

Reflecting on HyFlex Teaching:

STEPS FOR A SUCCESSFUL EXPERIENCE



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Abstract

HyFlex teaching has become increasingly popular in online and hybrid learning. The author explores HyFlex course delivery in this article and provides practical steps for faculty to create an enjoyable teaching and student experience. It includes suggestions on delegating responsibilities, setting clear policies, and working in advance to clarify terms, meanings, and deadlines. The author also discusses student participation, instructor expectations, and how to engage students while delivering hybrid and flexible courses. HyFlex courses require ongoing reflection, evaluation, and improvement of the HyFlex teaching and course delivery model.

There are many models for flexible teaching and class design. Before the pandemic, early proponents of hybrid delivery started using the term hybrid-flexible or HyFlex (Beatty, 2010, 2019) to describe a flexible course delivery method that allows students to attend class remotely or in person. HyFlex classes were offered as a result of “a genuine 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” (Beatty, 2010). While hybrid courses may vary according to educational institutions, in most cases, it means a combination of asynchronous and synchronous in-person and online delivery options (Bower et al., 2015). These delivery methods are in addition to other aspects of HyFlex, such as hybrid and flexible class policies for learners.

One appeal of HyFlex teaching is the ability to address the challenges of scheduling classes and exams for students. It recognizes the evolving nature of modern student life and adapts accordingly (Adbelmalak, 2014). This need for adaptation became even more apparent during the pandemic when schools swiftly transitioned to online learning (Rashid & Yadav, 2020). The concept of alternate delivery, including synchronous courses, where classes run from different locations and students access them simultaneously, and asynchronous courses, where class materials can be accessed from different locations at different times, were introduced long before the pandemic (Hiltz et al., 2007; Vivolo, 2019). What has changed recently is the need to adapt quickly to develop policies to deliver online courses. Many learners are returning to in-person learning post-pandemic, and numerous possibilities exist for future course delivery methods. HyFlex teaching builds upon these existing approaches, providing students with a balanced and versatile learning experience (Formentin & Auger, 2021).

HyFlex teaching, as a blend of various instructional approaches, enhances the learning experience by drawing on established theories such as the blended learning theory (Halverson & Graham, 2019) and constructivism (Mohammed & Kinyó, 2020). Blended learning theory emphasizes the combination of face-to-face and online learning to create an educational environment (Anthony et al., 2022). By integrating these components, students benefit from both the collaborative opportunities of in-person interaction and the flexibility of access to online resources.

Constructivism focuses on getting students actively involved in their learning. It encourages them to build their understanding through hands-on experiences. In a HyFlex setting, students can choose their preferred mode of participation. Whether it be through collaborative group work, asynchronous discussion, or interactive online modules, students actively construct their understanding of the content and connect theoretical concepts to real-world applications (Leslie, 2021). HyFlex teaching aligns with these theories by providing a balanced and versatile learning environment to offer greater flexibility, access to resources, and opportunities for self-paced learning (Singh et al., 2021).



The significant adoption of HyFlex and hybrid teaching has become a viable long-term alternative. This format may work better for some courses and delivery methods (Miller & Baham, 2018; Nõuakas et al., 2023). Following the initial onset of the pandemic, it suddenly became necessary to move to a more flexible delivery model (Hodges et al., 2020), including teaching subjects that were never initially intended for this type of format (Barbour et al., 2020). This adjustment involved a new way of thinking and relaying knowledge.

The Benefits of a HyFlex Teaching Model

Using the HyFlex model allows for personalized learning experiences, empowering students to engage with course content in ways that align with their own learning styles and schedules (Whalley et al., 2021). Flexibility and hybrid delivery enhance student engagement, fostering a sense of ownership and agency in the learning process. Hybrid and flexible delivery also promotes improved access to education by breaking down geographical and temporal barriers to educational opportunities, particularly for non-traditional students. Students in remote areas or those with personal obligations can find traditional classroom attendance more challenging.

The HyFlex model accommodates the needs of students beyond the classroom. In contrast, traditional teaching models are not as flexible when juggling competing student demands such as work, family, childcare, and health issues. Research has shown that the COVID-19 pandemic has exacerbated student needs (Lederer et al., 2021) and, in some cases, led to ongoing challenges (Lischer et al., 2021).

HyFlex enhances student autonomy by offering various ways to engage with course material. Students can select the mode of participation that suits their learning preferences and schedules in real-time discussions, asynchronous activities, or a mix of both. The focus is on meeting learning objectives rather than adhering to a single, prescribed way of participating in the course.

This approach acknowledges students' diverse learning preferences and encourages them to leverage their strengths to contribute meaningfully to the learning community. For instance, in specific courses, students may engage in asynchronous peer collaboration and group work (Gascoigne, 2022), allowing them to connect with classmates at their convenience and work together towards shared goals. This flexibility accommodates varying schedules and promotes independent thinking, problem-solving, and self-directed learning (Gulley, 2022). Additionally, students can actively participate in multiple modes based on the course (Kohnke & Moorhouse, 2021; Leijon & Lundgren, 2019). This personalized approach enables students to demonstrate their understanding and deeply engage with the course content (Malczyk, 2020). Educators would be well served by providing multiple modalities of response or interaction.

With HyFlex, students can actively engage in a manner that reflects the decentralized work environment they may encounter in their future careers. In many professional settings, employees collaborate with team members who are geographically dispersed (Morrison-Smith & Ruiz, 2020; Townsend et al., 1998). Students can develop valuable skills suitable for this decentralized work



environment (Coutts, 2019; Bosch-Sijtsema & Sivunen, 2013; Singh et al., 2021). One student may present their ideas through an audio annotated presentation, while another focuses on providing constructive peer reviews. The collaborative environment of HyFlex nurtures teamwork, communication, and adaptability, which are essential for success in today's professional landscape (Mentzer & Mohandas, 2022).

Transitioning to HyFlex mode has inherent challenges. While overarching institutional policies guide the implementation of HyFlex courses, several factors—at the course level—including class size, subject matter, and student assignments, play a crucial role in shaping the course to meet the needs of the students effectively. Class size is one of the primary considerations when adopting a HyFlex or new teaching method. For instance, the instructor might need to rely more on online platforms for synchronous or asynchronous participation in larger classes. In comparison, smaller classes may lend themselves better to in-person interaction. Understanding the dynamics of class size is essential for determining the appropriate balance between online and in-person components.

The subject matter also shapes course design within a HyFlex framework. Certain subjects may require more hands-on, experiential learning experiences better suited to in-person instruction. On the other hand, theoretical or lecture-based subjects might lend themselves more readily to online or asynchronous

learning (Martin et al., 2022; Paul & Jefferson, 2019). Additionally, the types of student assignments and assessments must be carefully considered when designing or modifying a course. Traditional assignments may need to be modified or supplemented with online components to accommodate in-person and remote students. While not always easy, providing equitable opportunities for all students to demonstrate their understanding and skills is crucial. The course structure should allow for a fair and balanced assessment system that accommodates in-person and remote learners' diverse needs and circumstances.

Adapting a course to a HyFlex delivery model often presents technical challenges that must be addressed and should be a key consideration in course planning. HyFlex and multi-modal classes require cameras and technology-enabled classrooms to facilitate interaction between the students attending class in person and those online. The hardware and software should be familiar to all involved so that they can focus on the course and avoid time-consuming technical delays.

In a HyFlex environment, instructors need to see the students both in person and attending online and, ideally, allow students to see each other. This enables a sense of connection and fosters a more collaborative learning environment. For instance, breakout rooms allow both in-class and online students to form groups and collaborate seamlessly. Consider recording classes so that asynchronous students can access the class sessions and review the content conveniently.



By providing recorded lectures, instructors ensure that students in different time zones or those with conflicting schedules can still benefit. Online forums or message boards can facilitate participation and interaction in a HyFlex course setting. These platforms allow students to contribute, share their work, and engage in discussion with their peers. While the technology employed is not always perfect, providing adequate support and training for instructors and students is crucial to ensuring a smooth transition to a HyFlex model. Institutions should offer technical assistance, resources, and training sessions to familiarize instructors and students with the technology and tools used.

Careful planning is essential for successful HyFlex classes, as it involves considering diverse student roles and ensuring a fair workload distribution. This process accommodates asynchronous students by providing alternative testing options and promoting equal assessment opportunities. Thoughtful planning establishes a structured course, clear expectations, and informed student engagement.

Ensuring Equitable Learning Experiences for All Students

Creating fair learning experiences for all students can be complex, especially when they are engaged in different learning methods and similar assignments. Instructors can adopt diverse tactics to ensure uniform experiences and prevent disadvantaging any group. Feedback collection is pivotal to guaranteeing that all students engage with the course content and expectations evenly.

To uphold equity, instructors can establish uniform assignment deadlines for all delivery modes, guaranteeing equal chances to complete tasks and

participate. Transparent communication of expectations aids students in comprehending their role in the course. This encompasses furnishing comprehensive guidelines, instructions, and illustrative examples to ensure effective participation, irrespective of their chosen learning approach.

Sometimes, it might involve tailoring course materials to suit the intended student audience. For instance, one educator mentioned crafting brief videos for asynchronous learners if an activity posed challenges. These videos reinforced concepts and were accessible to all students (Lefebvre, 2019). While the course design offers flexibility, certain aspects like deadlines, learning objectives, and expectations might remain firm to ensure an equitable learning experience. Regular check-ins and continuous communication contribute to fairness in learning. Instructors should provide avenues for students to seek clarifications, ask questions, and provide input via office hours, discussion boards, virtual meetings, and other options.

An effective approach involves creating an asynchronous discussion platform that engages students through diverse means such as video posts, annotated PowerPoint submissions, or written discussions. Thoughtful design cultivates community, encourages ongoing dialogue, and nurtures an inclusive learning atmosphere that champions equity among students.



Ensuring Participant Privacy

Ensuring confidentiality in HyFlex scenarios presents distinct ethical complexities, particularly when programs involve discussing private matters, sharing personal traumas, or expressing opinions openly (Crasto, 2023; Warburton & Mor, 2022). Unlike traditional classrooms, where confidentiality is more manageable through face-to-face interactions (McBride & Wahl, 2005), HyFlex environments demand additional safeguards for participant privacy (Armstrong, 2022). To tackle these challenges, it is imperative to follow established privacy policies and create explicit protocols for upholding confidentiality. Students need to comprehend the sensitive nature of discussions and the significance of safeguarding their own and peers' privacy. For example, asking students to use headsets for sensitive class discussions might mitigate the risk of exposing confidential information. Educators and institutions must also educate students about privacy importance and associated risks, underscoring respect, empathy, and responsible communication.

Engagement and Black Boxes

Teaching a class where students keep their cameras off often feels like talking into the void. It is easier to gauge their engagement or judge if the material resonates by seeing their faces and expressions. To address this, I took the initiative to connect with my students through email. In my message, I personally asked them to consider turning on their cameras during our online sessions. I acknowledged the potential barriers, like poor internet, shared spaces, or personal concerns, that might prevent some from doing so. Still, I highlighted the benefits of a more interactive and effective learning environment with cameras on. I also clarified that while camera use was

not mandatory, active participation in any form—via camera, audio, or chat—would greatly enhance our collective experience. I found this approach successful to a certain extent, and encouraging the camera must come with flexibility. Providing alternative engagement options, such as chatting or virtual hand-raising, fosters inclusivity and allows students to participate in ways that suit them best.

Equity emerges as a significant concern. Only some have the luxury of reliable internet or a private space for online learning. Some students juggle work or childcare responsibilities that hinder their full engagement in synchronous sessions. Understanding the hurdles students encounter empowers us to shape more adaptable learning spaces. Instead of penalizing those attending without video, we should promote alternative engagement like audio or chat. The partnership between students and educators paves a more enriched learning journey.

Steps for a Successful HyFlex Course

A successful HyFlex teaching experience hinges on strategically delegating responsibilities, setting precise policies, and clarifying terms and deadlines in advance. The dual audience of in-person and online students can be balanced through active student participation and role assignments, such as allowing students to monitor online interactions. Incorporating other teaching models can further enhance the collaborative learning environment. Clear HyFlex education policies are crucial to creating a shared understanding among all participants, each with different standards and policies. It is essential to clarify terms and deadlines in advance to ensure consistent course outcomes for all students. Guidelines regarding communication channels, response times, and participation expectations help

students to feel more connected and informed.

The Planning Process

The planning process revolves around strategizing to create an inclusive and captivating learning experience that caters to all students. This entails crafting interactive activities and assignments, seamlessly transitioning between in-person and online settings, harnessing technological tools to facilitate effective communication and collaboration across different modes, and establishing transparent guidelines and expectations for all participants. Faculty members must choose between developing a new course designed for HyFlex or modifying an existing course to align with its requirements. For the latter, this means adapting assignments, reshaping lectures, and ensuring the course content harmoniously fits into the available modalities. This alignment may necessitate employing technology that allows in-person and remote students to interact smoothly, adjust instructional resources to suit distinct delivery modes, and implement strategies that encourage active participation in both environments.

Exploring innovative teaching techniques that complement the HyFlex model becomes essential. This involves realistic discussions about supporting multi-modal course delivery, ensuring the technology infrastructure functions seamlessly. Notably, transitioning to HyFlex teaching may demand more time than conventional in-person instruction due to the intricacies of managing diverse modes of engagement.

Romero-Hall and Ripine (2021) emphasize that readiness for HyFlex teaching is pivotal for achieving success. Beyond technological considerations, there is a need to account for potential challenges, such as coordinating activities across various modes, adapting assessments, and fostering equitable participation. By preparing comprehensively, educators can navigate these complexities and create a rewarding learning experience that serves all students effectively.

Delegation of Responsibilities

Creating a successful HyFlex teaching experience requires thoughtful planning and effective strategies. A key consideration involves allocating responsibilities to manage the dual audience of in-person and online students. Balancing engagement with both groups can be intricate, often resulting in an inadvertent bias towards in-person attendees while unintentionally neglecting online learners. To address this, fostering active student involvement becomes pivotal. Encouraging all students, regardless of location, to participate actively is vital. Even if students participate via chat without video, they can still assess their understanding and monitor their progress during the lecture.

From my experience, delegating specific responsibilities to students within the class yields tangible benefits. For example, in certain courses I have taught, I assign a different student each week to oversee the interactions of the online group and promptly relay any questions or concerns to me. This approach grants me the flexibility to move around the physical classroom, deliver the lecture, and ensure that important points are addressed promptly, even when my focus is not directly on the online screen.

Another effective method I have employed involves collaborative content curation. I task students with sourcing and sharing relevant resources related to the course topics, both in-person and online. This encourages active engagement and diversifies the learning experience as students contribute various perspectives and sources. It creates a dynamic learning environment where students feel empowered in their contributions and enhances the collective understanding of the subject matter.

Forming student-led discussion groups has also proven advantageous. These groups facilitate discussions during class, either in person or virtually. This strategy fosters interaction, encourages critical thinking, and ensures that both cohorts of students actively contribute to the learning process.

Setting Clear Policies and Expectations

Creating a successful HyFlex teaching experience in academia necessitates the establishment of well-defined policies and expectations for students and faculty. While the concept of HyFlex might be novel for many students, ensuring their comprehensive understanding of its application within the course is paramount. It is imperative to communicate that while the course offers hybrid and flexible learning options, it upholds specific deadlines and maintains rigorous standards. Each course possesses distinct requirements and anticipations. By elucidating the workings of HyFlex in the context of the specific course, students can more effectively grasp the course's structure and align their expectations accordingly. This becomes particularly vital when students engage in multiple HyFlex courses governed by diverse standards and policies.

Creating a comprehensive policy framework involves several key steps. First, faculty should clearly articulate the overarching objectives of the course and how the HyFlex model supports these goals. This helps students understand the purpose behind the instructional approach and how it benefits their learning experience. Next, faculty should outline the specific modes of participation available (in-person, virtual, pre-recorded) and explain the requirements and expectations for each mode. This ensures that students know the available options and can make informed decisions about their participation.

Transparent communication of deadlines, assessment methods, and grading criteria clarity ensures that students know when assignments are due, how they will be evaluated, and what standards they need to meet. Additionally, outlining the technology requirements and support available helps students prepare for the technical aspects of the HyFlex model. Regularly revisiting and reinforcing these policies throughout the course, through a dedicated course syllabus section or periodic reminders, helps to keep students aligned with the expectations. Moreover, providing channels for students to seek clarification—or voice concerns about the policies—ensures they have a platform to address any uncertainties.



Engaging Students in the Course

In a HyFlex classroom, student engagement can vary quite a bit. The difference often lies in how students interact with the material and their peers. To make the course effective for everyone, offering multiple ways to participate is useful. Students might engage through online chat groups, discussion boards, or by creating videos that share their perspectives. This flexibility lets them work on their own schedules while staying connected to the class.

From my own teaching experience, varied engagement methods make a difference. For example, students could analyze texts at their leisure in a literature class, diving deep into their interpretations. In a computer programming class, students tackled coding problems independently and explained their solutions through videos. These examples highlight the positive impact that multiple avenues for participation can have on the learning experience.

Communication is another crucial element for maintaining engagement. I keep students in the loop with regular announcements and reminders. Providing quick feedback on their work also helps keep them invested in the course. In one project-based class, I collaborated with students to set the course rules, grading methods, and deadlines. Giving them a voice in these decisions increased their commitment and investment in their learning.

It is important to note that HyFlex is not a one-size-fits-all solution. In courses with complex subjects, like advanced math, some students benefit more from the immediate feedback available in a traditional classroom. Recognizing these varying needs is key to tailoring the learning experience for everyone.

The Importance of Ongoing Evaluation and the Improvement of HyFlex Teaching

Refining a HyFlex course is not a one-time task; it is an ongoing process that is deeply informed by regular assessments. By closely examining what is working and what is not, instructors can tailor their courses to serve both online and in-person learners better. This is not just beneficial for the current course; it is also an investment in the effectiveness of future HyFlex offerings.

One important aspect of this is paying attention to how different students interact with the course, depending on whether they are online or in the classroom. It is crucial to ask: Are online students as engaged as their in-person counterparts? Do both groups have equitable access to learning resources? Answers to these questions can guide educators in crafting strategies that level the playing field for all students. This might involve using various communication tools or adopting technologies that enhance collaborative work across different settings.

Feedback from students is another goldmine of information. It can provide direct insights into the effectiveness of various course elements, whether it is the discussion formats, the flexibility to move between online and in-person learning, or the kinds of assignments given. This feedback serves as actionable data, enabling instructors to make immediate improvements. Such improvements could include tweaking the course layout or offering additional resources to bolster learning.



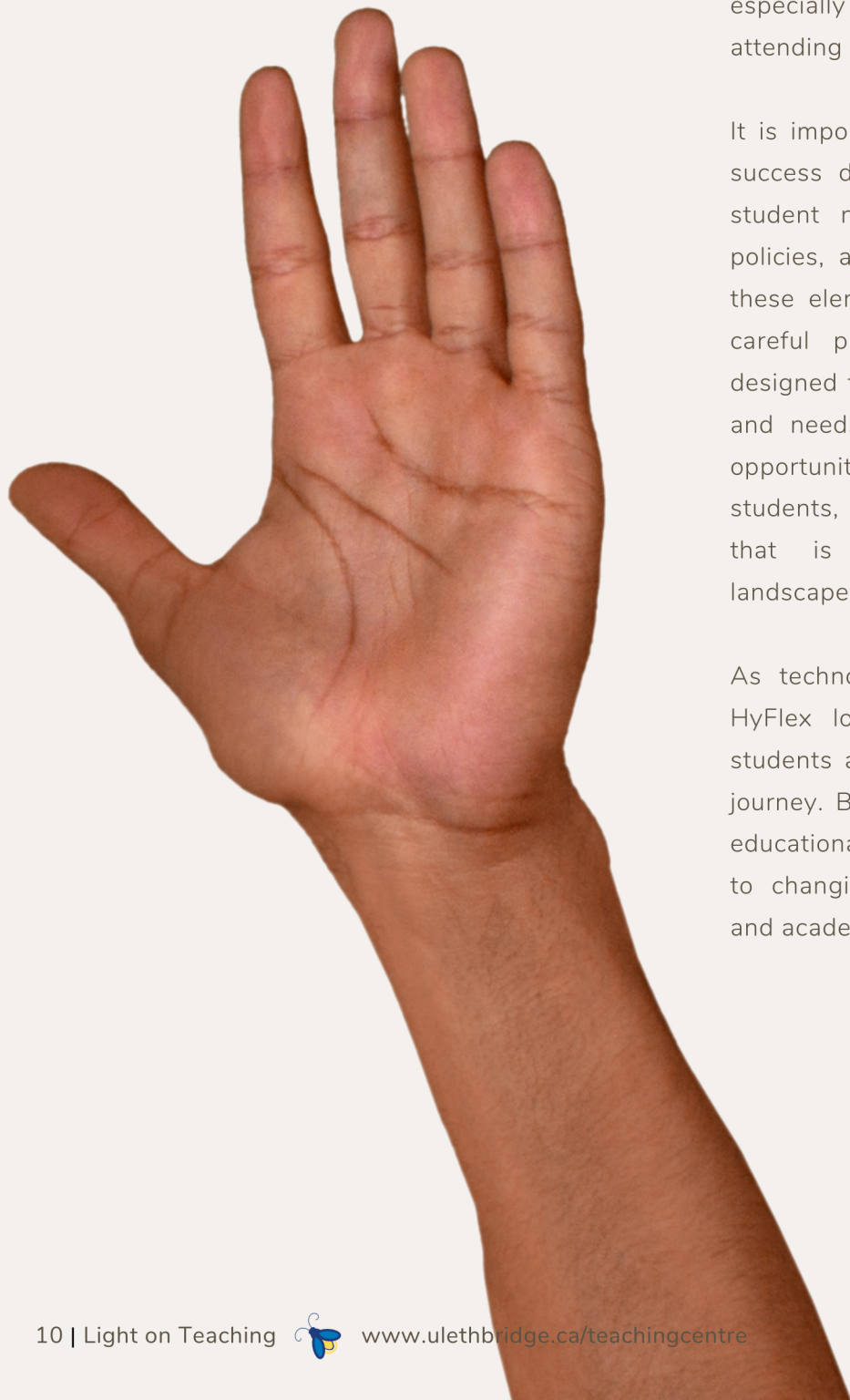
Ongoing assessments of student engagement—in discussions, group activities, and assignments—can reveal much about the course's efficacy. Are students participating more vigorously in online discussions than in in-person ones? Is the course structure conducive to both types of engagement? These patterns help identify where the course may need adjustments, whether it is in the structure or the resources provided.

Conclusion

While HyFlex may not be a perfect fit for every subject or classroom, its arrival has opened up new ways of thinking about how courses can be delivered. Students gain a valuable, flexible learning environment in settings where it aligns well with the subject matter and the group dynamics. One of its standout features is the potential to level the educational playing field, especially for students who might have difficulty attending in-person classes.

It is important to recognize that the HyFlex model's success depends on various factors. These include student needs, instructor preferences, institutional policies, and the course content itself. Balancing all these elements requires adaptability. However, with careful planning and execution, courses can be designed to meet a broad spectrum of learning styles and needs. By doing so, educators have a unique opportunity to connect more deeply with their students, enriching the learning experience in a way that is well-suited to changing educational landscapes.

As technology continues to evolve, the future for HyFlex looks bright. It offers both teachers and students a dynamic, interactive, and flexible learning journey. By adopting this forward-thinking approach, educational institutions are better positioned to adapt to changing circumstances, championing inclusivity and academic excellence.



References

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). Association for the Advancement of Computing in Education.

Anthony, B., Kamaludin, A., Romli, A., Raffei, F. M. Eh Phon, D. N. A. L., Abdullah, A., & Ming, G. L. (2022). Blended learning adoption and implementation in higher education: A theoretical and systematic review. *Technology, Knowledge and Learning*, 27(2), 531-578.

Armstrong, E. D. (2022). *Gaps in professional development and knowledge of teaching hyflex courses in higher education*. [Doctoral thesis, University of the Southwest]. University of the Southwest ProQuest Dissertations Publishing.

Barbour, M. K. LaBonte, R., Kelly, K., Hodges, C., Moore, S., Lockee, B., Trust, T., Bond, A., & Hill, P. (2020). Understanding pandemic pedagogy: Differences between emergency remote, remote, and online teaching. *State of the Nation: K-12 e-Learning in Canada*.

Beatty, B. J. (2010). *Hybrid courses with flexible participation-the hyflex design*. [Unpublished manuscript]. San Francisco State University. Retrieved from http://itec.sfsu.edu/hyflex/hyflex_course_design_theory_2_2

Beatty, B. J. (2019). *Hybrid-flexible course design*. EdTech Books.

Bosch-Sijtsema, P. M. & Sivunen, A. (2013). Professional virtual worlds supporting computer-mediated communication, collaboration, and learning in geographically distributed contexts. *IEEE Transactions on Professional Communication*, 56(6), 160–175.

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

Coutts, L. (2019). Empowering students to take ownership of their learning: Lessons from one piano teacher's experiences with transformative pedagogy. *International Journal of Music Education*, 37(3), 493–507.

References

Crasto, T. (2023). *Shared intentionality in hyflex education: Understanding engagement, interaction and inclusion through lived experiences of diverse instructors and students*. [Master's thesis, Ontario College of Art & Design University]. OCAD University Open Research Repository.

Formentin, M. & Auger, G. A. (2021). Pivot now! Lessons learned from moving public relations campaigns classes online during the pandemic in spring 2020. *Journal of Public Relations Education*, 7(3), 7–44.

Gascoigne, C. (2022). Reemerging spaces: Examining classroom climates in the hyflex realm. *Online Journal of Distance Learning Administration*, 25(1).

Gulley, N. A. (2022). *Self-directed learning readiness of career college graduates: A correlational study* [Doctoral thesis, the University of Phoenix]. University of Phoenix ProQuest Dissertations Publishing.

Halverson, L. R. & Graham, C. R. (2019). Learner engagement in blended learning environments: A conceptual framework. *Online Learning*, 23(2), 145–178.

Hiltz, S. R., Turoff, M. & Harasim, L. (2007). Development and philosophy of the field of asynchronous learning networks. In R. Andrews & C. Haythornthwaite (Eds.), *The sage handbook of e-learning research* (pp. 55–72). SAGE Publications, Ltd.

Hodges, C. B., Moore, S., Lockee, B. B., Trust, T. & Bond, M. A. (2020). The difference between emergency remote teaching and online learning. *Educause Review*. <https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning>

Kohnke, L. & Moorhouse, B. L. (2021). Adopting HyFlex in higher education in response to COVID-19: Students' perspectives. *Open Learning: The Journal of Open, Distance and e-Learning*, 36(3), 231–244.

Lederer, A. M., Hoban, M. T., Lipson, S. K., Zhou, S. & Eisenberg, D. (2021). More than inconvenienced: The unique needs of US college students during the COVID-19 pandemic. *Health Education & Behavior*, 48(1), 14–19.

References

- Lefebvre, M. (2019). Hyflex in northern Ontario: Cambrian College. In B. J. Beatty (Ed.), *Hybrid-Flexible Course Design*. EdTech Books.
- 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), 1-9.
- Leslie, H. J. (2021). Facilitation fundamentals: Redesigning an online course using adult learning principles and trifecta of student engagement framework. *Journal of Research in Innovative Teaching & Learning*, 14(2), 271–287.
- Lischer, S., Safi, N. & Dickson, C. (2021). Remote learning and students' mental health during the Covid-19 pandemic: A mixed-method enquiry. *Prospects*, 1–11.
- Malczyk, B. R. (2020). Introducing social work to hyflex blended learning: A student-centered approach. In P. A. Kurzman, M. Littlefield (Eds.), *Online and distance social work education* (pp. 161–175). Routledge.
- Martin, F., Wu, T., Wan, L. & Xie, K. (2022). A meta-analysis on the community of inquiry presences and learning outcomes in online and blended learning environments. *Online Learning*, 26(1), 325–359.
- McBride, M. C. & Wahl, S. T. (2005). 'To say or not to say:' Teachers' management of privacy boundaries in the classroom. *Texas Speech Communication Journal*, 30(1), 8-22.
- Mentzer, N. & Mohandas, L. (2022). Student experiences in an interactive synchronous hyflex design thinking course during COVID-19. *Interactive Learning Environments*, 1–16.
- Miller, J. B. & Baham, M. (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. In M. A. Sorto, A. White, & L. Guyot (Eds.), *Looking back, looking forward. Proceedings of the tenth international conference on teaching statistics* (pp. 1-6). International Statistical Institute.
- Mohammed, S. H. & Kinyó, L. (2020). The role of constructivism in the enhancement of social studies education. *Journal of Critical Reviews*, 7(7), 249–256.

References

- Morrison-Smith, S. & Ruiz, J. (2020). Challenges and barriers in virtual teams: A literature review. *SN Applied Sciences*, 2(6), 1–33.
- Nõuakas, K., Petjärv, B., Labanova, O., Retšnoi, V. & Uukkivi, A. (2023). Challenges of hybrid flexible (hyflex) learning on the example of a university of applied sciences. In: Auer, M.E., Pachatz, W., Rüttemann, T. (Eds.), *Learning in the age of digital and green transition: ICL2022*. (Vol. 1, pp. 257–268). Lecture Notes in Networks and Systems. Springer, Cham.
- Paul, J. & Jefferson, F. A (2019). A comparative analysis of student performance in an online vs. face-to-face environmental science course from 2009 to 2016. *Frontiers in Computer Science*, 1(7).
- Rashid, S. & Yadav, S. S. (2020). Impact of Covid-19 pandemic on higher education and research. *Indian Journal of Human Development*, 14(2), 340–343.
- Romero-Hall, E. & Ripine, C. (2021). Hybrid Flexible Instruction: Exploring Faculty Preparedness. *Online Learning*, 25(3), 289–312.
- Singh, J., Steele, K. & Singh, L. (2021). Combining the best of online and face-to-face learning: Hybrid and blended learning approach for COVID-19, post vaccine, & post-pandemic world. *Journal of Educational Technology Systems*, 50(2), 140–171.
- Townsend, A. M., DeMarie, S. M. & Hendrickson, A. R. (1998). Virtual teams: Technology and the workplace of the future. *Academy of Management Perspectives*, 12(3), 17–29.
- Vivolo, J. (2019). Overview of online learning and an (un)official history. In (J. Vivolo, Ed.), *Managing online learning: The life-cycle of successful programs* (pp. 7–17). Routledge.
- Warburton, S. & Mor, Y. (2022). Design solutions for hybridised spaces in a learning and teaching context: Seven patterns that address social practice, privacy, and participation. In *proceedings of the 27th European conference on pattern languages of programs: EuroPLop '22*. (pp. 1-10). Association for Computing Machinery.
- Whalley, B., France, D., Park, J., Mauchline, A. & Welsh, K. (2021). Towards flexible personalized learning and the future educational system in the fourth industrial revolution in the wake of Covid-19. *Higher Education Pedagogies*, 6(1), 79–99.