, and communication will presume that WebEx will be the online system used for instructional delivery.
- Provide, at a minimum, basic functionality to every on-campus classroom, except for special-purpose labs that are used in a manner whose existing use cases would make virtual attendance either unconducive or require a much more complex approach to virtualization to be viable.
- Recognition of current market solutions available in quantity given large spread competition across all sectors for similar technologies.
- Deliver minimum viable solutions capable of installation prior to day one of Fall 2020 instruction.
- Priority has been given to technology that provides the best value/impact per dollar, not the least or highest quality solution.
- Priority has been given to enhanced audio quality over video quality.
- Specific room recommendations have been made using only objective and measurable criteria.

The Implementation

The timeline for implementation was extremely aggressive. As Figure 2 highlights, the time for procuring the needed hardware, implementing the changes in over 300 classrooms, and roll out training and support for HyFlex was fast.

Figure 2. Project Timeline
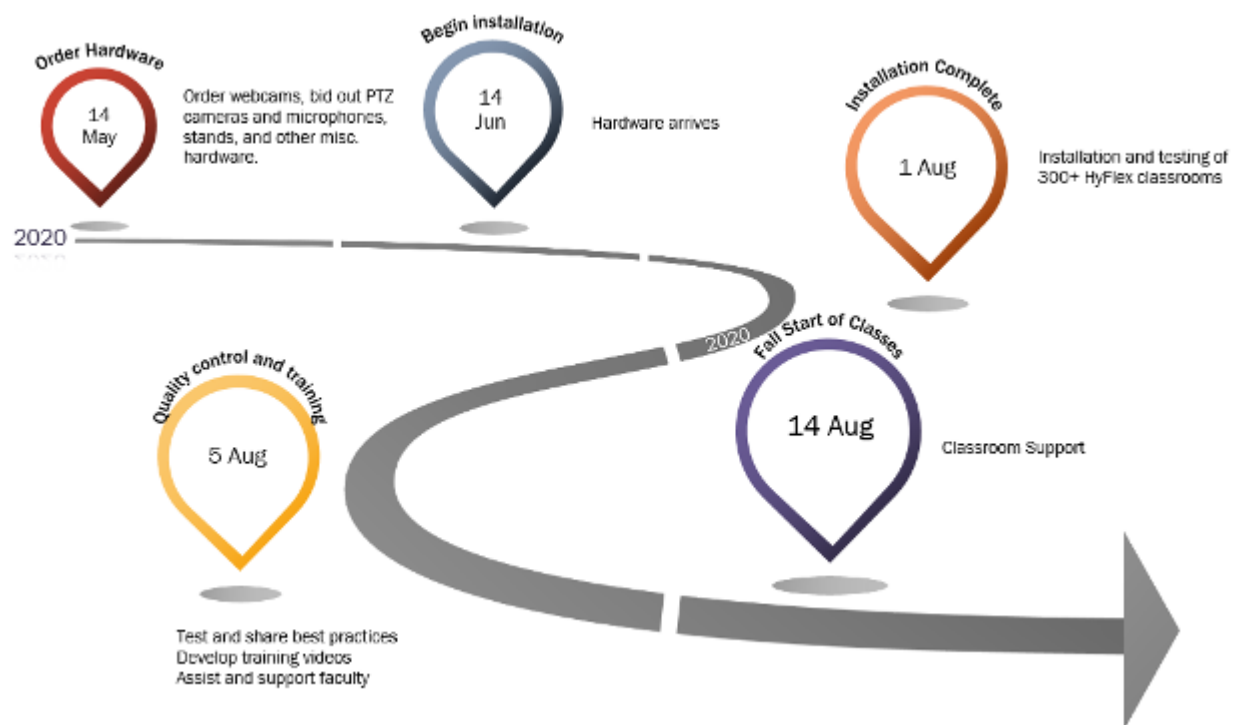
All existing classrooms were broken up into TYPES, with each progressive TYPE potentially providing a more extensive virtual experience.

Type 1 (See Appendix A): Labeled "Webcam-on-a-stick", provided a cost-sensitive option that is quick to install, a foundational option in classrooms for recording lectures and/or broadcasting to students attending remotely. A podium-mounted USB Webcam was installed in these classrooms, which could manually "swivel" between an instructor or student view. For Type 1 rooms, the USB Webcam acted as both the video and audio device. A total of **181** classrooms were set up as type 1, allowing them to be HyFlex capable.

Type 2 (See Appendix B): This type adds enhanced audio capabilities to the Type 1 deployment through two ceiling-mounted microphones. A podium-mounted USB Webcam was still installed and needed to be manually adjusted between the instructor and student view. Additional audio was received by microphones mounted in the ceiling. A total of **93** rooms were equipped as Type 2 classrooms with seating capacity between 60 and 87.

Type 3 (See Appendix C): Type 3 builds upon previous types by adding a PTZ (pan-tilt-zoom) professional camera installed in the room to capture video of the instructor, as well as a wireless microphone system to capture audio from the instructor. One additional boundary microphone was installed on the podium facing the students. A podium-mounted USB Webcam was still installed to provide a student view. A total of 26 classrooms with a seating capacity greater than **87** were upgraded to Type 3.

Technology Support

Amidst the chaos of the pandemic, a dedicated technology organization emerged as true superheroes, joining forces with the university to provide crucial support and facilitate the transition to remote learning. Displaying exceptional agility, expertise, and commitment, the IT team successfully implemented the HyFlex model in over 300 classrooms in an astonishingly short period of time. This herculean effort allowed students to choose between attending in-person, online, or through a blend of both, providing them with the flexibility and accessibility they desperately needed during those uncertain times. By leveraging its technological prowess, CMU not only ensured the continuity of education for countless students but also played a pivotal role in fostering resilience within the institution. The IT Team's tireless work served as a shining example of the power of collaboration, innovation, and adaptability, and their impact will be remembered as a testament to the unwavering spirit of educators and technologists coming together to overcome adversity and safeguard the future of the institution.

The HyFlex project brought out some of the best qualities of the IT professionals at CMU. There were a lot of unknowns as the project got approved, but the team was energetic to make a difference and support the needs of the institution. The rapid approval and support by top CMU leadership, including President Dr. Robert Davies, allowed the technology implementation team to get moving quickly. Equipment was purchased right away, and during the pandemic, this speed in decision-making was essential.

A small team developed a plan for implementation. This team focused on making the technology as easy as possible. Faculty had transitioned in the spring of 2020 from face-to-face courses to online. The implementation team wanted to leverage the knowledge gained from that emergency teaching into this new modality. Classrooms were equipped with webcams on a pivoting stand on every podium. This allowed faculty to leverage the tools they were familiar with to teach online courses in the simplest fashion. It was essentially why the first proposal was proposed as "webcam-on-a-stick" to not scare any faculty and keep terms simple. There was a lot of knowledge gained from a pedagogical standpoint from the HyFlex book (Beatty, 2019) though, that was incorporated into training material.

Figure 3. Training Video providing 6 Tips for HyFlex

[videos available at https://www.cmich.edu/offices-departments/curriculum-instructional-support/access-course-delivery-services/hybrid-flexible-(hyflex)-instruction]

Document cameras were part of the previous mediation and each of these was attached to the computer so that they could be leveraged for sharing physical items with remote users. For classes that used the whiteboard/blackboard heavily, this allowed faculty to write on a piece of paper and share that with the face-to-face students on the projector, while the remote students could also view it by seeing the camera app.

The project team decided to use a tool called Microsoft Team to be used as a dispatch and communication tool. A new team was developed with various tags for each of the buildings. Training material and frequently asked questions were developed and provided as part of that team. Training was developed for troubleshooting steps. Data analysis was provided on the classroom usage to each of the support teams. There was a lot of preparation without an understanding if any of it would work.

Figure 4. Training Video providing 6 Steps for Setting up for a HyFlex classroom

[videos available at https://www.cmich.edu/offices-departments/curriculum-instructional-support/access-course-delivery-services/hybrid-flexible-(hyflex)-instruction]

There was a strong need to change how classroom support worked and to expand the support footprint across campus. Toward the end of summer, the IT leadership team reached out to anyone with technical knowledge and asked for help. Over 100 staff and IT student employees answered the call and showed up for classroom dispatch training. It was a special time for people to come together and provide their expertise no matter what area they worked in. There were IT professionals from just about every team represented. Team members who normally just focus on project management, programming, server support, and many other various technology disciplines volunteered to assist in classroom support for the first few weeks of the semester. There was a belief that if we were able to overcome the first few weeks of the semester, the faculty and students would be able to adapt and grow comfortable with this new modality. The Office of Information Technology positioned IT professionals in buildings across the university and canvased as many of the locations as possible. No one really knew if the plans would work.

As the fall 2020 semester started, the first classroom dispatches were posted. A faculty picked up a podium phone that calls the IT helpdesk directly. The IT student at the helpdesk would post to the Microsoft team with the tag of the building and room number. The closest IT professional would respond with "I got it" and their current location. This current location could allow the nearest IT professional to try to respond and call others off. This process worked extremely well during the beginning of the semester rush.

To make the HyFlex model work, it was imperative that IT had a presence and that the faculty felt supported. The overwhelming support that the IT professionals had to respond to classroom issues quickly was a difference maker in the adoption and overall success of the fall 2020 semester.

Figure 5. Number of HyFlex Support Calls
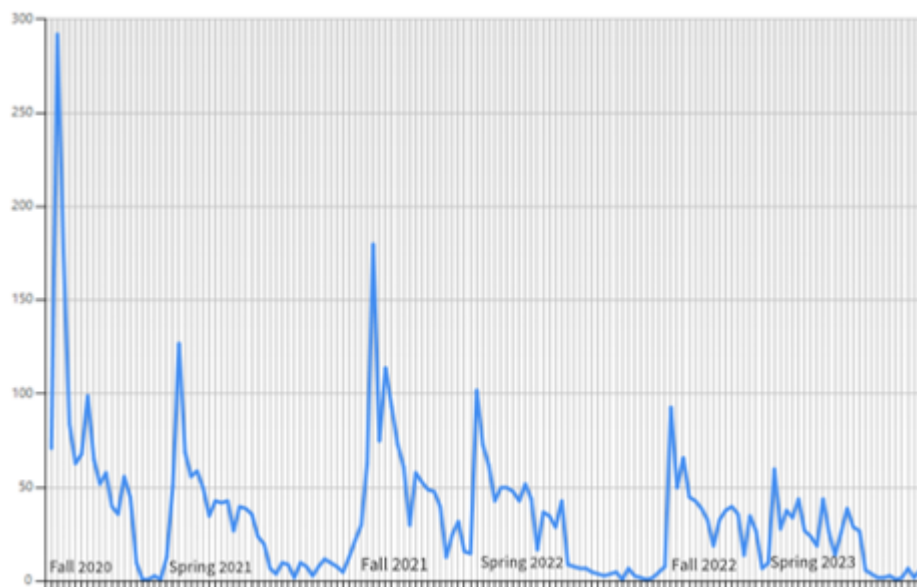
Figure 5 represents the IT tickets that correspond to classroom response and the new HyFlex support model that was implemented during the pandemic. It is interesting to note that the peaks all correspond to the start of a semester. The largest peak was in the fall 2020 semester when HyFlex was first introduced in mass. Once the team was able to train users and get faculty comfortable with this teaching modality, the number of tickets dropped substantially during each semester. There was a peak in support at the start of the semester but as faculty got comfortable with the technology, the support work declined. Fall semesters had more support issues compared to the spring semester over the three academic years. This could be explained by the number of technical changes that happened over the summer, and many new faculty started teaching in new locations or new course formats in the fall. In total, there are over 5,000 support tickets represented in the three years of data regarding HyFlex support over the three academic years.

Stakeholder Perspectives: Faculty, Students, Administration and President, and Implementation Project Lead

Faculty Perspective

As a project leader who implemented HyFlex across campus, I had the opportunity to interact with a plethora of faculty as they made a transition to HyFlex. Faculty shared their personal experiences with me directly. The CMU faculty union administered an open-ended survey for all faculty during the fall 2020 semester that was anonymous and was later shared with me to better support these faculty and improve CMU's HyFlex model. The following data comes from that survey.

Teaching both in-class students and online students simultaneously was a challenge. Many of the faculty did understand the unique circumstances of the pandemic, making HyFlex an ideal course format to help students during this unprecedented time. Faculty did share their fears of teaching with all this new technology. Many faculty struggled with the flexibility of HyFlex courses which, over time, had students choosing the online option. This left faculty in many courses teaching in mostly empty classrooms while most students decided to join online.

One faculty expressed their challenge in the HyFlex format in the following way. "I also experienced a lot of technical issues, partly due to my inexperience with Webex and with multitasking: During class time, I must oversee several things at the same time: multi-modal instruction, providing feedback, keeping engagement, keeping track of attendance and participation, be aware of the camera, sound, be able to seamless switch from PowerPoint to camera, and the chat room: there are no words to describe the level of stress this creates every day and eight times a week."

One faculty explained the challenge as "HyFlex has made it far easier for students to simply not come to class meetings, or to sign in but then never participate. That of course seriously undermines their learning and is devasting to

the grades of some. The near refusal of most students to turn on their video (or even respond via audio) makes me feel (at times) like I might as well be teaching via radio (or even telegraph)." Another faculty wrote "In three of the classes a TA who helps with some of these aspects and in one of the classes there is no TA, I ask sometimes students to help but I realize it is not their job, they should be engaged in class content not on the quality of the sound or the chat box."

While we did receive a lot of pushback from faculty on the challenges that teaching in the HyFlex model, many faculty also acknowledged positive changes. One faculty stated, "This has posed some serious challenges that have stretched me to learn and to adapt and, in some meaningful ways (perhaps) to become a better teacher (and I certainly have made many important improvements since teaching online last spring)."

Another faculty wrote "Students get more flexibility" while another wrote "Students and faculty have less of a chance to get COVID". There were multiple comments about the new ability for faculty to record their lecture and make them available to students outside of class. "It is very nice to be able to record my instruction and then have the video (and transcripts!) available soon thereafter. I do not do this with every class, but when I want to do so, it has been very easy." One faculty stated, "HyFlex is working well for the classes I am teaching. I feel confident using the system. And, very grateful there are expert technicians around that can help."

The adoption of new course modalities, including the HyFlex model, and the integration of advanced technologies in the classroom have led to a myriad of changes for faculty members. Embracing innovative approaches such as blended learning, flipped classrooms, online instruction, and the HyFlex model - which allows students to choose between attending in-person, online, or through a combination of both - has enabled educators to create more dynamic, interactive, and personalized learning experiences for their students. Furthermore, these advancements have fostered an environment that encourages collaboration, critical thinking, and problem-solving skills, while also promoting a more inclusive and accessible education for all students, regardless of their geographical location or personal circumstances. Overall, the integration of technology and innovative course modalities, such as the HyFlex model, in the classroom has enabled faculty to elevate the quality of education and better prepare students for success in the rapidly evolving, technology-driven world.

Student Perspective

In Spring 2021, the Multi-Institutional Study of Leadership (MSL) survey was conducted for all undergraduate students at CMU. The MSL examines the influences of higher education on college student leadership development and comprises over 400 variables. Due to the COVID-19 pandemic, additional questions regarding pandemic perceptions and experiences were added to the 2021 instrument. The MSL data was combined with institutional data and only students that took a HyFlex course were included in the resulting dataset. The following responses come from undergraduate students who responded to the MSL survey and had taken a HyFlex course at CMU.

While we understand the pandemic was an extremely difficult time for students in general, many found the changes brought on by CMU to be the right decision at the time, and these students demonstrated great adaptability and resiliency. As one student stated, "CMU has done everything in its power to ensure a safe environment for the students while transitioning back to mostly face-to-face learning. Faculty have been supportive and understanding, and most due dates for major assignments have been flexible and/or negotiable. Overall, they have done their best to keep our stress levels low, and our understanding of course material high." Another student writes, "First year at college but feel Central Michigan University adapted well educationally."

Many students shared their appreciation for the flexibility that HyFlex offered. As one student stated a positive aspect of how the pandemic impacted their educational experience by giving them the "ability to participate in classes in HyFlex format from my home as an older student with children that were impacted by school closures." Students, especially non-traditional students, were offered many courses in this new HyFlex modality that prior to the pandemic were only offered in a face-to-face format. The rapid change of the university to embrace HyFlex during the pandemic opened many more courses to these students. As one student stated, "CMU offers their classes in a HyFlex format, meaning that students have the choice between in-person and online. The freedom that this format allows is fantastic.

I've been able to go home and visit family and not worry about missing class. I also have been able to do online class when I'm sick which has been beyond helpful."

In the survey responses, the following themes emerged:

Flexibility and Convenience:

· Online format allowed for flexibility in studying and attending classes from anywhere, including the comfort of home or while traveling.

· The option to choose between online and in-person classes provided convenience and saved time on commuting.

· Ability to work at my own pace and manage time effectively.

· More personalized instruction and access to resources online.

· Easier participation in classes, especially for older students or those with children impacted by school closures.

Improved Access and Accommodations:

· Enhanced accessibility for people with disabilities, allowing them to attend classes more easily.

· Availability of recorded lectures and multiple-day test windows allowed for better revision and study.

· Greater access to online tools and platforms, leading to improved technology skills.

· Improved communication with professors and classmates through video conferencing.

Positive Learning Environment:

· Reduction in social anxiety and more comfort in attending class from home or personal spaces.

· Enhanced focus and better grades in online learning environments.

· Ability to manage chronic pain or injuries while still attending class.

· Opportunities to learn new skills and adapt to virtual formats, which can be useful for future careers.

· Opportunity to engage in virtual projects, meetings, and events.

Faculty Support and Adaptability:

· Professors and academic advisors showed understanding, flexibility, and support to students during the transition to online learning.

· Faculty members went the extra mile to ensure a safe and successful learning environment.

· Increased communication and feedback from faculty and staff to address student needs.

· Faculty members embraced technology and provided new opportunities for engagement and learning.

Resilience and Growth:

· Development of self-regulated learning skills and self-motivation.

· Improved time management and ability to adapt to changing circumstances.

· Acquisition of new technological skills and proficiency.

· Increased independence and self-reliance in learning and completing assignments.

·   Recognition of personal growth and increased appreciation for educational opportunities.

During the pandemic, students impacted by HyFlex teaching shared their experiences and perspectives. One student mentioned the importance of having "small study groups and buildings open," while another appreciated "having a comfortable dorm experience." Students valued the opportunity to attend classes in person with safety measures, with one student stating, "I love being online, but there's nothing like the experience of being in a classroom." Another student appreciated the option to participate in classes from home, saying, "Being able to attend class from anywhere has been a great bonus."

The accessibility of classes was a significant benefit highlighted by students. One student mentioned, "Accessibility to the classes themselves has been greatly improved, making it easier for people with disabilities to attend class." Another student with children impacted by school closures shared, "Ability to participate in classes in HyFlex format from my home as an older student with children that were impacted by school closures." This flexibility also helped students with chronic pain, as one mentioned, "I can learn better in an online format when I'm experiencing chronic pain."

The transition to online classes was generally smooth, with a student mentioning, "A quick and smooth transition to online classes compared to my high school." Students also appreciated the recorded lectures, as one noted, "Professors posting online lectures allows me to rewatch them as many times as I'd like." Another student appreciated the flexibility of online exams, saying, "A multiple-day window to take a test in the online format helps me study until I feel ready."

The HyFlex format received positive feedback from students. One student expressed, "HyFlex is a good class format". Another student found it to be "very flexible." Some students preferred asynchronous classes, with one saying, "HyFlex is flexible, although I would prefer asynchronous classes." Students also recognized the value of online learning for their personal circumstances, as one mentioned, "Being able to do work from home is a great bonus, but only if you are able to effectively prioritize your time."

The campus community and faculty support were highly appreciated by students. One student commended their university, stating, "CMU has done everything in their power to ensure a safe environment for the students while transitioning back to mostly face-to-face learning." Another student mentioned, "My professors have shown a lot of compassion and understanding toward us in terms of assignment deadlines."

Students felt that the HyFlex format provided flexibility, improved accessibility, and enhanced their educational experiences. They valued the ability to attend classes from anywhere, the availability of resources online, and the support of their professors. While some students preferred in-person learning, others found online classes to be more suitable for their needs. The resilience, adaptability, and technological skills gained during this time were also seen as valuable outcomes.

Overall, the responses highlight the benefits of online and hybrid learning formats, including increased flexibility, accessibility, convenience, and supportive faculty. While some students expressed a preference for in-person learning, many found the online format to be effective and appreciated the opportunities it provided. The experiences during the pandemic have also contributed to personal growth, resilience, and the development of important skills for the future.

Administrator Perspective

Throughout this HyFlex project, I had the opportunity to work with leaders across the institution. This was certainly a campus-wide initiative that took commitment from everyone. In a recent interview with a Vice Provost, they discussed with me the magnitude and incredible change effort it took to make this project a success. "It was an extraordinary effort in extraordinary times…it's amazing the organization didn't come unglued." This Vice Provost has led many change efforts in higher education in his 30-year career. One of my favorite quotes from that interview was "We didn't have time to get in our own way". This statement was about the success of this HyFlex project and the amazing ability of the entire institution to push such large change so quickly. Normally institutions of Higher Education don't move so swiftly. They tend to do a tremendous amount of analysis and data gathering. They promote shared governance and make many decisions through a collaborative effort. During the pandemic, it was essential to make decisions with less

information and in a timelier fashion. Part of the success of this HyFlex implementation was the forced urgency that was placed on decision-makers. At the time of the implementation, there were worldwide supply chain issues and institutions around the world were fighting for various technologies to stay operational. In a matter of a few days, this University-wide project went from an idea to approval. The agile project framework served the institution well and showed that a campus community could change rapidly when needed.

The importance of proactive planning and building resiliency in the work of higher education administrators cannot be overstated, especially in today's unpredictable and rapidly changing world. Developing strategies to prepare for emergencies and unexpected events is crucial for ensuring the continuity of educational services and maintaining a high standard of learning for all students. Implementing flexible course modalities, such as the HyFlex model, plays a significant role in achieving this objective. By offering students the choice to attend in-person, online, or through a combination of both, HyFlex courses provide a versatile solution that allows institutions to adapt seamlessly to a variety of emergency circumstances, such as natural disasters, pandemics, or other unforeseen disruptions. This flexibility not only minimizes the potential impact of such events on the learning experience but also promotes a more inclusive and accessible education system. Ultimately, incorporating resilient strategies and adaptable course modalities like the HyFlex model is essential for higher education administrators to navigate potential challenges effectively, safeguard the well-being of their students and staff, and ensure the long-term success of their institutions.

FROM THE ACADEMIC VISIONING PROCESS – Provost "The pandemic forced CMU to be nimble, flexible, avoid bureaucratic decision-making processes, and embrace technology. The pivot to the HyFlex modality during the pandemic was exciting. It will never be a favorite modality for faculty, we'd all prefer face-to-face, but faculty/staff/students stepped up to the challenge."

Presidential Perspective on the Pandemic and HyFlex

On June 23, 2023, I had the opportunity to interview the President of CMU, Dr. Robert Davies. The following is a summary of the interview of the HyFlex project and the various decisions that were made to support students' learning during the past three years of the pandemic.

During the interview, President Davies was asked to reflect on the challenges and opportunities faced by their university over the past three years, particularly during the unprecedented times of the COVID-19 pandemic. The President acknowledged that decision-making in universities is often perceived as slow but emphasized that it is a thoughtful process that considers a wealth of data, information, and viewpoints. The constantly changing nature of the pandemic presented one of the biggest challenges, with data and information shifting on a weekly, daily, and even hourly basis. The President emphasized the need to adapt and make decisions promptly, sometimes relying on blind faith and being mindful of the risks involved.

Maintaining the operational structures of the university while prioritizing safety was a key focus for CMU's President. He highlighted the importance of keeping the university open and operational to support faculty, staff, and students in pursuing their academic goals. Despite the challenges, the president proudly stated that CMU was among the few in the state that never closed during the pandemic's early days. Even when faced with uncertain circumstances, the president stressed the need for thoughtful decision-making, being mindful of the risks involved, and maintaining an unwavering commitment to supporting the university community.

One decision that the president mentioned, which initially raised some eyebrows, proved to be one of the best choices made by the university. They revealed that CMU started school two weeks earlier than usual in the fall of 2020, allowing them to complete the academic term before Thanksgiving. This decision turned out to be crucial, as shortly after the holiday, the governor ordered the shutdown of every other university. By acting proactively, CMU managed to avoid closure, demonstrating its commitment to ensuring students could maintain their academic progress and supporting the faculty and staff. The president emphasized the importance of thinking outside the box and remaining focused on the university's goals amidst challenging circumstances.

The president highlighted the thoughtful decision-making process, driven by the consideration of various data and viewpoints. The ever-changing nature of the pandemic necessitated adaptability and prompt decision-making, even in the face of uncertainty. The university's commitment to maintaining operational structures while prioritizing safety, supporting faculty, staff, and students, and thinking creatively proved essential in successfully navigating the unprecedented times. The decision to start the academic term early proved to be a pivotal move, enabling the university to continue operating while others had to shut down. Overall, the president emphasized CMU's dedication to its mission and unwavering support for its community throughout these challenging times.

When President Davies first heard the governor's stay-at-home order, he found it interesting and reflected on the events leading up to that decision. The day before the order was issued, the president had gathered everyone together to discuss spring break and when they should consider telling students not to return. They had specific markers in mind for when such a decision would be appropriate. The following morning, the president received a phone call from the Commissioner of the Mid-American Athletic Conference, who urgently called for a meeting with the presidents regarding the continuation of the basketball championship game in Cleveland. The decision was prompted by a professional player from the Utah Jazz, who had recently played in the same arena and subsequently tested positive for COVID-19.

During the meeting, various presentations were made by the convention authority and other individuals, emphasizing the safety precautions in place. The president believed that the commissioner should be the one to make the final decision rather than the university presidents. They also expressed concerns about the rapidly changing circumstances and the need for flexibility. Despite their reservations, most of the presidents, with the exception of President Davies, voted to continue the tournament. However, within a short time frame of an hour and a half, the commissioner called for another meeting after 22 athletic conferences had already canceled their tournaments due to a basketball official showing symptoms.

Ultimately, the tournament was canceled. The governor's subsequent stay-at-home order made the decision obvious. The president highlighted the importance of flexibility during such uncertain times. They believed that their vote against continuing the tournament was based on the need for the commissioner to make the decision and a feeling that the right questions were not being asked. The president acknowledged that the order from the governor made it a straightforward choice to cancel the tournament, but they emphasized the significance of remaining adaptable and making prompt decisions.

President Davies also shared his leadership philosophy, which involved making decisions rather than abstaining, as he believed that not making a decision is, in itself, a decision and often the worst one. He stressed the importance of timing when making decisions, as making them too early without sufficient information can be detrimental. The president used the analogy of an airplane course correction, explaining that it is easier to correct a slight deviation in the beginning rather than allow it to compound over time. He mentioned that when he initially decided to switch to remote learning, it was for a two-week period. However, as the situation progressed, it became clear that the campus would need to remain closed, and he adopted a fully online approach. The conversation then turned to how this decision-making approach influenced the rapid implementation of HyFlex teaching methods, which involved presenting proposals and gaining approval within a short timeframe.

In my interview with the President, I asked about his thoughts on the implementation of the HyFlex teaching approach. The President explained that the decision to adopt HyFlex was driven by the recognition of an equity issue and the need to cater to the diverse range of students at the university. They acknowledged the challenges faced by students during the pandemic, including limited access to computers and reliable internet. HyFlex was seen as a solution to ensure all students could continue their academic journey with flexibility.

The President recognized the benefits of HyFlex, particularly its ability to accommodate individual student needs and decisions. They also acknowledged the initial difficulties faced by some faculty members in adapting to a teaching approach that required simultaneous engagement with both in-person and remote students. However, the President

expressed confidence in the continuous improvement of technology and the development of effective teaching techniques by faculty members who embrace HyFlex.

When discussing the positive aspects of HyFlex, the President emphasized the opportunities it provided, such as incorporating guest speakers and unique experiences into the learning process. They anticipated further growth and evolution of this approach, catering to different learning modalities and preferences. The President also emphasized the importance of fostering a sense of community, even in a blended or remote environment and finding ways to facilitate physical connections when necessary.

As the conversation progressed, the President talked about other opportunities and trends in education, such as the use of virtual reality. He mentioned examples from other institutions and expressed curiosity about how virtual reality could be integrated into our university's teaching practices. The President also highlighted the importance of community interaction and discussed the potential impact of remote work on social dynamics. He expressed interest in exploring innovative uses of technology and preparing for future developments, even though virtual reality implementation may still be a few years away.

We then discussed the significance of the HyFlex project and its impact on our university. I shared my pride in the academic Senate's decision to include HyFlex as part of the Curriculum Authority Document (CAD) at CMU and mentioned the importance of adaptability and flexibility in our approach to teaching and learning. However, I also expressed my struggle with the idea of something being set in stone, as I am accustomed to continuous improvement and modifying approaches over time.

The President acknowledged the concerns and highlighted the opportunities that HyFlex brings, including increased effectiveness in administration and the ability to engage alumni and community members through remote participation. He emphasized the growing comfort level with technology and the potential for leveraging it to enhance teaching and learning experiences. We concluded the conversation by discussing future possibilities and the importance of maintaining a forward-thinking mindset.

Overall, our conversation revolved around the implementation of HyFlex, lessons learned, future opportunities, and the significance of continuous improvement in our teaching and learning practices.

Implementation Project Lead's Perspective (the author)

Education has experienced significant shifts recently, with the emergence of the HyFlex teaching model. HyFlex, or Hybrid-Flexible teaching, allows students to participate in classes in-person, remotely, or asynchronously through recorded sessions. This model offers maximum flexibility, potentially increasing attendance and enrollment while providing diverse learning options. However, it also presents challenges, requiring more preparation from professors and proper technology investments to accommodate different participation modes. Despite these challenges, the HyFlex model represents an opportunity to reevaluate higher education and leverage technology to enhance learning experiences.

For CMU, it helped our university be resilient during the pandemic. I feel privileged to be part of the core project team that helped implement and support this new modality. I had the chance to work on a truly university-wide project that made an impact on students during a difficult time. This new course modality is now included in the Curriculum Authority Document (CAD) for our institution and may live on past me. I feel a deep appreciation for the team who stepped up during the pandemic and delivered amazing creativity and support.

I want to take a moment to express my heartfelt gratitude and appreciation for the incredible work of the CMU team. Throughout our journey together, the team consistently demonstrated exceptional skills and expertise. Their ability to tackle complex challenges head-on and find innovative solutions is truly remarkable. It is your collective effort as a team that made all the difference. The seamless coordination and collaboration that the team exhibited are a testament to their professionalism and commitment. There was a supportive and encouraging work environment,

fostering a sense of camaraderie that empowered each team member to excel. Thank you to everyone who played a role in this project, it was truly an honor to work alongside such an amazing team.

Dr. Ben Andera
Executive Director, Academic & Research Computing
Park Library | Central Michigan University
P: 989-774-2338 | E: Dr.Ben@cmich.edu
www.cmich.edu (he/him)

REFERENCES

Andera, B. (2022). Role of resiliency on undergraduate academic success in HyFlex courses at a midwestern university during the Covid-19 pandemic. Retrieved from https://cmich.primo.exlibrisgroup.com/permalink/01CMICH_INST/1tl0i76/alma991016052932603781

Beatty, B. J. (2019). Beginnings: Where Does Hybrid-Flexible Come From? In B. J. Beatty, Hybrid-Flexible Course Design: Implementing student-directed hybrid classes. EdTech Books. Retrieved from https://edtechbooks.org/hyflex/book_intro

Educause. (2020). 7 things you should know about the HyFlex course model. https://library.educause.edu/resources/2020/7/7-things-you-should-know-about-the-hyflex-course-model

Educause. (2021). Scaling HyFlex for the Post-Pandemic Campus. https://er.educause.edu/articles/2021/8/scaling-hyflex-for-the-post-pandemic-campus

Iglesias-Pradas, S., Hernández-García, Á., Chaparro-Peláez, J., & Prieto, J. (2021). Emergency remote teaching and students' academic performance in higher education during the COVID-19 pandemic: A case study. Computers in Human Behavior, 119, 106713. https://doi.org/10.1016/j.chb.2021.106713

Kim, J., & Maloney, E. J. (2020). Learning innovation and the future of higher education. JHU Press.

Krishnamurthy, S. (2020). The future of business education: A commentary in the shadow of the Covid-19 pandemic. Journal of Business Research, 117, 1–5. https://doi.org/10.1016/j.jbusres.2020.05.034

Son, Hegde, S., Smith, A., Wang, X., & Sasangohar, F. (2020). Effects of COVID-19 on College Students' Mental Health in the United States: Interview Survey Study. Journal of Medical Internet Research, 22(9), e21279–e21279. https://doi.org/10.2196/21279

The Chronicle of Higher education. (2020). https://www.chronicle.com/article/Here-s-a-List-of-Colleges-/248626?
    cid=wcontentgrid_hp_1b

Appendix A: Type 1 Classroom [181]

Teaching Background and Theory

In order to provide maximum flexibility for class configuration and social distancing, we recommend that ALL classrooms be equipped with a base level of equipment allowing for distance learning. "Type 1 classrooms" for the purposes of this project are the smaller and lower-usage-anticipated classrooms common on campus. These Type 1 rooms are recommended to receive a podium-mounted USB webcam.

There are a number of classrooms already equipped with this equipment, primarily in CLASS and CBA. Rooms that already contain this base level of equipment will not be modified.

System

In-room video will be captured by a high-definition USB webcam. This webcam will be podium mounted, atop a ~17" post that allows for manual aiming of the camera. In classrooms with podium positions that prevent this arrangement, alternate mounting methods will be considered.

Instructors will be able to share the podium PC via the web conferencing software. Advanced instructors will also be able to share the document camera by opening an application on the PC while the PC screen is shared. Laptop, VHS, DVD/Blu-ray, markerboard/chalkboard content will not be intelligible via the webcam due to the lack of an optical zoom. Further, compression and bandwidth conditions can further degrade the capture of markerboard/chalkboard—therefore markerboard/chalkboard use should be discontinued in remote learning situations.

The webcam will need to be manually aimed at the appropriate target for the type of session being initiated. With an in-room instructor, the webcam will point at the likely location of the instructor, and positioning may need to be adjusted if the instructor does not remain stationary. With a remote instructor, the camera should be adjusted to best capture the maximum number of students—not all students are likely to be captured due to the limited field of view offered by webcam technology.

Existing document cameras can potentially be utilized as part of a distance learning session. Given that this usage may prove more difficult for some instructors, this should be considered an advanced and potentially "unadvertised" feature. Document cameras in existing digital classrooms can provide video to the podium PC via USB. To share this video with web conferencing software, either the selected camera will need to be switched within the web conferencing software OR the document camera video will need to be opened in an app on the PC WHILE the PC desktop is being shared. The latter is recommended, as the instructor video would still be available.

In-room sounds, including the instructor and student voices, will be captured via the webcam's built-in microphone. The intelligibility of voices at range may not be adequate for remote participants. Instructors should be encouraged to repeat student questions prior to answering in situations where the instructor is presenting locally.   For instances with remote instructors, it is advised that an operator seated at the instructor station repeat in-room questions for the instructor and other remote participants.

Figures A1 - A5. Technology for Type 1 Classroom

Figure A1. Floor Plan

Projector, Existing

USB Web cam, 360 degrees of motion Built-in microphone

Podium

Projection Screen, Existing
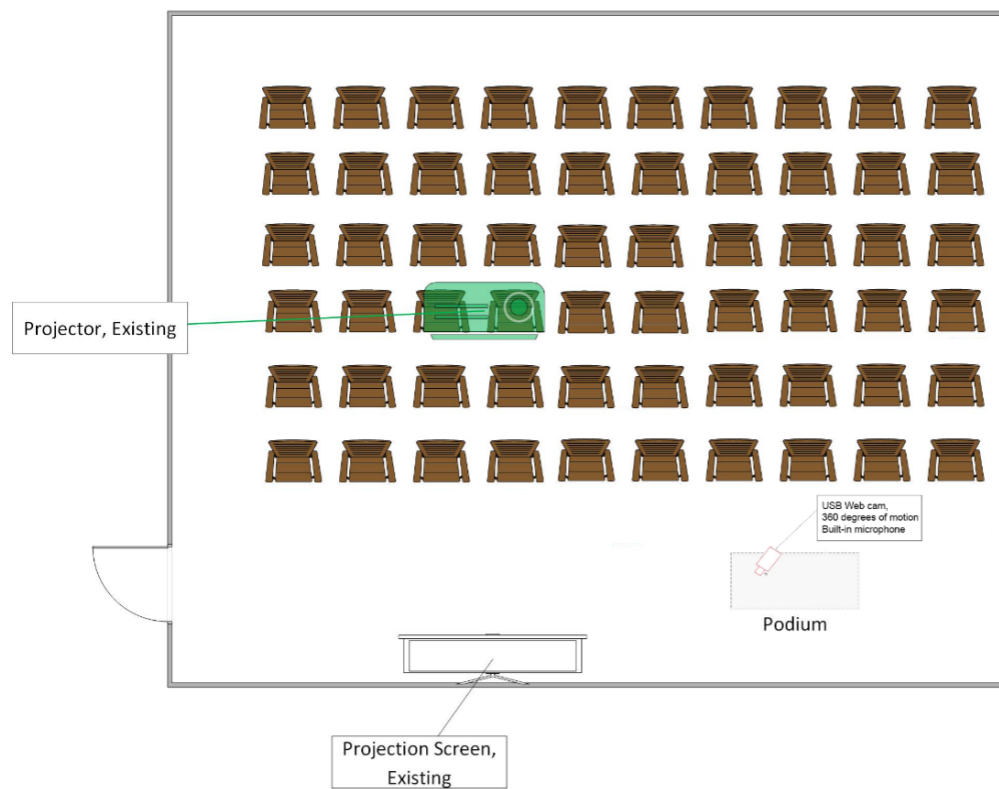
Figure A2. Webcam Mount (Post)

Figure A3. Webcam Note: Webcam post and webcam to be mounted on podium

Figure A4. Instructor view, PE 108

Figure A5. Student view, PE 108

.

Appendix B: Type 2 Classroom [93]

Teaching Background and Theory

In weighing the best use of funds to provide the best experience to remote participants, we have deemed high-quality audio to be of higher value than high-quality video. Accordingly, we recommend the installation of a more advanced microphone system in rooms that are better suited for our anticipated constraints—namely large rooms as they provide more flexibility for holding classes with social distancing considerations. As a database of room square footage is not readily available to us, we'll base this on the pre-COVID19 "seating capacity" data that we currently have access to, assigning a Type 2 classification for rooms having between 60-87 seats, for a total of 33 rooms, and ordering hardware for an additional 60 rooms, with specific rooms to be determined by CIS as part of evaluation efforts for teaching modality.

Type 2 classrooms are also recommended to receive the same USB webcam as the Type 1 classrooms, mounted in the same configuration.

There are a number of classrooms that fall into this type that are already configured in either this manner or more advanced, particularly classrooms in the College of Health Professions and College of Medicine. Classrooms in this state will NOT be modified further, except in situations where a camera positioned to capture in-room students is not available.

System

In-room video will be captured by a high-definition USB webcam. This webcam will be podium mounted, atop a ~17" post that allows for manual aiming of the camera. In classrooms with podium positions that prevent this arrangement, alternate mounting methods will be considered.

Instructors will be able to share the podium PC via the web conferencing software. Advanced instructors will also be able to share the document camera by opening an application on the PC while the PC screen is shared. Laptop, VHS, DVD/Blu-ray, markerboard/chalkboard content will not be intelligible via the webcam due to the lack of an optical zoom. Further, compression and bandwidth conditions can further degrade the capture of markerboard/chalkboard—therefore markerboard/chalkboard use should be discontinued in remote learning situations.

The webcam will need to be manually aimed at the appropriate target for the type of session being initiated. With an in-room instructor, the webcam will point at the likely location of the instructor, and positioning may need to be adjusted if the instructor does not remain stationary. With a remote instructor, the camera should be adjusted to best capture the maximum number of students—not all students are likely to be captured due to the limited field of view offered by webcam technology.

Existing document cameras can potentially be utilized as part of a distance learning session. Given that this usage may prove more difficult for some instructors, this should be considered an advanced and potentially "unadvertised" feature. Document cameras in existing digital classrooms can provide video to the podium PC via USB. To share this video with web conferencing software, either the selected camera will need to be switched within the web conferencing software OR the document camera video will need to be opened in an app on the PC WHILE the PC desktop is being shared. The latter is recommended, as the instructor video would still be available.

In-room sounds, including the instructor and student voices, will be captured via 2 ceiling microphones. One microphone will be located near/above the instructor podium or teaching area, while the second will be positioned to best capture student questions. The mix of the audio captured by these 2 ceiling microphones will be provided to the PC via USB for use in web conferencing software.

Figures B1 – B6. Technology for Type 2 Classroom

Figure B1. Floor Plan
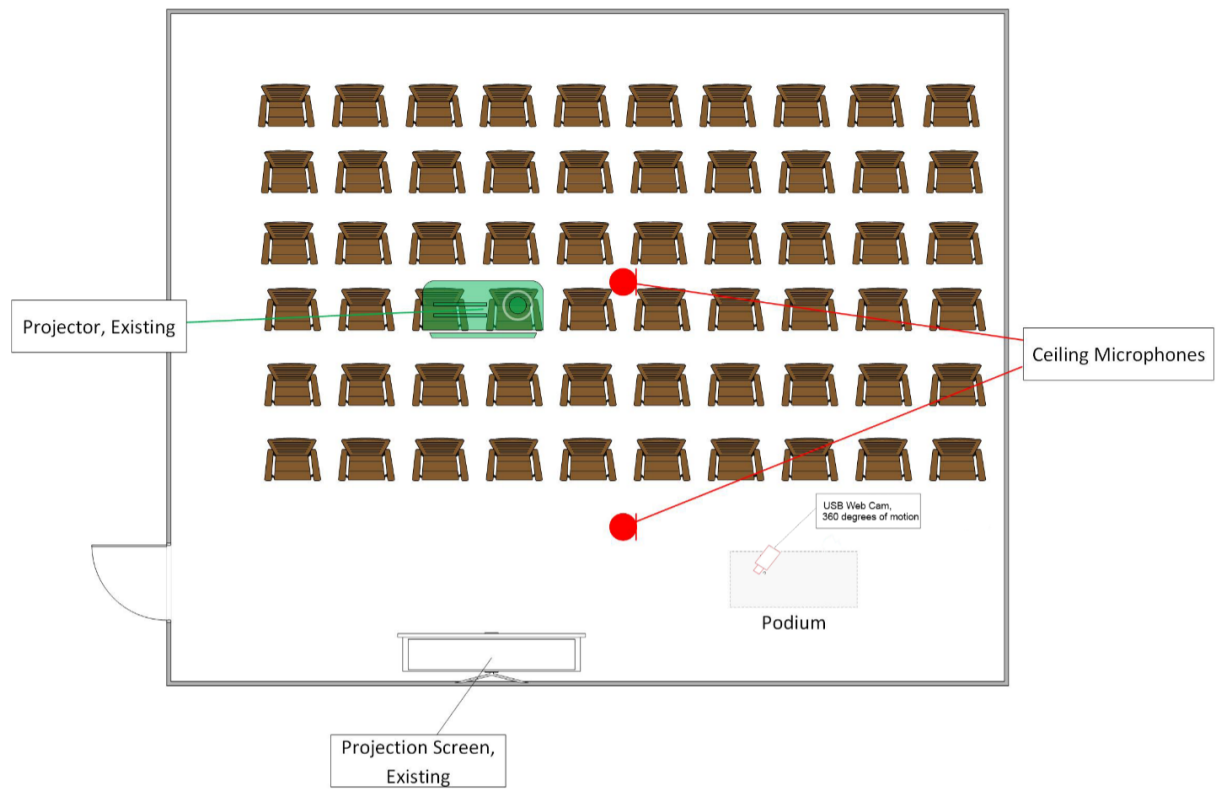
Figure B2. Webcam Mount (Post)

Figure B3. Webcam

Figure B4. Ceiling Microphone

Figure B5. Instructor View, PE 108

Figure B6. Student View, PE 108

.

Appendix C: Type 3 - Large Venue Classroom [26]

Teaching Background and Theory

Large venue classrooms are excellent candidates for a higher level of camera and microphone systems due to the potential higher capacities while allowing for social distancing.

Many of the large venue classrooms on campus already have camera and microphone systems that can be utilized for distance/remote learning via web conferencing applications. If the classroom has an existing high-definition instructor-facing PTZ camera and a wireless microphone connected [or connectable] to the in-room PC, the existing camera and microphone system was considered adequate and replacement was not recommended. Spaces in this category that do not have a camera/microphone system or currently have inadequate or derelict camera/microphone systems are recommended to receive new systems.

While there are several potential scenarios for instruction in these spaces, we can reduce these down to two modes: instructor teaching locally in-room and instructor teaching remotely to students in-room. To keep costs low while still providing a good quality experience to students, it is assumed that the video of the instructor must be high-quality, while the video of students provided to a remote instructor can be of lesser quality.

Instructors can share the podium PC via the web conferencing software. Advanced instructors will also be able to share the document camera by opening an application on the PC while the PC screen is shared. Laptop, VHS, and DVD/Blu-ray, markerboard/chalkboard content may be capturable via the instructor camera, visual intelligibility will vary

greatly with compression and bandwidth conditions and therefore markerboard/chalkboard use should be discontinued in remote learning situations.

System

Video of the instructor will be captured via a high-definition pan-tilt-zoom camera mounted in the room. The camera will be installed at a location that provides good-quality video of the instructor and minimizes installation time. This camera will provide its video feed to the podium computer via USB, and the camera can be controlled via the classroom touch panel.

Video of the students will be captured via a high-definition quality USB webcam, mounted on the podium via a post mount. The camera can be manually re-aimed by hand. No zoom is available, and the field of view may not pick up all students.

The proper camera must be selected when the web conferencing software is launched. If the previous classroom use was with a local instructor and is about to be used with a remote instructor, the selected camera must be modified.

The instructor's voice will be captured via a wireless Lavalier microphone and bodypack transmitter. A boundary microphone installed at the podium will capture student and other in-room sounds, including the instructor [and acts as a lower-quality backup to the instructor's wireless microphone]. A mix of these microphones will be provided to the PC via USB.

Existing document cameras can be utilized as part of a distance learning session. Given that this usage may prove more difficult for some instructors, this should be considered an advanced and potentially "unadvertised" feature. Document cameras in existing digital classrooms provide video to the podium PC via USB. To share this video with web conferencing software, either the selected camera will need to be switched within the web conferencing software OR the document camera video will need to be opened in an app on the PC WHILE the PC desktop is being shared. The latter is recommended, as the instructor video would still be available.

Figures C1 - C7. Technology for Type 3 Large Venue Classrooms

Figure C1. Camera Mount (Post)

Figure C2. Webcam

Figure C3. Instructor-facing camera

Figure C4. Instructor View, default view, HP 1020

Figure C5. Instructor View, wide view, HP 1020

Figure C6. Instructor View, maximum closeup, HP 1020
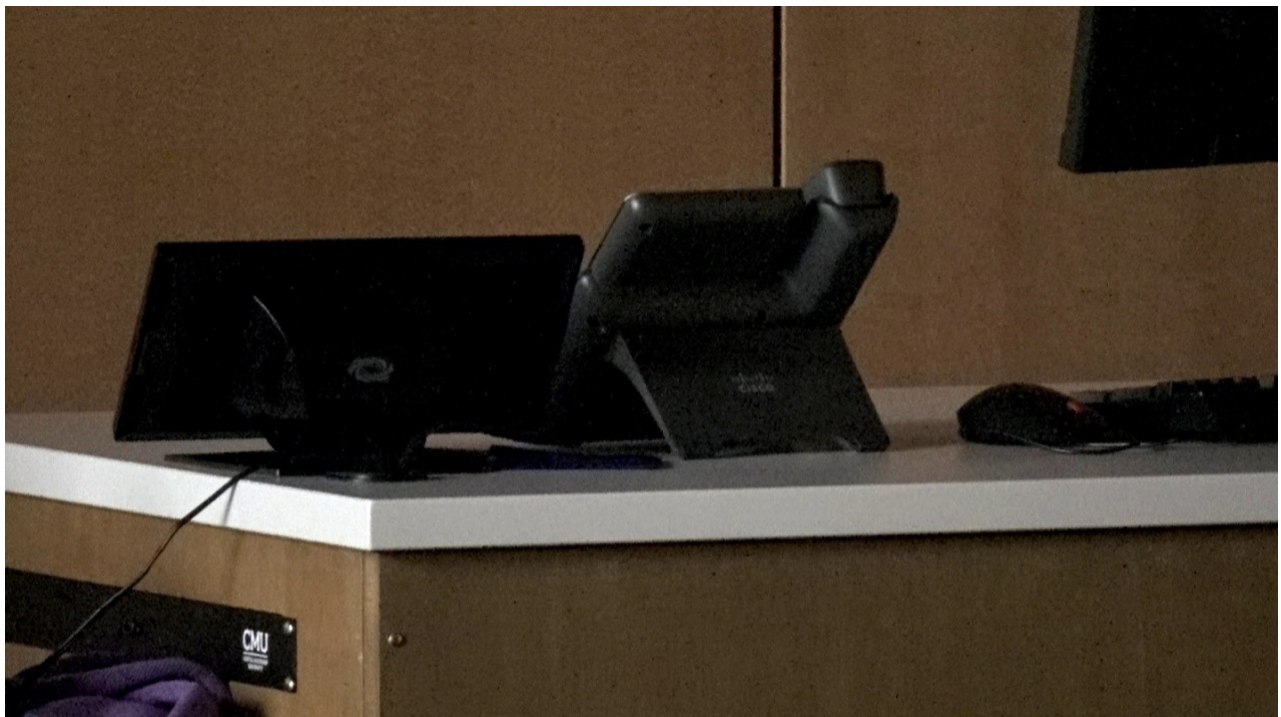
Figure C7. Student View, PE 127

Figure C8. System diagram, additional gear for large venue
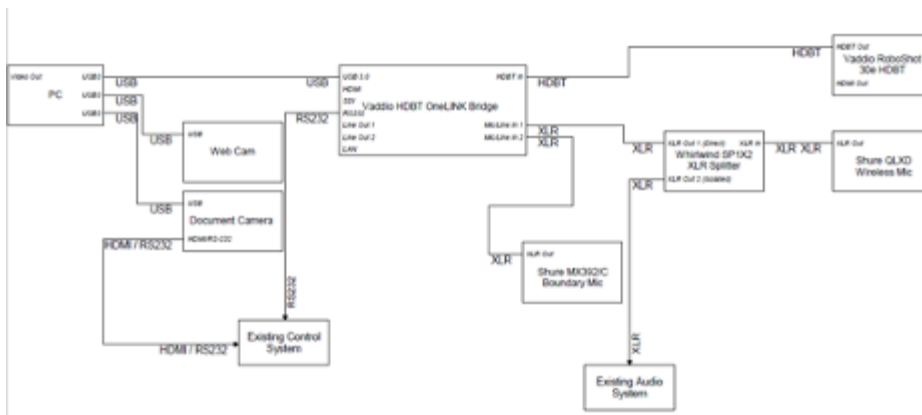
Appendix D: Training video links

Figure 3: 6 Tips for Facilitating your HyFlex Classroom video can be found at:

https://chipcast.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=e5a41199-266f-49b3-9705-ac05012bc300

6 Tips for FACILITATING your HyFlex Classroom (panopto.com)

Figure 4: 6 Steps for Setting up your HyFlex classroom video can be found at:

https://chipcast.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=634a03b1-ebfc-4e05-97a7-ac050104c061

6 Steps for SETTING UP your HyFlex Classroom (panopto.com)

HyFlex Programming as a Delivery Approach for Changing Student Demographics and Demands

Southeast Missouri State University

Chelsea McNeely, Brooke Hildebrand Clubbs, Sarah Dietrich, & Abby Ruessler

HyFlex Programming as a Delivery Approach for Changing Student Demographics and Demands

HyFlex at Southeast Missouri State University (Southeast), a regional public institution, evolved from a proof of concept in a single department, to a 100-section campus-wide pilot, to intentional program design. This chapter provides an outside-the-classroom look at administrative conversations, as well as a look into the classrooms of two programs that have implemented HyFlex to meet the needs of their unique student populations. These two academic programs—MA Higher Education Administration and MA Teaching English to Speakers of Other Languages (TESOL)—have found delivering their programs HyFlex provides an avenue to serve their students in a way that other modalities do not always allow.

Phase 1: Curiosity

Attendance at higher education conferences can stimulate new and innovative ideas, that may sometimes evaporate after the conference-goer returns back to their university and the day-to-day operations of life. One such idea that survived the everyday minutia at Southeast is HyFlex. After attending a conference, an individual in the online education department, who doubled as an agriculture instructor, pitched an idea to university leadership to lead a proof-of-concept study of HyFlex in an agriculture marketing class. With the goal of providing flexibility and access to students who balance time in the classroom with time in the field, this HyFlex course was delivered in Fall 2019 (Weathers & McNeely, 2021). Initial informal feedback from the instructor and students was positive, and the course was offered as HyFlex again in Spring 2020. Grades in the HyFlex sections were compared to grades in sections delivered face-to-face. Using a simple t-test and comparing letter grades, strong statistical significance ($p<0.0001$) was found across each letter grade. The HyFlex sections produced more "A" grades, and fewer "B/C/D/F" grades.

Phase 2: COVID-19 Pilot

Building off the successes of the proof of concept, the team developed a plan for a pilot project that would expand HyFlex to approximately 10 sections across the university, incorporating a variety of disciplines and allowing the

delivery mode to be piloted at a larger scale. Amid COVID-19 implications, this project expanded quickly with a goal of delivering 100 sections in Fall 2020. In total, 98 sections were offered in the Fall 2020 semester, and then 57 more in the Spring 2021 semester. Each academic department on campus was represented in this pilot, and HyFlex courses accounted for 3.1% of all sections offered during that time.

Implementing a new course modality during a pandemic may seem challenging, but it may have been the best window of opportunity to explore this type of innovation. We relied on both an administrative team and faculty support team to launch the pilot. A series of informational webinars were offered early in Summer 2020 to ensure campus was educated about this new delivery mode and implementation plans.

The website http://www.semo.edu/HyFlex provided FAQs and an informational video. Members of this cross-functional team included representation from the following offices:

- Registrar
- Southeast Online
- Student Financial Services
- University Marketing

A consistent struggle that this group had in its journey to implementing HyFlex courses was helping our campus become flexible in what was a considerably inflexible environment. The coding we had established for our software systems was based on a system of this or that, not this and that—online or face-to-face. This system was set up to create tidy boxes where we could put distinct populations of students, courses, or programs, to adequately trigger student rate codes, email communications, student service initiatives, and faculty assignment, among other things. In the early 2000s when we tried implementing more flexibility through hybrid courses, it resulted in us creating seven classifications of hybrid, so we could still neatly classify, quantify, and group distinct things. Though HyFlex incorporates three modes in which courses were already being offered—face-to-face, online, webinar—we could not find a way to integrate those existing codes into a new mode that would make sense for rates and communications. Ultimately, based on our student information system and current coding architecture, we decided to make HyFlex its own distinct coding, a standalone entity within our coding structure.

Beyond coding and tuition rates, though, there was still the matter of teaching the teachers about this new modality. We needed to make sure our faculty had the resources and support to navigate a new way of teaching. A faculty training and support team was created consisting of individuals from Southeast Online, the Center for Teaching and Learning, and Information Technology. The team provided training for HyFlex in a HyFlex environment—including group synchronous Zoom sessions, one-on-one consultations, and an online self-paced training course in our Learning Management System (figure 1).
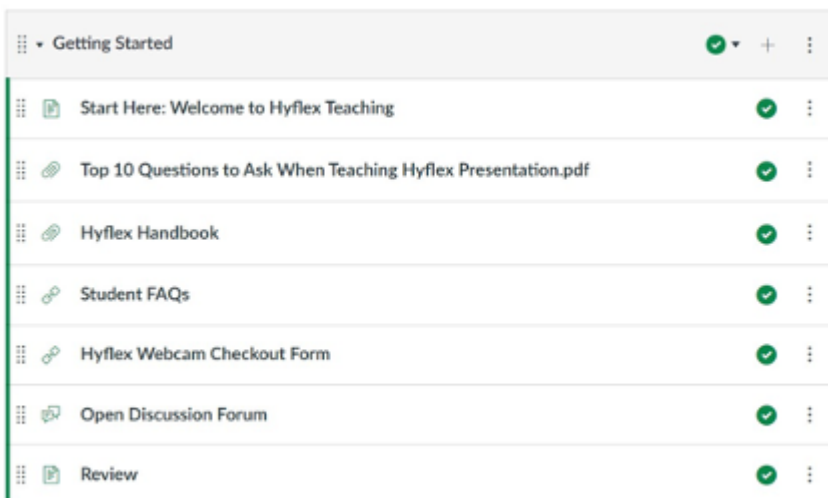
Figure 1: HyFlex Training Course for Instructors

Even though training was offered to all faculty delivering their first HyFlex course, it became clear during the implementation process that the definition of HyFlex had not been fully agreed on by all campus constituents. While the implementation team had adopted a definition of HyFlex that incorporates three modes (Beatty, 2019), some individuals interpreted HyFlex to include only two modes of delivery. Confusion about modes of delivery were resolved with personal conversations, but a lesson was learned that clear and constant messaging is imperative when launching something so new. From this experience, we realized that down the line we would need to have more formal conversations about how delivery issues in flexible learning courses would be addressed.

Defining HyFlex at Southeast did not end with agreeing on a delivery approach. Defining who would be responsible for the success of HyFlex long-term came into question. Our previous campus structure had created a separation between traditional teaching in our Center for Teaching and Learning and responsibilities for the growing number of students and courses the online learning department was responsible for. Given that HyFlex spanned the scope of each of these two departments, it was unclear who should support and promote this modality. These territorial conversations are not new in higher education, but are ones we continue to grapple with, as we seek to create efficient and effective teaching and learning centers.

Launching a new modality like HyFlex was neither a simple nor a linear process, but the pilot project provided intriguing data that encouraged further exploration. In the first-year pilot project, more than 150 sections of classes were delivered HyFlex to more than 2,500 students. When learning outcomes were assessed by letter grades, comparable results to those in the proof of concept emerged, students in HyFlex sections produced more "A" grades, and fewer "B, C, D, F" grades as compared to all other modes. As we concluded the pilot phase, we had asked and answered many questions, but there were still more questions to address. How could we sustain HyFlex? What students, courses, and instructors were best suited to HyFlex delivery?

Phase 3: Strategy

When the pilot phase was over, we began work on an institutional definition of what HyFlex is at Southeast. While much of the promotional and website material listed our definition, that a course would incorporate three modalities, there was no formal policy establishing how these courses needed to be taught. Individuals from Southeast Online worked with our original project team, which included members from the registrar and the vice provost's office, to define not only what HyFlex was, but how all modalities offered at our institution were to be delivered. This process included feedback from chairs and deans, as well as from the provost. Eventually, the definition of a course with optional synchronous sessions, in-person and virtual, as well as asynchronous components was agreed upon and approved to be posted on our school's portal website as well as on the provost's website. This definition was also formally shared with our deans, chairs, and faculty.

Following the pilot phase, some instructors recognized that HyFlex met the needs of their particular student demographics in ways that other modalities did not, and the decision was made that Southeast would launch its first HyFlex degree programs. Having learned some lessons from our hundred-section pilot, our approach this time around was to start with just one program launch. This slower, more measured approach allowed us to troubleshoot with a smaller number of instructors being impacted.

To date, Southeast has one degree program which is completely HyFlex, the MA in Higher Education Administration, one program in the approval process, and one in which courses are offered either asynchronously or HyFlex., the MA in Teaching English to Speakers of Other Languages (TESOL). The following are two examples of the utilization of HyFlex at Southeast from inside the classroom; the directors of these two programs share how they are reaching students where they are.

MA Higher Education Administration

After being part of the Department of Communication Studies & Modern Languages for over fifteen years, I transitioned to a new role at my institution as the program coordinator for the MA in Higher Education Administration. While the job description included taking the program completely online, during the interview process, I proposed making the program HyFlex. I had taught my intercultural and health communication classes in this modality in 2020 and 2021 and found upper-level students benefitted from the flexibility.

I explained to the administration in my department and college that based on the current student population, HyFlex seemed a better choice than fully online. The program had a significant percentage of international students, who must attend face-to-face courses for visa eligibility, and students with graduate assistantships, who could not afford to pursue a master's degree without that tuition assistance. Going HyFlex represented the best of both worlds: we could attract new students who would be 100% online, keep the students who needed to be on campus, and make the program more accessible for student-athletes, student-parents, and students who worked off campus.

During the 2021-22 school year, I worked with stakeholders throughout the campus community to redesign the curriculum. In addition to making the program HyFlex, I wanted to bring it in alignment with the Council for the Advancement of Standards in Higher Education. I worked with all the faculty who taught courses offered within the program, leaders of functional areas in student affairs, administrators, as well as past and current students. The changes were accepted at the end of that school year. We officially launched the new curriculum and soft-launched the HyFlex aspect in the 2022-23 school year. Now, in the 2023-24 school year, we are marketing the MA in Higher Education Administration as a HyFlex program.

My HyFlex delivery approach involves utilizing Nearpod slides for each class. This allows me to have the fidelity of using the "live" presentation option for my synchronous face-to-face and Zoom students, then providing a link to the "student-led" option for my asynchronous students. Utilizing polls and collaboration boards helps the students in the classroom and on Zoom communicate during class (figure 2).
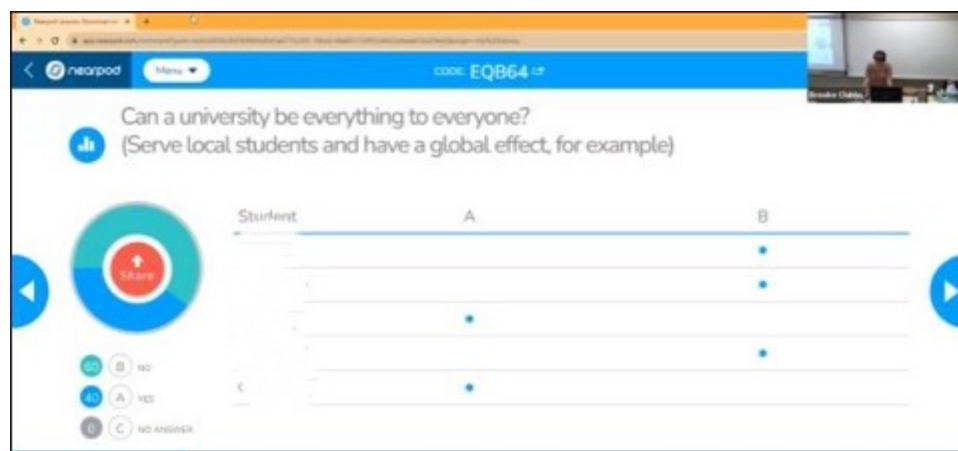
Figure 2: Nearpod poll used in HyFlex class

I put open-ended questions in the Nearpod for the asynchronous students to type answers, while those are class discussion prompts for the synchronous students. I sometimes employ "Think, Pair, Share" for these discussion questions, putting my Zoom students into breakout rooms while the in-class students move their chairs together. Each class meeting is recorded and transcribed through Zoom. I transfer those videos to our Learning Management System's Canvas Studio, then post a link to the captioned video on the course Canvas page. I also record a short (three- to five-minute) podcast using Spotify for Podcasters after each class session. These podcasts can be used by asynchronous students as a quick introduction before watching the whole class video or by any of the students as a little refresher before the next class. I conduct a lot of assessment by presentations; students who are asynchronous record and share the link to their presentation which is watched in class or posted on Canvas.

However, I do not teach all of the classes in my program. I rely on adjunct instructors to teach two of the core courses; a full-time faculty member in my department provides the required research methods course in a completely online format, and full-time faculty in other departments teach elective courses. It was a challenge to ask the adjunct instructors, many of whom are full-time student affairs professionals, to increase their course delivery and design burden to make their courses HyFlex. However, with help from Southeast Online and the Center for Teaching and Learning, these instructors were given resources and assistance to ease their transition to the format. While they may not utilize all the same delivery approaches I do, the courses are delivered in a HyFlex format. The instructors from other departments were not enthusiastic about adopting HyFlex, particularly because they had both undergraduate and graduate students in the courses HEA students could take as electives. However, even with those faculty not using the HyFlex modality, an HEA student can still complete this degree completely online.

I sympathize with the faculty who were reticent to utilize HyFlex. Many of them first experienced the format during a time of "panic-gogy": a tongue-in-cheek combining of panic and pedagogy for the rapid online pivot during the pandemic (Kamenetz, 2020). During the fall of 2020, to practice COVID precautions, the university had employed "mixed" classes where half a class would attend in person and the other half attended on Zoom one class period, then switched the next class period. However, there was no penalty if you did not attend in the manner you were assigned. By the end of the semester, most students attended via Zoom, regardless of the day. Faculty felt like they were shouting into the void, and sometimes they were. I had students in my undergraduate classes later admit they would log into Zoom, turn off the camera, and go back to sleep. There is a lingering doubt that students receive the same experience or that courses have the same rigor when offered in more than one modality. Also, because HyFlex students can choose how they attend the class each class period many faculty feel it is difficult to plan activities when you could have a varying number of students in the room on any given day.

These issues with faculty were not the only challenges faced. While most administrators endorsed the idea of a HyFlex program, when we got to the nitty-gritty of policies and procedures, some lost their enthusiasm. Before officially becoming a HyFlex program, we had to resolve how students would be classified (main campus or online) and how that would affect their financial aid. After sitting down with representatives from student financial services, international education, and the registrar's office, we felt we had a working plan.

Then, later when it came time for Spring 2023 registration, the registrar contested classes being classified as HyFlex and blended. These classifications had been used to denote that the course did not include three hours of face-to-face portion of instruction. I found that to enhance fidelity, it was better to not have a three-hour course (with the exception of 8-week courses) because asynchronous students had difficulty maintaining attention watching a video of that length. Thus, I made up for it with shorter videos all the students could watch online and other resources for the students to utilize on their own. The registrar argued that students should not have to do any online work if they chose the face-to-face modality and that for accreditation purposes, we would have to meet in person for three hours each week. The vice provost and dean of graduate studies determined that rather than list a course as blended, we could classify it only as HyFlex and list the times in-person instruction was available. Because the course could also be classified as fully online, that instruction did not have to add up to 3 hours. Issues like making sure our administrative assistant knew how to code the classes when loading them in the system reminded us, we were doing something that had not been done at our institution before!

However, a year in, I can confidently say making the program entirely HyFlex has been worth it. Being able to choose how to attend provides flexibility for student-parents who can come to class when they have a babysitter and attend via Zoom or asynchronously when they do not. Student affairs staff who are traveling for recruitment or professional development events can attend class from their hotel rooms. Student-athletes no longer must miss class when traveling for games. Students who moved away for work are still able to finish the program because they can attend via Zoom and online. Students with health issues have been empowered to attend in the modality that best suits how they are feeling. Moments that stand out: 1. a final exam where the President of the University came for a roundtable discussion, which was attended by some students who had been online most of the semester and included taking a selfie with the students attending on Zoom and 2. hugs at the commencement ceremony from students who told me they did not think they would finish but were able to make it because the program was flexible.

MA TESOL

Before May 2020, every course in the MA in Teaching English to Speakers of Other Languages (TESOL) was offered in both an asynchronous online format and in-person. When the COVID pandemic forced students and instructors off-campus, in-person courses continued to meet synchronously on Zoom. With the return to campus, all courses which had previously been held in-person became HyFlex, offering the option of participating virtually, and making attendance in synchronous sessions optional.

The MA TESOL program brings together students from a wide variety of backgrounds. U.S.-born students working in France, Saudi Arabia, South Korea, Spain, Thailand, and full-time teachers in K-12 schools across the U.S. often study part-time, taking one or two courses a semester. Students from the region where the university is located and those who have come to the U.S. to complete their degrees before returning to teach in Bangladesh, China, Egypt, Ghana, Iran, Saudi Arabia, South Korea, Spain, Turkey, or Ukraine generally study full-time and attend classes on campus.

HyFlex courses offer rich learning environments for all students in the program, bringing together individuals who would otherwise never have the opportunity to interact with one another. Particularly in a field like TESOL in which culture and language are at the core of the discipline, developing communities of practice where students share their experiences and perspectives as language learners and teachers is invaluable. Replacing in-person with HyFlex courses has also offered a solution to a very practical problem. Sometimes the number of students who plan to attend a TESOL class on campus is below the minimum number required for a course to be offered. Now classes are often filled to capacity.

As the above description of the MA in Higher Education Administration illustrates, there are numerous ways to develop and teach compelling HyFlex courses. For me, the initial design for a HyFlex course is the same as that of an asynchronous online course. A semester-long course is divided into weekly modules containing readings and materials. As students living outside of the U.S. can have difficulty accessing physical copies of textbooks, I use Open Educational Resources (OER) as much as possible. Each weekly module has a PowerPoint presentation with voiceover; the recordings are divided into one- to two-minute chunks to allow students the option of listening to a particular section as often as they like or of skipping over it completely. I use the same PowerPoint, without the voiceover, in the synchronous class sessions, and students can preview the presentation online before class or use it as a means of reviewing if they choose.

Creating opportunities for student interaction and for building community among learners across modalities is essential. In addition to semester-long projects, my HyFlex courses include online discussion boards where all students are expected to share their work and respond to that of their classmates. Each week, there is an "Apply what you know" activity that links theory and practice. For example, in a sociolinguistics course, students compare the web pages for the disability services offices of any two universities focusing on the language used to describe the populations served. Students also have "Making Connections" posts where they share items that connect with the topics we have explored that week. I make references to these posts during synchronous class meetings, seeking to bridge the gap between students who never meet each other face to face and those who spend several hours a week together in-person or via Zoom.

Developing and teaching HyFlex courses can be challenging. Engaging with students online, throughout the week, a key part of any asynchronous course, takes time. In addition, leading group discussions and facilitating pair work in a synchronous class when students are participating both virtually and in-person poses logistical hurdles. For example, in the classroom where I teach the microphones are located in the ceiling, and it can be difficult for students attending virtually to hear what is happening in the classroom; I often encourage students to "use their teacher voices." In addition, it is challenging to effectively and consistently include students who participate virtually, as they can be uncertain how and when to jump into a discussion; I will frequently ask these students directly if they have anything they would like to contribute.

Figure 3: Synchronous Students in Class

Technology plays a vital role in fostering a sense of community in a HyFlex course. When I first began teaching in this mode, the only camera in the room was near the back and focused on the teacher and the whiteboard. As a result, those who attended on Zoom could see only the backs of their classmates' heads. The installation of a second camera near the front of the room has changed this dynamic. Now the virtual students can see their classmates' faces, and I make sure to display the Zoom feed on the classroom screen, in addition to the PowerPoint presentation, so that in-person students can see those who are participating virtually. Pair and small group work play an important role in my classes. Over time, I have developed some strategies but there is still a lot I would like to learn about how to bring together students attending on Zoom and those who are in the physical classroom. Students who have their own computers often log onto Zoom to work in break-out rooms, and I share my own laptop so that those who do not have devices with them can take part. I still need to get better at using the whiteboard feature in Zoom and at switching from one camera to the other so that when I write on the whiteboard, which is at the front of the room, the students attending virtually will be able to see it.

Given the many "moving parts" -- online lessons, in-person sessions, discussions that take place synchronously and asynchronously--I sometimes describe teaching HyFlex courses as a "three-ring circus." In any teaching there are risks; an assignment might not go as planned or a discussion might fall flat and in a HyFlex course technology might not work or students who participate via Zoom might feel isolated from their peers. Nonetheless in the MA TESOL, we have found that HyFlex courses are worth the risk. In the past two years, students living in Racine, Wisconsin and Chicago, Illinois have actively participated in synchronous classes throughout their degrees. One student in Saudi Arabia did not miss a session one semester, and currently a student in Vietnam logs in to one class at midnight and a second which begins 2:00 am Ho Chi Minh City time to meet with others attending class in-person and on Zoom. In short, HyFlex courses open new opportunities to model multiple modes of teaching for our students and to foster discussions that would otherwise be impossible.

Conclusion

Southeast Missouri State University implemented Hylex courses broadly during a time of panic-gogy (Kamenetz, 2020), and we have found strategic implementations for it programmatically in our new normal. HyFlex has allowed us to broaden the pool of potential students exponentially, not just for local students, but for students across the U.S. and around the world. Beyond that access, though, it has also provided a robust learning environment for unique student populations in two graduate programs that are taking advantage of the flexibility that this modality has to offer.

References

Beatty, B. J. (2019). Hybrid-Flexible Course Design: Implementing student-directed hybrid classes (1st ed.). EdTech Books. Retrieved from https://edtechbooks.org/hyflex

Kamenetz, A. (2020, March 19). "Panic-gogy" Teaching online classes during the coronavirus pandemic. National Public Radio. https://www.npr.org/2020/03/19/817885991/panicgogy-teaching-online-classes-during-the-coronavirus-pandemic

Weathers, J., & McNeely, C. (2021). Success of Hyflex teaching modality in animal reproduction. Journal of Animal Science, 99(3), 216–217. https://doi.org/10.1093/jas/skab235.394

Contribute Your Hybrid-Flexible Story

Call for Unit III Case Report Chapter Proposals

Tell your story! Call for Unit III Case Report Chapter Proposals

Submit your proposal soon!
This book explains the principles of hybrid-flexible (HyFlex) course design, explains fundamental practices found in these courses, and reports results around student participation, academic success, and other metrics we may value. The title of the book is: **Hybrid-Flexible Course Design: Implementing student-directed hybrid classes.** A large part of the book is reserved for case reports from faculty and staff at institutions using some form of hybrid-flexible course design, large, mid-sized, or small scale.

We are continuosly looking for an author (or team of authors) who could write a chapter on **[YOUR INSTITUTION]'s Hybrid-Flexible (use your term if you have one) Course Experience**. If you think you might be interested, please read on.

Thank you for considering this invitation. (Please forward to others you know who may also be interested.)

More about this work:

The book URL is https://edtechbooks.org/hyflex and is published under a CC-BY open content license. This license lets others distribute, remix, tweak, and build upon this work, even commercially, as long as they credit the author(s) for the original creation. This is the most accommodating of the creative commons licenses offered and is recommended for maximum dissemination and use of licensed materials. For more on Creative Commons licenses, see: https://edtechbooks.org/-qi

Hybrid-flexible course designs have been used successfully for more than a decade at many higher education institutions with a wide variety of courses. Often the initial impetus for developing a HyFlex approach is a very real need to serve both online and on ground students with a limited set of resources (time, faculty, space) which leads to a multi-modal delivery solution. When students are given the freedom and ability to choose which mode to participate in, from session to session, they are able to create their own unique hybrid experience. We have started calling this a "student-directed hybrid" learning experience.

This volume provides readers with methods, case stories, and strategies related to Hybrid-Flexible (HyFlex) course design so that they may make decisions about using it themselves and even begin their own HyFlex course (re)design. More specifically, based on the needs identified for their course(s), readers will be able to a) determine if and how HyFlex course design could help them solve critical needs, b) take advantage of emerging opportunities to improve their education practice, enabling them to better serve more students, c) gain an awareness of the HyFlex design, d) find their own innovative HyFlex solution to their specific challenges, and e) begin the HyFlex implementation process using

strategies similar to those used by instructors described in this book. The volume describes the fundamental principles of HyFlex design, explains a process for design and development, and discusses implementation factors that instructors have experienced in various higher education institutions. These factors include the drivers, the variations in implementation approaches and constraints, and the results (e.g., student scores, student satisfaction). A series of worksheets provides specific guidance that can be used by individuals or teams engaging in HyFlex design projects at their own institution. Case reports from institutions and faculty who have successfully implemented HyFlex-style courses provide a rich set of real-world stories to draw insights for a reader's own design setting.

If you are interested, please let me know via email bjbeatty@sfsu.edu, and we can discuss specifics for your chapter if you have questions.

Sincerely,

Dr. Brian Beatty, Associate Vice President for Academic Affairs Operations
Associate Professor, Instructional Technologies
447 Administration
San Francisco State University
1600 Holloway Ave
San Francisco, CA 94132
415-338-6833
bjbeatty@sfsu.edu

Appendices

Bibliography of Hybrid-Flexible Literature (using various terms)
Index
Author Affiliations
Author Biographies

Bibliography of Hybrid-Flexible Literature (using various terms)

Note: An updated bibliography can be found at the HyFlex Learning Community site, hyflexlearning.org/bibliography - direct link: https://edtechbooks.org/-cazl

Abdelmalak, M. (March, 2013). *HyFlex course design: A case study of an educational technology course. Proceedings of Society for Information Technology & Teacher Education (SITE) International Conference*, New Orleans, LA USA.

Abdelmalak, M. (2014). *Towards Flexible Learning for Adult Students: HyFlex Design.* In M. Searson & M. Ochoa (Eds.), Proceedings of SITE 2014--Society for Information Technology & Teacher Education International Conference (pp. 706-712). Jacksonville, Florida, United States: Association for the Advancement of Computing in Education (AACE). Retrieved April 4, 2019 from https://edtechbooks.org/-VxGa.

Abdelmalak, M., Parra, J. (2016, October) *Expanding Learning Opportunities for Graduate Students with HyFlex Course Design.* International Journal of Online Pedagogy and Course Design 6(4).

Abdelmalak, M. M., & Parra, J. L. (2018). *Case Study of HyFlex Course Design: Benefits and Challenges for Graduate Students*. In R. Sharma (Ed.), Innovative Applications of Online Pedagogy and Course Design (pp. 298-317). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-5466-0.ch015

Alexander, M.M., Lynch, J.E., Rabinovich, T., & Knutel, P.G. (2014). Snapshot of a hybrid learning environment. *The Quarterly Review of Distance Learning, 15*(1), 9-21.

Beatty, B. (2006, October) *Designing the HyFlex World- Hybrid, Flexible Classes for All Students*. Paper presented at the Association for Educational Communication and Technology International Conference, Dallas, TX.

Beatty, B. (2007). *Transitioning to an Online World: Using HyFlex Courses to Bridge the Gap.* In C. Montgomerie & J. Seale (Eds.), Proceedings of ED-MEDIA 2007--World Conference on Educational Multimedia, Hypermedia & Telecommunications (pp. 2701-2706). Vancouver, Canada: Association for the Advancement of Computing in Education (AACE). Retrieved April 5, 2019 from https://edtechbooks.org/-ohe.

Beatty, B. (2007, October). Hybrid Classes with Flexible Participation Options – If you build it, how will they come? *Proceedings of the Association for Educational Communication and Technology International Conference*, Anaheim, CA.

Beatty, B. (2007, November). *Blended Learning for Students with Choice: The HyFlex Course and Design Process.* Peer-reviewed paper presented at the Thirteenth Sloan-C International Conference on Online Learning, Orlando, FL.

Beatty, B. (2008). *HyFlex Delivery for US Army Counter Insurgency (COIN) Training Applications*. In Lickteig, C. W., Bailenson, J., Beatty, B., Dunleavy, M., Graham, C. R., Kozlowski S.W., & Mayer, R. E. *Innovative Training Methods*

for the Contemporary Operating Environment: Contributions from the Consortium Research Fellows Program (ARI Special Report).* Arlington, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Beatty, B. (2008). Sloan Consortium Effective Practice Award: Using the "HyFlex" Course and Design Process. Retrieved 04/04/2016 from https://edtechbooks.org/-Zvd

Beatty, B. (2009, October). *Student Self-reflections on Learning in a Hybrid Course Environment: Do Participation Mode Differences Lead to Differences in Reflections?* Peer-reviewed paper presented at the Association for Educational Communication and Technology International Conference, Louisville KY.

Beatty, B. (2011, November). *HyFlex Course Design: A Summary Report on Five Years of Implementation.* Peer-reviewed paper presented at the Association for Educational Communication and Technology International Conference, Jacksonville, FL.

Beatty, B. (2012, April). *HyFlex Course Design: The Advantages of Letting Students Choose the Blend*. Peer-reviewed paper presented at Sloan-C Blended Learning Conference, Milwaukee, WI.

Beatty, B. J. (2014). Hybrid courses with flexible participation – The HyFlex Course Design. In L. Kyei-Blankson and E. Ntuli (Eds.) *Practical Applications and Experiences in K-20 Blended Learning Environments. (pp. 153-177).* Hershey, PA: IGI Global.

Beatty, B. J. (2019). *Hybrid-Flexible Course Design: Implementing Student-Directed Hybrid Classes.* EdTech Books. Available online: https://edtechbooks.org/hyflex/

Beatty, B., Littlefield, C., Miller, J., Rhoads, D., Shaffer, D., Shurance, M. and Beers, M. (2016, April) *Hybrid Flexible Course and Program Design: Models for Student-Directed Hybrids*. Paper and panel session presented at the OLC Innovate 2016 Conference, New Orleans, LA.

Bell, J., Sawaya, S., & Cain, W. (2014). Synchromodal classes: Designing for shared learning experiences between face-to-face and online students. *International Journal of Designs for learning, 5*(1), 68-82.

[French language] Bergeron, M.-H. (2014). Innovating to promote access to higher education in rural areas. *Pédagogie Collégiale Vol. 27*, No 4, Summer 2014. Retrieved from http://aqpc.qc.ca/sites/default/files/revue/Bergeron-Vol_27-4.pdf.

Binnewies, S., Wang, Z. (2019) Challenges of Student Equity and Engagement in a HyFlex Course. In C. Allan, C. Campbell, and J. Crough (Eds.) *Blended Learning Designs in STEM Higher Education: Putting* Learning First (pp. 209-230). Singapore: Springer Nature

Boelens, R., De Wever, B., & Voet, M. (2017). Four key challenges to the design of blended learning: A systematic literature review. *Educational Research Review, 22*, pp. 1-18. doi:https://doi.org/10.1016/j.edurev.2017.06.001

Bower, M., Dalgarno, B., Kennedy, G. E., Lee, M. J. W., & Kenney, J. (2015). Design and implementation factors in blended synchronous environments: Outcomes from a cross-case analysis. *Computers & Education, 86*, 1-17.

Bower, M.,Kennedy, G. E., Dalgarno, B., Lee, M. J. W., and Kenney, J. (2014). *Blended synchronous learning: A handbook for educators.* Retrieved from http://blendsync.org/handbook/

Bower M., Kenney, J., Dalgarno, B., Lee, M. J. W., & Kennedy, G. E. (2014). Patterns and principles for blended synchronous learning: Engaging remote and face-to-face learners in rich-media real-time collaborative activities. *Australasian Journal of Educational Technology, 30*(3), 261-272.

Butz, N. T., Stupnisky, R. H., Peterson, E. S., & Majerus, M. M. (2014). Self-determined motivation in synchronous hybrid graduate business programs: Contrasting online and on-campus students. *Online Learning and Teaching, 10*, 211-227.

Butz, N. T., Stupnisky, R. H. (2017). Improving student relatedness through an online discussion intervention: The application of self-determination theory in synchronous hybrid programs. *Computers & Education, 114* (2017), pp. 117-138, 10.1016/j.compedu.2017.06.006

Day, S. & Verhaart, M. (2016). Determining the requirements for geographically extended learning (gxLearning): A multiple case study approach. In S. Barker, S. Dawson, A. Pardo, & C. Colvin (Eds.), *Show Me The Learning.* Proceedings ASCILITE 2016 Adelaide (pp. 182-191).

Day, S., & Verhaart, M. (2016). Beyond Wi-Fi: Using Mobile devices for gxLearning in the field. In M. Verhaart, A. Sarkar, E. Erturk & R. Tomlinson (Eds.), *Proceedings of the 7th Annual Conference of Computing and Information Technology Education and Research in New Zealand incorporating the 29th Annual Conference of the NACCQ, Wellington, New Zealand, 11th-13th July 2016* (pp. 27-33). Retrieved from http://www.citrenz.ac.nz/conferences/2016/pdf/2016CITRENZ_1_Day_gxLearning_16-3.pdf

Detienne, L., Raes, A. & Depaepe, F. (2018). Benefits, Challenges and Design Guidelines for Synchronous Hybrid Learning: A Systematic Literature Review. In T. Bastiaens, J. Van Braak, M. Brown, L. Cantoni, M. Castro, R. Christensen, G. Davidson-Shivers, K. DePryck, M. Ebner, M. Fominykh, C. Fulford, S. Hatzipanagos, G. Knezek, K. Kreijns, G. Marks, E. Sointu, E. Korsgaard Sorensen, J. Viteli, J. Voogt, P. Weber, E. Weippl & O. Zawacki-Richter (Eds.), *Proceedings of EdMedia: World Conference on Educational Media and Technology* (pp. 2004-2009). Amsterdam, Netherlands: Association for the Advancement of Computing in Education (AACE). Retrieved September 20, 2019 from https://edtechbooks.org/-woe.

Donovan, S. A. G. (2018). *Mixed methods study of the fit instructional model on attributes of student success* (Order No. 10935064). Available from ProQuest Dissertations & Theses Global: The Humanities and Social Sciences Collection. (2115548318). Retrieved from https://search.proquest.com/docview/2115548318?accountid=13802

Educause. (2010). *Seven things you should know about the HyFlex course model.* Retrieved 04/04/2016 from http://net.educause.edu/ir/library/pdf/ELI7066.pdf

Elder, S. J. (2018). Multi-Options: An Innovative Course Delivery Methodology. *Nursing Education Perspectives 39*(2), pp. 110-112.

Gobeil-Proulx, J. (2019). La perspective étudiante sur la formation comodale, ou hybride flexible. [What do university students think about hybrid-flexible, or HyFlex courses?] *Revue internationale des technologies en pédagogie universitaire*, *16*(1), pp. 56-67. Available online: https://doi.org/10.18162/ritpu-2019-v16n1-04

Gounari, P. and Koutropoulos, A. (2015). Using Blended Principles to Bridge the Gap between Online and On-Campus Courses. In L. Kyei-Blankson and E. Ntuli (Eds.) *Practical Applications and Experiences in K-20 Blended Learning Environments. (pp. 178-190).* Hershey, PA: IGI Global.

He, W., Gajski, D., Farkas, G., Warschauer, M. (2015). Implementing flexible hybrid instruction in an electrical engineering course: The best of three worlds? *Computers & Education, vol 81*, pp.59-68.

Hill, J., Yang, X., Kim, E. E., Oh, J, Choi, I., Branch, R. M., Lee, H., & Keisler, B. (2018). *Creating a Flexibly Accessible Learning Environment.* Conference presentation at Association for Educational Communications and Technology Annual Convention. Kansas City, MO. (2018, October).

Irvine, V. (2009). The emergence of choice in 'multi-access' learning environments: transferring locus of control of course access to the learner. In G. Siemens, C. Fulford (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2009, Association for the Advancement of Computing in Education, Chesapeake, VA (2009*), pp. 746-752.

Irvine, V. (2010). Exploring learner needs for collaboration and access. In J. Herrington, B. Hunter (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2010, Association for the*

Advancement of Computing in Education, Chesapeake, VA (2010), pp. 1093-1097.

Irvine, V., Code, J., & Richards, L. (2013). Realigning higher education for the 21st century learner through multi-access learning. *Journal of Online Learning and Teaching, 9*(2), 172.

[Spanish language] Juarez-Popoca, D., Gastelu, C. A. T., Herrera-Diaz, L. E. (2014). El modelo HyFlex: Una propuesta de formación híbrida y flexible. In I. E. Gamez (Ed.) *Los Modelos Tecno-Educativos, revolucionando el aprendizaje del siglo XXI*, pp. 127-142.

Koskinen, M. (2014). *Understanding the Needs of Adult Graduate Students: An Exploratory Case Study of a Hyflex Learning Environment.* Northeastern University, ProQuest Dissertations Publishing, 2018. 13419414.

Kyei-Blankson, L. & Godwyll, F. (2010). *An Examination of Learning Outcomes in Hyflex Learning Environments*. In J. Sanchez & K. Zhang (Eds.), Proceedings of E-Learn 2010--World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education (pp. 532-535). Orlando, Florida, USA: Association for the Advancement of Computing in Education (AACE). Retrieved April 5, 2019 from https://edtechbooks.org/-wNs.

Kyei-Blankson, L., Godwyll, F., Nur-Awaleh, M. & Keengwe, J. (2011). *The New Blend: When students are given the option to choose.* In M. Koehler & P. Mishra (Eds.), Proceedings of SITE 2011--Society for Information Technology & Teacher Education International Conference (pp. 433-436). Nashville, Tennessee, USA: Association for the Advancement of Computing in Education (AACE). Retrieved April 5, 2019 from https://edtechbooks.org/-PxP.

Kyei-Blankson, L., Godwyll, F., Nur-Awaleh, M. (2014). Innovative blended delivery and learning: exploring student choice, experience, and level of satisfaction in a hyflex course. *International Journal of Innovation and Learning 16*(3), pp. 243-252.

Lafortune, A. M. (2018). *Differences in Students' Perceptions of the Community of Inquiry in a Blended Synchronous Delivery Mode.* Université de Sherbrooke Dissertation.

Lakhal, S., Bateman, D. & Bédard, J. (2017). Blended Synchronous Delivery Mode in Graduate Programs: A Literature Review and Its Implementation in the Master Teacher Program. *Collected Essays on Learning and Teaching 10*, pp. 47-60.

Lakhal, S., Khechine, H. & Pascot, D. (2014). Academic Students' Satisfaction and Learning Outcomes in a HyFlex Course: Do Delivery Modes Matter?. In T. Bastiaens (Ed.), *Proceedings of World Conference on E-Learning* (pp. 1075-1083). New Orleans, LA, USA: Association for the Advancement of Computing in Education (AACE). Retrieved June 21, 2019 from https://edtechbooks.org/-ysYq.

Lieberman, M. (2018, January 24). Introducing a new(-ish) learning mode: Blendflex/hyflex. *Inside Higher Ed.* Available online: https://edtechbooks.org/-pww

Leijon, M., & Lundgren, B. (2016). Connecting physical and virtual spaces in a HyFlex pedagogic model with focus on interaction. Presented at: Designs for Learning conference. *Designing New Learning Ecologies*, Copenhagen, 2016, Aalborg, Denmark: Aalborg University Press.

Leijon, M., & Lundgren, B. (2019). Connecting Physical and Virtual Spaces in a HyFlex Pedagogic Model with a Focus on Teacher Interaction. *Journal of Learning Spaces, 8*(1), 2019.

Lightner, C. A., & Lightner-Laws, C. A. (2016). A blended model: simultaneously teaching a quantitative course traditionally, online, and remotely. *Interactive Learning Environments*, *24*(1), 224–238. https://doi-org.jpllnet.sfsu.edu/10.1080/10494820.2013.841262

Liu, C. A., & Rodriguez, R. C. (2019). Evaluation of the impact of the Hyflex learning model. International *Journal of Innovation and Learning, 25*(4), pp. 393-411.

Love, S. (2015). *A Quantitative Inquiry into First Generation Students' Readiness for Distance Education*. n.p.: ProQuest Dissertations Publishing.

Malczyk, B. R. (2019). Introducing Social Work to HyFlex Blended Learning: A Student-centered Approach. *Journal of Teaching in Social Work 39*(4-5), pp. 414-428.

Marquart, M., Englisher, M., Tokieda, K., and Telfair-Garcia, A. (2018, February 22). *One class, two modes of participation: Fully integrating online students into residential classes via web conferencing.* Poster presented at the Columbia University Center for Teaching and Learning's Celebration of Teaching and Learning Symposium, New York, NY. doi:10.7916/D8KW6TK3.

McCluskey, C. P. S., Shaffer, D. R., Grodziak, E. M., & Hove, K. W. (2012). *Strategic Plan on FlexLearning*. The Pennsylvania State University Lehigh Valley campus, Center Valley, PA.

McGee, P., & Anderson, M. (2013). Project realities: Shifting course delivery method . In Benson, A. D., Moore, J. L., & van Rooji, S. W. (Eds.) *Cases on Educational Technology Planning, Design and Implementation: A Project Management Perspective, pp. 114-13.* Hersey, PA: IGI Global.

McGee, P., & Reis, A. (2012). *Blended course design: A synthesis of best practices.* Journal of Asynchronous Learning Networks, 16(4), 7-22.

Meyer zu Hörste, H., and Vanderbeke, J. (2018). *Multimedia Students: Engaging across platforms. An Investigation of Student Engagement in the Media and Communication Master Programme at Malmö University.* Master's thesis at Malmö universitet/Kultur och samhälle (2018).

Miller, J. B. and Baham, M. E. (2018). *COMPARING THE HYFLEX (HYBRID-FLEXIBLE) MODEL OF COURSE DELIVERY IN AN INTRODUCTORY STATISTICS COURSE AND A PROBABILITY AND STATISTICS COURSE FOR ENGINEERS AND SCIENTISTS.* Invited paper presented at International Association for Statistical Education 2018, Kyoto, Japan. Available online: https://iase-web.org/icots/10/proceedings/pdfs/ICOTS10_4H2.pdf

Miller, J. B., Risser, M. D., and Griffiths, R. P. (2013). Student Choice, Instructor Flexibility: Moving Beyond the Blended Instructional Model. *Issues and Trends in Educational Technology 1*(1), pp. 8-24. Available at: https://edtechbooks.org/-MBVi

Miller, W. (2011). Mode-neutral and the need to transform teaching. *Public Administration Quarterly*, *35*(4), 446-465.

Mousa, M., Abdelmalak, M., and Parra, J. L. (2018). Case Study of HyFlex Course Design: Benefits and Challenges for Graduate Students. In R. C. Sharma (Ed.), *Innovative Applications of Online Pedagogy and Course Design (pp. 298-317).* Hershey, PA: IGI Global.

Musgrove, A. & Bryan, V. C. (2014). Theory and Application: Construction of Multimodal eLearning. In V. X. Wang (Ed.), *Handbook of Research on Education and Technology in a Changing Society, (pp. 1068-1083*). Hershey, PA: IGI Global. DOI: 10.4018/978-1-4666-6046-5.ch079

Nortvig, A-M. (2014). E-learning in poly-topic settings. *Electronic Journal of E-Learning*, *12*(2), 206-214.

Nur-Awaleh, M. , & Kyei-Blankson, L. (2010). Assessing e-learning and student satisfaction in a blended and flexible environment. *2010 International Conference on Information Society*, *(pp. 481-483).*

Parra, J. & Bontly, S.W. (2016). Transforming learning environments: Co-constructionism in higher education classrooms. In Proceedings of EdMedia 2016--World Conference on Educational Media and Technology (pp. 719-723). Vancouver, BC, Canada: Association for the Advancement of Computing in Education (AACE). Retrieved September 13, 2019 from https://edtechbooks.org/-aqg.

[Spanish language] Popoca, D. J., Gastelu, C. A. T., and Diaz, L.E.H. (2014). *El modelo HyFlex: Una propuesta de formación híbrida y flexible.* In I. E. GÃ³mez (Ed.). Los Modelos Tecno-Educativos, revolucionando el aprendizaje del siglo XXI. pp. 127-142. Universidad Veracruzana- RegiÃ³n Veracruz.

Raes, A., Vanneste, P., Pieters, M., Windey, I., Van Den Noortgate, W., & Depaepe, F. (2020). Learning and instruction in the hybrid virtual classroom: An investigation of students' engagement and the effect of quizzes. *Computers & Education, 143, (2020) 103682*.

Rasmussen, R. C. (2003). *The quantity and quality of human interaction in a synchronous blended learning environment.* Doctoral dissertation. Brigham Young University. Available from: ProQuest Dissertations & theses. (UMI No. 305345928).

Rhoads, D. D. (2020). *Traditional, Online or Both? A Comparative Study of University Student Learning and Satisfaction Between Traditional and Hyflex Delivery Modalities.* Dissertation Concordia University Irvine, 2020, 148; 27995688. Retrieved July 1, 2020 from https://edtechbooks.org/-pzuA

Robertson, B. and Kelly, K. (2013). Operating a Very Large-Section, Hybrid Principles of Marketing Class at a Public University: Lessons Learned over Ten Years. *Atlantic Marketing Journal 2*(3), Article 10. Retrieved September 7, 2019 from https://edtechbooks.org/-jVE

[Spanish language] Romero, H. Y., Chávez, N. V., and Gutiérrez, I. M. (2016). HyFlex, hybrid and flexible model for university education: Case study: Universidad Técnica Particular de Loja — Ecuador, *2016 11th Iberian Conference on Information Systems and Technologies (CISTI)*, Las Palmas, 2016, pp. 1-4.

Schaffhauser, D. (2012). Tuning the Blend. *Campus Technology, December 2012*, pp. 22-24.

Smith, B., Reed, P., and Jones, C. (2008) 'Mode Neutral' Pedagogy. *European Journal of Open, Distance and e-Learning.* https://edtechbooks.org/-nba

Staff Writers, (2013, January 17). The HyFlex Learning Model: Online Ed's Most Customizable Idea Yet [Web log post]. Retreived from https://edtechbooks.org/-SNt

[Chinese language] Su, M. (2013). Traditional Universities Need Innovative Change: An Interview with Prof. Brian Beatty. China Open Education Research, 19(1), pp. 4-8.

Taylor, J. A., and Newton, D. (2012). Beyond Blended Learning: A case study of institutional change at an Australian university. *Internet and Higher Education 18*(2013) pp. 54-60.

Wright, D. (2016). The HyFlex Course Design: A Case Study on Adult and Career Education Courses. *National Social Science Journal 48*(2). pp. 88-93.

Tsuji, B., Pierre, A., Van Roon, P. & Vendetti, C. (2012). Web Versus Face-to-Face Tutorials: Why I Didn't Go To Class In My Pyjamas. In T. Bastiaens & G. Marks (Eds.), Proceedings of E-Learn 2012--World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 1 (pp. 802-806). Montréal, Quebec, Canada: Association for the Advancement of Computing in Education (AACE). Retrieved September 13, 2019 from https://edtechbooks.org/-zURC.

Verhaart, M. & Hagen-Hall, K. (2012). *gxLearning, teaching to geographically extended classes.* In M. Lopez, M. Verhaart (Eds.) Proceedings of the 3rd Annual Conference of the Computing and Information Technology Research and Education of New Zealand Conference (Incorporating the 25th NACCQ Conference), Christchurch, New Zealand. October 7-10. pp 75-81.

Weitze Laerke, C. (2016). Learning Design Patterns for Hybrid Synchronous Video-Mediated Learning Environments. In: Nortvig, A.-M., Sørensen, B. H., Misfeldt, M., Ørngreen, R., Allsopp, B. B., Henningsen, B. S., & Hautopp, H. (eds.),

Proceedings of the 5th International Conference on Designs for Learning, 1st ed., 236–252. Aalborg Universitetsforlag. DOI: https://edtechbooks.org/-zsa

[Spanish language] Yaguana Romero, H., Chavez, N., & Gutierrez, I. (2016). *HyFlex, hybrid and flexible model for university education: Case study: Universidad Técnica Particular de Loja — Ecuador.* 2016 11th Iberian Conference on Information Systems and Technologies (CISTI), 2016, 1-4.

Yuskauskas, A., Shaffer, D., & Grodziak, E. (2015). Employing disruptive innovation in a nascent undergraduate health policy program. *The Journal of Health Administration Education*, *32*(4), 515.

Zemeckis, D. R. (2020). Offering a Hyflex Fisheries Science Course for Stakeholders of New Jersey's Fisheries. *Journal of Extension, 58*(1), Article #58-1iw4.

Suggested Items

Please suggest additions to this bibliography in the field below

Text is automatically submitted upon leaving or closing the page.

Brian J. Beatty

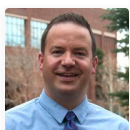San Francisco State University

Dr. Brian Beatty is Professor of Instructional Technologies and co-coordinator of the Instructional Design and Technology MA program in the Department of Equity, Leadership Studies and Instructional Technologies at San Francisco State University. Brian's primary areas of interest and research include social interaction in online learning, flipped classroom implementation, and developing instructional design theory for Hybrid-Flexible learning environments. At SFSU, Dr. Beatty pioneered the development and evaluation of the HyFlex course design model for blended learning environments, implementing a "student-directed-hybrid" approach to better support student learning.

Previously (2012 – 2020), Brian was Associate Vice President for Academic Affairs Operations at San Francisco State University (SFSU), overseeing the Academic Technology unit and coordinating the use of technology in the academic programs across the university. He worked closely with IT professionals and leaders in other units to coordinate overall information technology strategic management at SFSU. Prior to 2012, Brian was Associate Professor and Chair of the Instructional Technologies department in the Graduate College of Education at SFSU. He received his Ph.D. in Instructional Systems Technology from Indiana University Bloomington in 2002. Dr. Beatty also holds several CA single-subject teaching credentials, an M.A. in Instructional Technologies from SF State and a B.S. in Electrical Engineering from Marquette University. Dr. Beatty has more than 30 years of experience as a classroom teacher, trainer, and instructional designer at schools, businesses, and the US Navy.

Index

Author Affiliations

Chelsea McNeely

Southeast Missouri State University

Dr. Chelsea McNeely is Director of Southeast Online and Early College Programs at Southeast Missouri State University. Her research interests are in supporting faculty in delivering flexible learning...

Abby Ruessler

Southeast Missouri State University

Abby Ruessler, MA is the Online Instructional Coordinator for Southeast Missouri State University. She has her Master of Arts in Professional Writing from Southeast and has taught for the English depa...

Melinda E. Baham

University of Michigan

Sarah Dietrich

Southeast Missouri State University

Dr. Sarah Dietrich- is an associate professor of English at Southeast Missouri State University where she teaches in and serves as co-coordinator of the Masters in TESOL. She has published research in...

Ben Andera

Central Michigan University

Dr. Ben Andera is the Executive Director of Academic and Research Computing at Central Michigan University. In his professional role, Dr. Andera oversees multiple teams supporting academic and resear...

Susan Balter-Reitz

Montana State University Billings

Dr. Susan Balter-Reitz is a Professor of Communication at Montana State University Billings. She has served the university as Graduate Director, Director of e-Learning and Interim Vice Provost. Her ex...

Brian J. Beatty

San Francisco State University

Dr. Brian Beatty is Professor of Instructional Technologies and co-coordinator of the Instructional Design and Technology MA program in the Department of Equity, Leadership Studies and Instructio...

John Bevacqua

Monash University

John is an Australian legal academic and commercial lawyer. John holds a PhD in tax law from the University of New South Wales. John has held multiple roles as Director of Education and Academic Direc...

Samuel Boerboom

Montana State University Billings

Dr. Samuel Boerboom is an Associate Professor of Communication Theatre at Montana State University Billings. He currently chairs the Department of Communication and Theatre. Sam has served as chair of...

Piet Bonte

KU Leuven

Piet Bonte is IT staff at KU Leuven and core member of the Technology-Enhanced Collaborative (TECOL) project. He provides central IT-AV support for education, research, administration and policy and m...

Brooke Hildebrand Clubbs

Southeast Missouri State University

Dr. Brooke Hildebrand Clubbs is an assistant professor and program coordinator for the Master of Arts in Higher Education Administration at Southeast Missouri State University. She has published and p...

Lisa Burke

University of St. Thomas

Lisa Burke is the director of the St. Thomas E-learning and Research Group on the University of St. Thomas Minneapolis campus, working with faculty and programs in the College of Education, Leadership...

René Cintrón

Louisiana's Community & Technical Colleges

Dr. René Cintrón is, first and foremost, dad of three amazing daughters. He is the Chief Education and Training Officer for Louisiana Community and Technical College Syste...

Meg Colasante

Deakin University

Dr. Meg Colasante (PhD, SFHEA) is a Lecturer at Deakin University in Australia. At Deakin, Meg currently (2022) works in faculty development in the Learning Innovations team of the Faculty of Business...

Stephanie Donovan

Peirce College

Stephanie Donovan, Ed.D., MBA, RHIA is Faculty Chair, Health Programs with more than 15 years of successful experience teaching and administering undergraduate programs in health information managemen...

John Doyle

Cabrini University

John Doyle is an Assistant Professor of Video Production at Cabrini University teaching Video Production, Advanced Editing, Short Documentary Film, Short Narrative Film, and Multimedia Storytelling. ...

Ben Harley

Northern State University

Ben Harley, Ph.D., is the inaugural Director of the Center for Excellence in Teaching and Learning at Northern State University in Aberdeen, SD where he also serves as an Assistant Professor of Rhetor...

Glori Hinck

St. Thomas eLearning and Research Center

Dr. Glori Hinck is an Instructional Designer and Research Manager for the St. Thomas eLearning and Research Center (STELAR) at the University of St. Thomas in Minneapolis/St. Paul. In this role, s...

Melanie Lefebvre

Cambrian College

Melanie Lefebvre graduated with an Honours Bachelor of Arts in Psychology from Laurentian University in Ontario, Canada in 2007. She then began working at the Canadian Mental Health Association suppor...

Cathy M. Littlefield

Peirce College

Cathy M. Littlefield, Ed.D., M.B.A., serves Peirce College in the capacity of Professor and Faculty Chair of the Business Division and joined Peirce College in 2012. As faculty Chair of the Busi...

Loh Gin Hin

Temasek Polytechnic

Dr Loh has about 20 years of tertiary teaching and educational research experience in Temasek Polytechnic, Singapore and has a Doctorate in Educational Studies at the University of Sheffield (2021). ...

Danette Long

Evergreen Hutterite Colony

Danette Long, Ed.S., served as Instructional Designer and Program Lead for Quality Assurance at Northern State University's Center for Excellence in Teaching and Learning from May 2018 to August...

Matthea Marquart

Columbia University School of Social Work

Matthea Marquart is a social worker, leader, educator, and online education expert. She is the Assistant Dean of Online Education at Columbia University's School of Social Work (CSSW), a Senior ...

Mark McLean

Fletcher Technical Community College

Dr. Mark McLean is the Vice Chancellor for Finance and Administration at Fletcher Technical Community College in Schriever, Louisiana. Mark previously served as the Assistant Chair of Busine...

Zahira Merchant
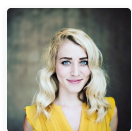
San Francisco State University

Zahira Merchant is an Associate Professor of Instructional Technologies Program at San Francisco State University (SFSU). She received her Ph.D. in Educational Psychology (Emphasis in Education Techno...

Jackie Bryce Miller

University of Michigan

Jackie Bryce Miller (they/them/theirs) holds the rank of Lecturer IV in the Department of Statistics at the University of Michigan. Jack earned a one-of-a-kind PhD in statistics education fr...

Svetlana Miftahov-Rapoport

Bow Valley College

Svetlana Miftahov-Rapoport is an authentic educator and relationship builder. Her life passion is service to others. Having traveled the world extensively, Svetlana lived and worked in three different...

Marieke Pieters

KU Leuven

Marieke Pieters holds a Master in Geography and was teacher for more than 15 years in a secondary school in Kortrijk (https://lyceumolvvlaanderen-kortrijk.rhizo.be/). In 2018 she joined ITEC, im...

Annelies Raes

University of Leuven

Annelies Raes holds a PhD in Educational Technology by Ghent University and is currently working as Postdoctoral Researcher at the Centre for Instructional Psychology and Technology (CIP&T) ...

David Rhoads

Vanguard University

Dr. David Rhoads is currently serving as the Director of Teaching Excellence and Digital Pedagogy at Vanguard University in Costa Mesa, California and has been teaching in the areas of leadership and ...

Gina Riley, Ph.D.

CUNY Hunter College

Gina Riley, Ph.D. is a Clinical Professor and Program Leader of the Adolescent Special Education Program at CUNY – Hunter College. Dr. Riley has years of experience working with teens diagnosed with...

Jerusalem Rivera-Wilson, Ph.D.

University at Albany

Dr. Jerusalem Rivera-Wilson, Director of Continuing Education and Professional Development for the School of Education and the Academy for the Advancement of Teaching, Leadership, and Schools in the S...

Amanda H. Rosenzweig

Delgado Community College

Dr. Amanda Rosenzweig earned a PhD in Curriculum and Instruction from the University of New Orleans in 2012, and has a MS in Biology from the University of Louisiana at Monroe. Teaching at D...

Jeanne C. Samuel

Delgado Community College

Dr. Jeanne Samuel is the Dean of Distance Learning & Instructional Technology (DLIT) for Delgado Community College, New Orleans, LA. Jeanne is very interested in game theory for learning and asses...

Shirley Tan

Temasek Polytechnic

Dr. Shirley Tan is a senior educational developer at the Learning Academy of Temasek Polytechnic in Singapore. With over 20 years of experience in teaching and training and an additional decade in med...

Elise Verdooner

Columbia University

Elise Verdooner, a Fulbright Scholar and returned Peace Corps volunteer, has worked in international development for eight years. She is the former Executive Director of TEEEM, a global nonprofit orga...

Swapna Verma

Monash University

Swapna Verma is currently a Lecturer in the Department of Business Law and Taxation at the Monash Business School, Monash University, Australia. Since 2019, she has primarily been Chief Examiner, Unit...

Author Biographies

Chelsea McNeely

Southeast Missouri State University

Dr. Chelsea McNeely is Director of Southeast Online and Early College Programs at Southeast Missouri State University. Her research interests are in supporting faculty in delivering flexible learning...

Sarah Dietrich

Southeast Missouri State University

Dr. Sarah Dietrich- is an associate professor of English at Southeast Missouri State University where she teaches in and serves as co-coordinator of the Masters in TESOL. She has published research in...
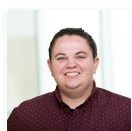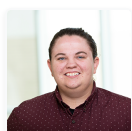
Abby Ruessler

Southeast Missouri State University

Abby Ruessler, MA is the Online Instructional Coordinator for Southeast Missouri State University. She has her Master of Arts in Professional Writing from Southeast and has taught for the English depa...

Ben Andera

Central Michigan University

Dr. Ben Andera is the Executive Director of Academic and Research Computing at Central Michigan University. In his professional role, Dr. Andera oversees multiple teams supporting academic and resear...

Melinda E. Baham

University of Michigan

Susan Balter-Reitz

Montana State University Billings

Dr. Susan Balter-Reitz is a Professor of Communication at Montana State University Billings. She has served the university as Graduate Director, Director of e-Learning and Interim Vice Provost. Her ex...

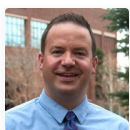## Brian J. Beatty

San Francisco State University

Dr. Brian Beatty is Professor of Instructional Technologies and co-coordinator of the Instructional Design and Technology MA program in the Department of Equity, Leadership Studies and Instructio...

John Bevacqua

Monash University

John is an Australian legal academic and commercial lawyer. John holds a PhD in tax law from the University of New South Wales. John has held multiple roles as Director of Education and Academic Direc...

Samuel Boerboom

Montana State University Billings

Dr. Samuel Boerboom is an Associate Professor of Communication Theatre at Montana State University Billings. He currently chairs the Department of Communication and Theatre. Sam has served as chair of...

Piet Bonte

KU Leuven

Piet Bonte is IT staff at KU Leuven and core member of the Technology-Enhanced Collaborative (TECOL) project. He provides central IT-AV support for education, research, administration and policy and m...

Brooke Hildebrand Clubbs

Southeast Missouri State University

Dr. Brooke Hildebrand Clubbs is an assistant professor and program coordinator for the Master of Arts in Higher Education Administration at Southeast Missouri State University. She has published and p...

Lisa Burke

University of St. Thomas

Lisa Burke is the director of the St. Thomas E-learning and Research Group on the University of St. Thomas Minneapolis campus, working with faculty and programs in the College of Education, Leadership...

René Cintrón

Louisiana's Community & Technical Colleges

Dr. René Cintrón is, first and foremost, dad of three amazing daughters. He is the Chief Education and Training Officer for Louisiana Community and Technical College Syste...

Meg Colasante

Deakin University

Dr. Meg Colasante (PhD, SFHEA) is a Lecturer at Deakin University in Australia. At Deakin, Meg currently (2022) works in faculty development in the Learning Innovations team of the Faculty of Business...

Stephanie Donovan

Peirce College

Stephanie Donovan, Ed.D., MBA, RHIA is Faculty Chair, Health Programs with more than 15 years of successful experience teaching and administering undergraduate programs in health information managemen...
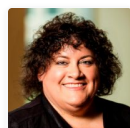
John Doyle

Cabrini University

John Doyle is an Assistant Professor of Video Production at Cabrini University teaching Video Production, Advanced Editing, Short Documentary Film, Short Narrative Film, and Multimedia Storytelling. ...

Ben Harley

Northern State University

Ben Harley, Ph.D., is the inaugural Director of the Center for Excellence in Teaching and Learning at Northern State University in Aberdeen, SD where he also serves as an Assistant Professor of Rhetor...

Glori Hinck

St. Thomas eLearning and Research Center

Dr. Glori Hinck is an Instructional Designer and Research Manager for the St. Thomas eLearning and Research Center (STELAR) at the University of St. Thomas in Minneapolis/St. Paul. In this role, s...

Melanie Lefebvre

Cambrian College

Melanie Lefebvre graduated with an Honours Bachelor of Arts in Psychology from Laurentian University in Ontario, Canada in 2007. She then began working at the Canadian Mental Health Association suppor...
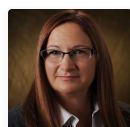
Cathy M. Littlefield

Peirce College

Cathy M. Littlefield, Ed.D., M.B.A., serves Peirce College in the capacity of Professor and Faculty Chair of the Business Division and joined Peirce College in 2012. As faculty Chair of the Busi...

Loh Gin Hin

Temasek Polytechnic

Dr Loh has about 20 years of tertiary teaching and educational research experience in Temasek Polytechnic, Singapore and has a Doctorate in Educational Studies at the University of Sheffield (2021). ...

Danette Long

Evergreen Hutterite Colony

Danette Long, Ed.S., served as Instructional Designer and Program Lead for Quality Assurance at Northern State University's Center for Excellence in Teaching and Learning from May 2018 to August...

Matthea Marquart

Columbia University School of Social Work

Matthea Marquart is a social worker, leader, educator, and online education expert. She is the Assistant Dean of Online Education at Columbia University's School of Social Work (CSSW), a Senior ...

Mark McLean

Fletcher Technical Community College

Dr. Mark McLean is the Vice Chancellor for Finance and Administration at Fletcher Technical Community College in Schriever, Louisiana. Mark previously served as the Assistant Chair of Busine...

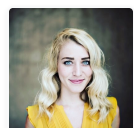## Zahira Merchant

San Francisco State University

Zahira Merchant is an Associate Professor of Instructional Technologies Program at San Francisco State University (SFSU). She received her Ph.D. in Educational Psychology (Emphasis in Education Techno...

Jackie Bryce Miller

University of Michigan

Jackie Bryce Miller (they/them/theirs) holds the rank of Lecturer IV in the Department of Statistics at the University of Michigan. Jack earned a one-of-a-kind PhD in statistics education fr...

Svetlana Miftahov-Rapoport

Bow Valley College

Svetlana Miftahov-Rapoport is an authentic educator and relationship builder. Her life passion is service to others. Having traveled the world extensively, Svetlana lived and worked in three different...

Marieke Pieters

KU Leuven

Marieke Pieters holds a Master in Geography and was teacher for more than 15 years in a secondary school in Kortrijk (https://lyceumolvvlaanderen-kortrijk.rhizo.be/). In 2018 she joined ITEC, im...

Annelies Raes

University of Leuven

Annelies Raes holds a PhD in Educational Technology by Ghent University and is currently working as Postdoctoral Researcher at the Centre for Instructional Psychology and Technology (CIP&T) ...
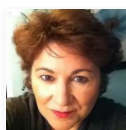
David Rhoads

Vanguard University

Dr. David Rhoads is currently serving as the Director of Teaching Excellence and Digital Pedagogy at Vanguard University in Costa Mesa, California and has been teaching in the areas of leadership and ...
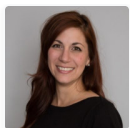
Gina Riley, Ph.D.

CUNY Hunter College

Gina Riley, Ph.D. is a Clinical Professor and Program Leader of the Adolescent Special Education Program at CUNY – Hunter College. Dr. Riley has years of experience working with teens diagnosed with...

Jerusalem Rivera-Wilson, Ph.D.

University at Albany

Dr. Jerusalem Rivera-Wilson, Director of Continuing Education and Professional Development for the School of Education and the Academy for the Advancement of Teaching, Leadership, and Schools in the S...

Amanda H. Rosenzweig

Delgado Community College

Dr. Amanda Rosenzweig earned a PhD in Curriculum and Instruction from the University of New Orleans in 2012, and has a MS in Biology from the University of Louisiana at Monroe. Teaching at D...

Jeanne C. Samuel

Delgado Community College

Dr. Jeanne Samuel is the Dean of Distance Learning & Instructional Technology (DLIT) for Delgado Community College, New Orleans, LA. Jeanne is very interested in game theory for learning and asses...

Shirley Tan

Temasek Polytechnic

Dr. Shirley Tan is a senior educational developer at the Learning Academy of Temasek Polytechnic in Singapore. With over 20 years of experience in teaching and training and an additional decade in med...

Elise Verdooner

Columbia University

Elise Verdooner, a Fulbright Scholar and returned Peace Corps volunteer, has worked in international development for eight years. She is the former Executive Director of TEEEM, a global nonprofit orga...

Swapna Verma

Monash University

Swapna Verma is currently a Lecturer in the Department of Business Law and Taxation at the Monash Business School, Monash University, Australia. Since 2019, she has primarily been Chief Examiner, Unit...