INTERNATIONAL JOURNAL FOR INNOVATION EDUCATION AND RESEARCH
ISSN: 2411-2933

Journal URL: https://scholarsjournal.net/index.php/ijier

DOI: https://doi.org/10.31686/ijier.vol14.iss2.4297

Teaching and Learning in Hyflex, Online, Hybrid, and In-Class Modalities: Opportunities, Challenges, and Best Practices

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Abstract

In today's rapidly changing digital landscape, Hyflex learning presents an innovative approach to crafting engaging and meaningful educational experiences that cater to both traditional and non-traditional learners' technological needs. This research explores various aspects, including definitions, justifications, teaching and learning strategies across formats such as Hyflex courses, online classes, hybrid models, and conventional in-person environments. Educational institutions are evolving by integrating diverse teaching methods to better serve their students. The study will delve into the advantages and disadvantages, challenges, and recommendations for effectively implementing Hyflex learning in higher education. It suggests that a blended learning environment encourages the growth of independent learners with strong critical thinking skills, which are valuable in today's job market. Moreover, Hyflex learning provides flexibility and addresses gaps found in traditional classrooms. Nevertheless, not every higher education course is suitable for the Hyflex model. Thus, schools should offer students the option to choose between Hyflex courses and traditional classroom settings. This option will help accommodate those who may struggle in a hybrid learning environment, particularly in demanding courses that require full in-person attendance.

Keywords: Hyflex learning; Hybrid learning, Implementation of hyflex learning in higher education, Blended learning, in-class learning; Hyflex Touch Panel

Why Hyflex Learning

Hyflex Learning is certainly not a panacea for the various challenges facing education today. However, it has emerged as a successful educational approach over the past twenty years, as many researchers and educators contend, because it facilitates high-quality, engaging learning experiences. Studies suggest that it positively impacts students' academic performance more effectively than traditional face-to-face learning settings. Educational institutions are continually adapting to address the evolving needs of students and technological advancements, striving to enhance both teaching quality and student engagement through various learning methods. This review examines research on the development and implementation of teaching formats like Hyflex Learning, which combines online classes with in-person instruction. It also explores hybrid learning strategies and conventional in-class teaching to highlight their benefits and challenges. By understanding the

evolution of these formats, we can gain valuable insights into their effects on student engagement, flexibility, and overall learning outcomes.

Hyflex Learning, or Hybrid Flexible learning, allows students the flexibility to choose between attending classes in person or online based on their preferences and needs. This is particularly advantageous for individuals balancing work and family commitments alongside their studies. Beatty (2019) was a trailblazer in researching Hyflex learning, which focuses on student engagement by offering options to attend in person or participate online, either synchronously or asynchronously. This approach has shown to be quite effective in education, as many students require flexible schedules to manage diverse obligations. Research indicates that if implemented correctly, Hyflex learning could significantly improve student satisfaction and engagement (Beatty 2019). However, it is important to note that studies also point out challenges related to resource allocation to ensure equitable access across different modes of participation (Beatty 2019).

The evolution of Hyflex has been shaped by an increasing emphasis on empowering students to align their education with their individual preferences and needs. Recent studies suggest that Hyflex models promote autonomy by allowing students to tailor their learning experiences according to their schedules and preferred engagement styles (Lederman 2020). However, despite the praise for Hyflex's flexibility, it does place additional demands on instructors, who must manage various interaction methods that can prove challenging, thus requiring further training and resources (Beatty, 2019; Miller et al. 2021). These findings indicate that while Hyflex holds promise to boost student engagement, its successful implementation requires institutional support.

Literature Review

In Hyflex Learning environments, students actively engage and collaborate with their peers (Eryilmaz, 2015). Additionally, integrating Hyflex Learning with 21st Century skills can lead to meaningful learning, where students consciously connect new information with their existing knowledge through relevant prior experiences (Zurita, Hasbun, Baloian & Jerez, 2014). The incorporation of online education within Hyflex Learning offers significant benefits, such as encouraging online research, linking learners with the global community, providing access to vast and authentic knowledge resources for both professional and academic purposes, and fostering self-discipline (Paudal, 2021).

When teachers design blended learning activities aimed at enhancing the teaching and learning process in Hyflex environments, students, whether in school or out, are likely to excel in their learning endeavors thanks to the rich resources available to both traditional and non-traditional learners at any time and from any place (Machumu, Ghasia & Musabila, 2018). Moreover, the Hyflex learning model presents several advantages for students, including a shift from passive to active learning by immersing them in situations that require reading, speaking, listening, and critical thinking. It also allows for both collaborative and independent experiences, adding a personal element to teaching that fosters greater interest, accountability, and genuine assessment.

This model enhances individualization, personalization, and relevance by enabling instructors to tailor learning content to the distinct needs of various learner segments (Kaur, 2013).

Research indicates that students highly value blended learning as a teaching approach since it facilitates easier access to educational materials, promotes quicker and more effective communication with instructors, improves focus during classes, and helps students better prepare for exams (Szadziewska & Kujawski, 2017). Blended learning is not only effective in enhancing learning outcomes, but it also offers flexibility and increases student satisfaction. It fosters a sense of community and empowers students to utilize resources more efficiently (Poon, 2013). Furthermore, blended learning encourages students to actively engage in their own learning and apply it in practical settings (Smyth, Houghton, Cooney, & Casey, 2011). Compared to traditional eLearning, blended learning presents numerous advantages for learners, including fostering a sense of belonging. It serves as an effective model for distance learning, enhancing students' educational experiences and interactions with both peers and instructors (Tayebinik & Puteh, 2012).

Additionally, shifting from a conventional learning setting to a Hyflex model proves beneficial for students by allowing them to learn at their own pace. It also provides teachers the opportunity to give focused attention to students who need it most (Alijani, Kwun & Yu, 2014). In conclusion, the Hyflex learning approach is highly effective in cultivating a more reflective student body and extends learning opportunities beyond traditional classroom settings. This study aims to evaluate Hyflex, Online, Hybrid models alongside conventional in-class learning, with the objective of deepening our understanding of how each approach can be customized to better meet the diverse needs of today's student populations.

Design of hyflex courses

Hyflex course designers often encounter three main challenges: (a) is my institution well-equipped with the necessary technology for hyflex teaching? (b) which learning activities work best for both online and face-to-face formats? (c) how do the in-person and online elements interact with one another? Additionally, they must consider how to effectively allocate course time between online and in-person sessions (McGee & Reis, 2012). Aside from these challenges, the other instructional decisions in designing blended courses resemble those needed for creating effective fully face-to-face or fully online courses. Research indicates that students prioritize the nature of learning activities over their format (Banerjee, 2011; Manwaring, Larsen, Graham, Henrie, & Halverson, 2017). An increasing amount of literature suggests that students prefer activities that provide options and foster social interaction. They also tend to appreciate online lectures, problem-solving tasks, the integration of various tools, and engaging in online discussions (Bueno-Alastuey & Lopez-Perez, 2014; Hung & Chou, 2015; Wai & Seng, 2015).

Students often feel less connected when they experience issues downloading lectures, deal with complicated tools that hinder their online involvement, or when the instructor's engagement is minimal or absent (Wai & Seng, 2015). After aligning a learning activity with the course objectives, the designer selects the most suitable

delivery mode to enhance student learning (Garrison & Vaughan, 2008; McGee & Reis, 2012; Stein & Graham, 2014). When these delivery methods are thoughtfully combined, students tend to find value in a hyflex course and appreciate the benefits of both in-person and online experiences (Gerbic, 2010). For instance, Gerbic observed that online asynchronous discussions provided more time for deeper, higher-quality conversations and allowed students to steer the discussion's direction. Additionally, students valued the chance to interact with their classmates in a physical classroom setting. Conversely, when the relationship between these modes is weak, students noted that online discussions felt disconnected and irrelevant to their learning. Research by Herbert, Velan, Pryor, and Kumar (2017) revealed that students were very satisfied with their hyflex learning experience when interactive in-person sessions were combined with synchronous video sessions. Participants also indicated that they found the online activities to be meaningful and engaging. There has been limited research on how to best allocate time between each mode and their respective benefits. A few studies (Asarta & Schmidt, 2015; Farley, Jain, & Thomson, 2011) found that when given the option, students chose to attend about half of the in-person classes rather than attending lectures or accessing recorded lectures online.

Advantages of Hyflex Learning

Hyflex learning provides a flexible solution for students, allowing them to attend classes either in person or online, depending on their schedules and preferences. This option is particularly attractive to traditional students and working professionals who have busy lives and various commitments. It also enhances enrollment opportunities by removing barriers associated with geographical limitations and rigid class schedules. Additionally, when students are given the option to choose how they participate in their education, it fosters independence and self-directed learning, which can contribute to long-term success.

Difficulties of Hyflex Learning

Learning Hyflex presents a flexible approach but establishing it can be quite a challenge due to the necessary technological investments for effective delivery across different platforms. Instructors must manage both in-person and online students simultaneously, which can place a significant strain on faculty training. Furthermore, institutions must ensure that they have the right infrastructure, including microphones, cameras, and dependable internet, to facilitate communication and learning across all formats. Depending on technology also introduces the potential for technical issues that could disrupt the learning experience.

Online Learning - Advantages of Distant Education_

One of the key advantages of education is its convenience. Students can join classes and complete assignments from anywhere in the world, which promotes inclusivity and opens doors for individuals who might not have access to traditional educational institutions. Furthermore, the self-paced format of courses allows learners to progress through the material at their own speed, creating a tailored educational experience. Additionally, eliminating the need for commuting helps students save both time and money, enhancing their overall educational journey.

Online Learning – Difficulties of Distant Education_

Online learning certainly has its hurdles. The lack of in-person interaction can foster feelings of isolation, which may dampen student engagement and enthusiasm. While tools like video calls and discussion boards do promote communication, they often fall short of replicating the dynamic exchanges and immediate feedback found in a traditional classroom setting. This gap in personal connections can lead to disengagement, particularly for students who thrive on interactive learning and prompt responses from their teachers.

Hybrid Learning- Blending Traditional and Online Learning

Blended learning, also known as hybrid learning, integrates classroom instruction with online education to leverage the strengths of both environments. This approach was designed to combine the adaptability of online learning with the benefits of in-person classes. Graham (2006) suggests that blended learning can revolutionize education by enhancing student engagement and improving learning outcomes through the integration of these two methods. In hybrid courses, students typically attend some sessions on campus while completing the remainder of the coursework online, offering a flexible schedule alongside opportunities for face-to-face interaction. Research from Garrison and Kanuka (2004) indicates that merging traditional and online learning techniques can lead to increased student engagement and academic success. Their research indicates that students in hybrid classes appreciate the autonomy to manage their study time between in-person interactions and online resources. This flexibility is particularly valued by those who appreciate the structure of traditional classes but desire the option to engage asynchronously. The successful execution of hybrid learning relies on thoughtfully designed courses that integrate online and face-to-face components, aiming to craft a learning experience that is both varied and comprehensive (Means et al., 2014).

Traditional classroom education remains the dominant method, characterized by direct engagement between students and teachers within a physical school setting. This approach has become standard in education, fostering feedback and a structured learning environment. In-person learning is recognized for its role in building relationships between educators and students while promoting active involvement through direct interactions and physical presence.

However, as educational needs evolve, there are concerns that traditional classrooms may fall short in offering the flexibility that today's students require, particularly those with other commitments (Allen & Seaman, 2016). To address these challenges, educational institutions are exploring ways to incorporate more adaptability into their classrooms. Research into classroom teaching methods emphasizes interactive learning strategies, such as teamwork discussions and project-based activities, which can enhance participation and academic success (Dziuban et al., 2004). This approach aligns with constructivist learning theories, suggesting that active engagement and collaboration with peers are vital for effective learning during face-to-face interactions.

Difficulties of Blended Learning

However, “blended learning" can present significant challenges, particularly when it comes to managing

schedules and effectively designing the curriculum. The necessity of aligning in-person and online components can create obstacles, especially when students need to participate in specific sessions but are hindered by job commitments or other responsibilities. Additionally, this approach demands a high level of organization from both students and educators to ensure that participants remain engaged and that the learning process flows smoothly.

Traditional Classroom Learning - Advantages of Learning, in a Classroom Setting

A key benefit of classroom learning is the chance for immediate feedback and direct interaction between students and teachers. This real-time communication enhances understanding and allows for quick clarification of any doubts. Additionally, the structured environment of a classroom, with its schedules and assignments, helps students stay organized and fosters a sense of accountability. The social dynamics of a traditional classroom also contribute to a more engaging and dynamic learning experience.

Table 1: Resources Needed for Each Modality

Modality	Technology	Infrastructure	Faculty Training
Hyflex	Cameras, microphones, video conferencing software	Classroom setup, internet access	Training in both face-to-face and virtual teaching techniques
Online	Learning management system (LMS), video conferencing tools	Computer labs (optional)	Expertise in fully online course design
Hybrid	LMS, video conferencing, online content delivery tools	Classroom space, internet access	Training in both online and in-class teaching
In-Class	Projector, whiteboard, textbooks	Classroom space, seating, audio/visual equipment	Expertise in traditional in-person pedagogy

Methodology

This research study investigates the effectiveness of various teaching methods, including Hyflex learning and online learning, in comparison to hybrid and in-class instruction. By closely analyzing these different approaches, the research aims to uncover their impacts on teaching quality and student engagement, ultimately leading to improved learning outcomes. The study will delve into the benefits, drawbacks, and unique advantages each method contributes to educational settings. Through this comprehensive comparison, it seeks to illuminate the critical elements that foster successful learning experiences across various environments.

Comparative Approach

In this study, comparative analysis plays a vital role as it allows for an examination of different learning methods by juxtaposing teaching strategies and evaluating student engagement and academic success. Highlighting both the differences and similarities between these approaches will illuminate ways to achieve educational goals and address the unique needs of each learner. This methodology is effective in identifying the strengths of each approach and provides a comprehensive overview that includes both objective data and subjective insights. Furthermore, it establishes a foundation for understanding various strategies in course design and instructional delivery within educational environments.

Comparative analysis is essential for this study, as it allows for an in-depth exploration of different learning methods through comparison. Student evaluations of instructors are highly significant in higher education; they not only provide valuable feedback to the instructors but also equip administration with insights regarding an instructor's performance and effectiveness in presenting course material (Orchard, L. X et al., 2025). Previous research indicates that student evaluations tend to be lower for online courses compared to traditional in-person classes (Bhave & Murthi, 2024; Bono et al., 2025; Marzano & Allen, 2016; Rovai et al., 2006; Young & Duncan, 2014). Given that HyFlex courses merge in-person and online instruction, the author was curious about how this format impacts instructor and course evaluations. While earlier studies have detailed what students appreciate and dislike about HyFlex courses (Buckley et al., 2024; Eduljee et al., 2023; Kohnke & Moorhouse, 2021), the author has not found prior research specifically addressing the direct effects of HyFlex delivery on student evaluations of instructors or courses. This study aims to begin filling that research gap.

Data Collections:

The authors gathered data from teaching sessions across four different courses between Fall 2024 and Spring 2025. These courses included various formats such as HyFlex, Hybrid, online, and in-person classes. For the data collection in this study, student evaluations of instructors will be utilized, as they play a crucial role in higher education. These evaluations not only provide feedback to instructors but also furnish administration with insights regarding an instructor’s performance and effectiveness in delivering course content (Orchard, L. X et al., 2025). This initiative will seek to assess student satisfaction and the perceived impact of various learning modes. Evaluations will focus on students who have engaged with at least two of the four learning modes to capture a range of viewpoints. Additionally, academic data, including completion rates and grade averages, will be collected from records to provide a quantitative measure of success for each learning mode.

Table 2: Comparison of Instructor Evaluations between In-class and Online (Accounting Concepts) Sections

	In class Spring 25	Online Spring 25	Increase (Decrease) from In-class to online
Number of students assigned grades (completed class) other than I or W)	17	32	(15)
Number of students completed course evaluation	12	21	(9)
Number of course evaluation question	14	14	0
Number of data points	168	284	
Average course evaluation score	4.8	4.3	0.5
Percent of course evaluation score	96%	86%	10%

Table 2 presents the average course evaluations provided by students in Instructor Evaluations between In-class and Online (Accounting Concepts) Sections. The data is divided into sections where In-class Face-to-Face attendance is required and completely online class. The evaluations for In-class section showed higher ratings for in-class lectures compared to the online section. To analyze this difference in means between the two sections during Spring 2025, an unpaired t-test was performed. The author find that In-class section received notably higher average evaluations in the face-to-face section compared to the evaluations for the same course in the online section of the same course offered during the same semester.

The researcher did not observe any statistically significant changes in instructor evaluations when the format of the two accounting classes shifted from in-class to online modality. Figure 1 illustrates this comparison of Instructor Evaluations between In-class and Online for Accounting Concepts class.

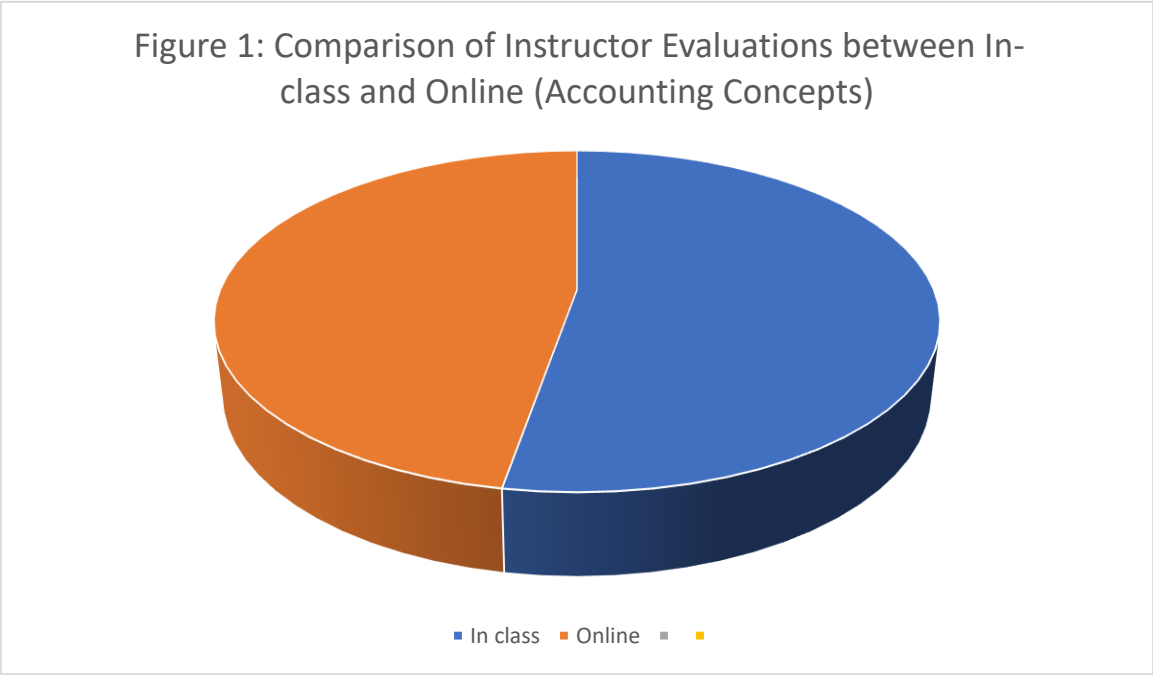


Table 3: Comparison of Instructor Evaluations between In-class and Hyflex (Managerial Accounting) Sections

	Hyflex Spring 25	In-class Spring 25	Increase (Decrease) from Hyflex to online
Number of students assigned grades (other than I or W)	26	12	14
Number of students completed course evaluation	20	10	10
Number of course evaluation question	14	14	0
Number of data points	280	140	140
Average course evaluation score	4.33	4.72	0.39
Percent of course evaluation score	87%	94%	.07

Table 3 presents the average course evaluations provided by students in Instructor Evaluations between Hyflex class and In-class at Managerial Accounting Sections. The data is divided into sections where In-class Face-to-Face attendance is required and Hyflex section. The evaluations for In-class section showed higher ratings for in-class lectures compared to the hyflex section. To analyze this difference in means between the two sections during Spring 2025, an unpaired t-test was performed. The author finds that In-class section received notably higher average evaluations in the face-to-face section compared to the evaluations for the same course in the hyflex section of the same course offered during the same semester.

The researcher did not observe any statistically significant changes in instructor evaluations when the format of the two accounting classes shifted from in-class to hyflex modality. Figure 2 illustrates this comparison of Instructor Evaluations between In-class and hyflex for Accounting Concepts class.

Figure 2: Comparison of Instructor Evaluations between In-class and Hyflex (Managerial Accounting)

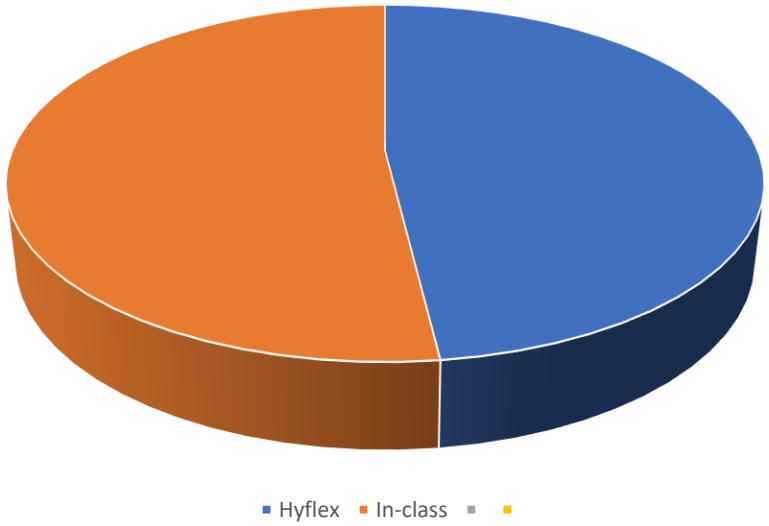


Table 4: Comparison of Instructor Evaluations Hyflex and Hybrid (Managerial Accounting) Sections

	Hyflex Fall 24	Hybrid Fall 24	Increase (Decrease) from Hyflex to Hybrid
Number of students assigned grades (other than I or W)	39	16	23
Number of students completed course evaluation	29	12	17
Number of course evaluation question	14	14	0
Number of data points	406	168	238
Average course evaluation score	4.53	4.33	0.20
Percent of course evaluation score	91%	87%	4%

Table 4 presents the average course evaluations provided by students in Instructor Evaluations between Hyflex class and Hybrid at Managerial Accounting Sections. The data is divided into sections where hybrid attendance is required 51% of classes during the term while Hyflex have the option of attending class or being live online during class section. The evaluations for hyflex section showed higher ratings for hyflex lectures compared to the hybrid section. To analyze this difference in means between the two sections during Spring 2025, an unpaired t-test was performed. The author finds that hyflex section received notably higher average evaluations compared to the evaluations for the same course in the hybrid section of the same course offered during the same semester.

The researcher did not observe any statistically significant changes in instructor evaluations when the format of the two accounting classes shifted from hyflex to hybrid modality. Figure 3 illustrates this comparison of Instructor Evaluations between hyflex and hybrid for Accounting Concepts class.

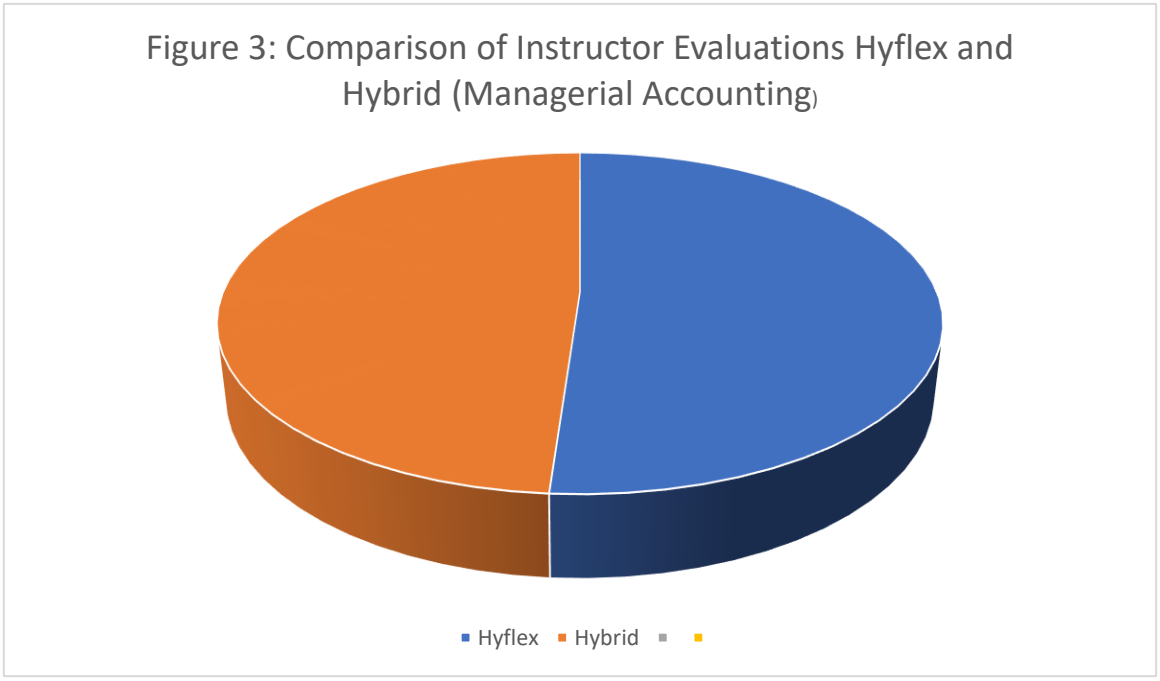
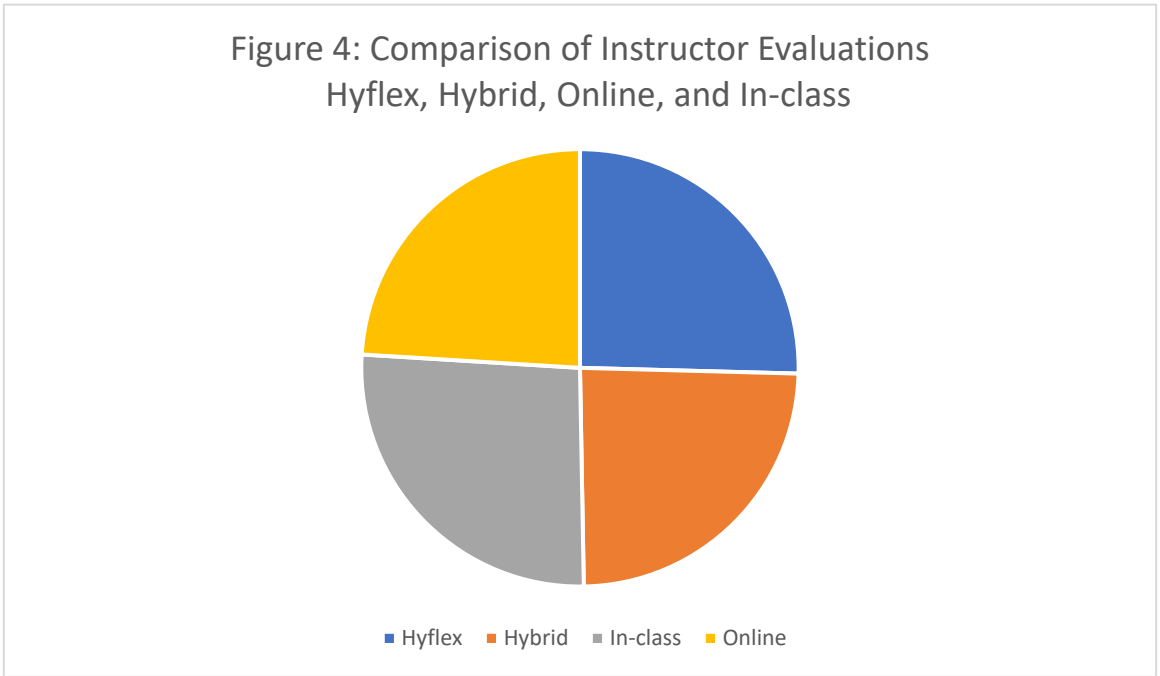


Figure 4 presents the average course evaluations provided by students in different modalities of teaching Hyflex, Hybrid, Online, and In-class format. Even that the evaluations for Instructor have some differences, with highest evaluation was for Face-to Face classes, followed by hyflex, then hybrid, followed by online, statistical t test showed no significant differences among those four modalities. Figure 4 shows close evaluation among the four modalities with no statistically significant differences.



Hands on Teaching a Hyflex Class

When a business instructor is tasked with delivering a Hyflex class, they likely bring a wealth of experience from teaching in traditional face-to-face settings, as well as online formats—whether synchronous, asynchronous, or a blend of both. While this background will greatly aid in the preparation, it's essential to recognize that additional steps are necessary.

To conduct live Hyflex sessions effectively, the classroom must be equipped with the right technology. In my experience of teaching Hyflex classes, the required tools included dual ceiling-mounted webcams that could be controlled from the instructor's podium, several ceiling-mounted microphones, a dedicated Hyflex touch panel in addition to standard control panels commonly found in classrooms as shown in appendix A, and at least two monitors/screens. These monitors are crucial, allowing both in-person attendees and the instructor to see which remote students are actively participating by raising their hands or speaking in real time.

For a Hyflex class, the instructor must engage with three distinct groups of students concurrently: those physically present in the classroom, those watching live online, and those who will view a recording of the session later (asynchronously).

Conclusion

The study demonstrates a beneficial impact when the hyflex learning model is implemented in accounting education. It specifically explores how the hyflex learning model affects three pivotal components of an educational framework: student learning outcomes, student participation and engagement, and instructor perspectives, all within the context of accounting education. The hyflex learning environment adopts a student-centric approach, empowering learners to select their preferred mode of education. More precisely, students can choose between in-person, online synchronous, or online asynchronous courses, with instructors expected to adapt to these selections. This newfound freedom for students has resulted in enhanced learning outcomes for accounting students, as they take greater ownership of their educational journey. Furthermore, the flexible formats have increased both students' willingness and ability to participate and engage, which are crucial for success in accounting. This flexibility stems from the variety of options available for how students can learn, allowing them to have full control over the timing and location of their courses to suit their individual circumstances or preferences. There is, however, a barrier to address when it comes to incorporating hyflex learning: the perspectives of instructors. Generally, instructors view the adoption of the hyflex learning model favorably, provided they receive adequate support to implement the necessary changes. While there is a learning curve to navigate, instructors can transition to a hyflex learning approach and become strong advocates for it, appreciating the advantages it offers for both themselves and their students. Additionally, the hyflex learning model serves as a valuable tool for instructors, helping students cultivate a sense of self-responsibility, which is crucial for their success in the accounting profession. Overall, the impact of hyflex learning on accounting education is beneficial for both students and instructors.

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APPENDEX A

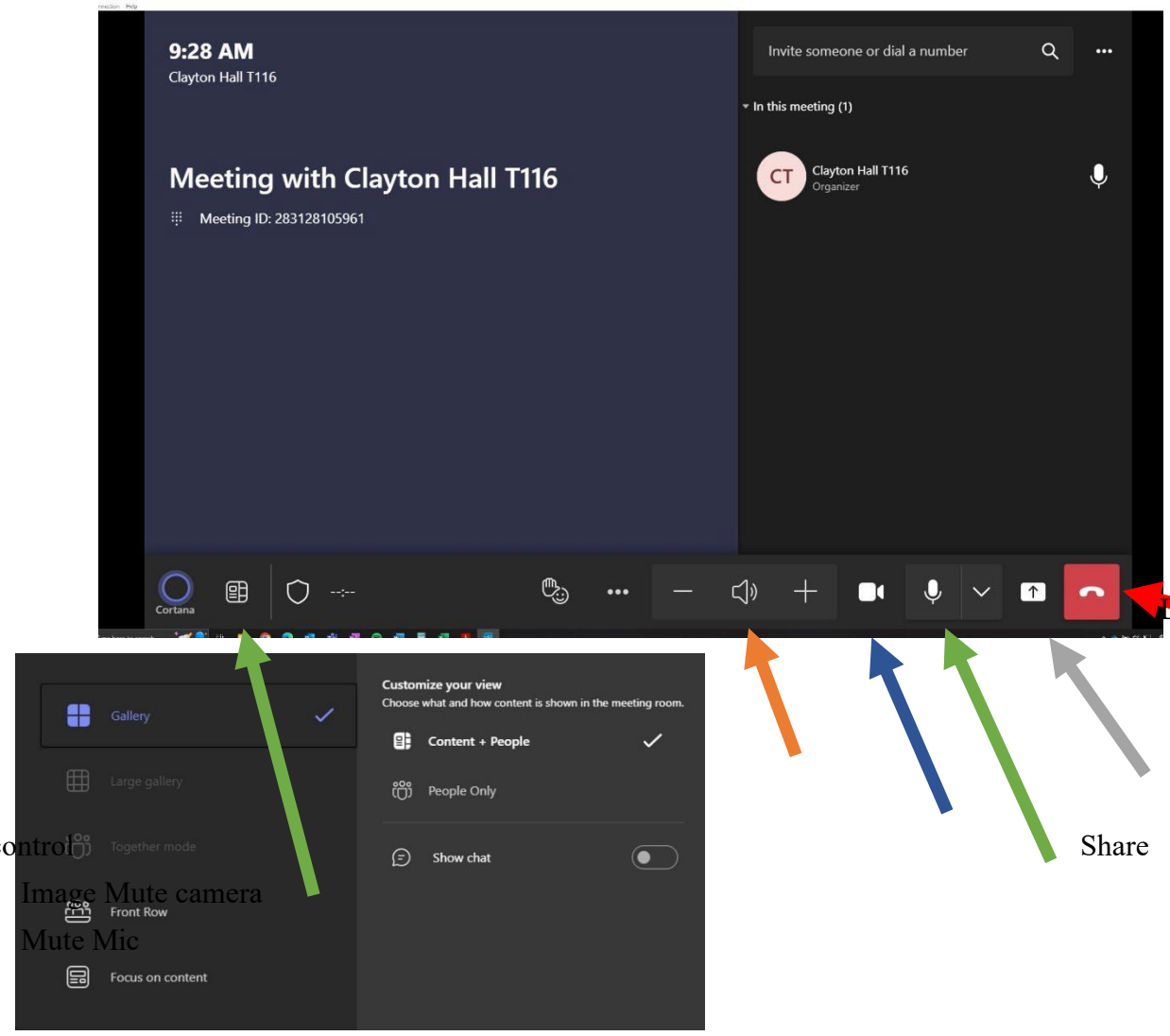
Hyflex Touch Panel

1. Add room to meeting.

a. Either invite the room to an already set up meeting.

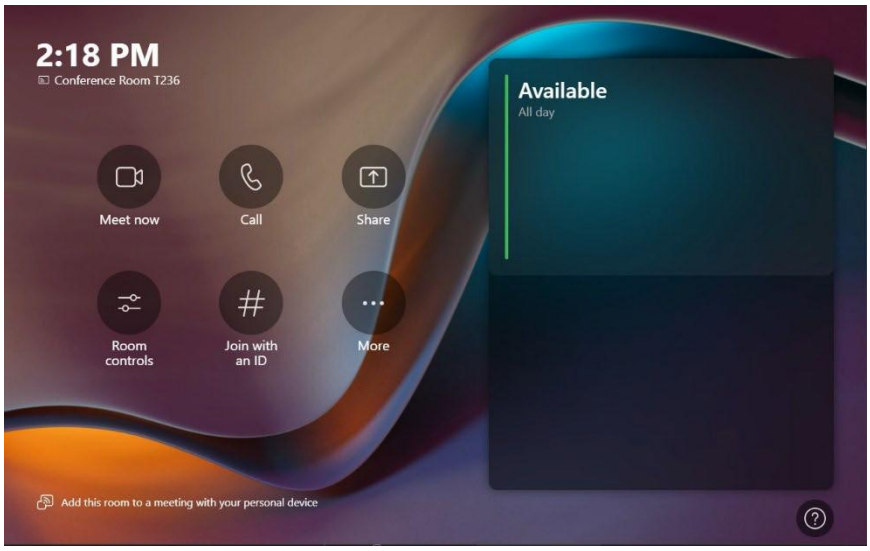
b. Click “meet now” on the main page and invite all participants manually.

c. Or join a meeting that the room was already invited to.



What you see on TV displays in the room

We recommend you select “People only” and “Show chat”



During class

1. Swap inputs or screens as needed throughout the class.
2. Make sure all laptops in the room are muted and mics are off.
3. If you want to share the projector screen to the class but it isn’t, press the “up arrow” on the bottom right of the hyflex panel-select “connected device” - “share.”

a. If sharing from the hyflex panel is not working, share your computer screen itself from your personal Teams account.

i. Note: You can only share your screen this way, not the doc cam or other inputs.

4. If you need to, mute students or kick them.

Hyflex Step by Step Instructions

Before arriving to class

1. Prep laptop to have all desired documents.
2. Make sure the meeting is scheduled, and the classroom has been invited (or assigned by location.)

Before class beings

1. Turn on the input panel.
2. Plug in computer.

a. Make sure all inputs and equipment you want to use is up and running as you want.

3. Press “cameras” on the top of the touch panel and set desired camera positions and PIP.
4. On the hyflex panel, join the meeting that was scheduled for your class.

a. If not invited ahead of time, invite the room from your Teams meeting on your laptop by inviting “Classroom COB152”

i. Once invited, on the hyflex panel, click the camera icon to join the meeting.

5. Press "4-square" button on the bottom left of hyflex panel.
a. Select "people only."
b. Check "show chat."
6. Make sure what you want to show is on the projector screen.
a. The room will "auto-share" whatever is being sent to the projector, if you do not want this, click the share image button, and turn it off.

7. START RECORDING.

Appendix B (Adopted from Orchard, L. X. et.all)

Appendix A. Questions Asked about Student Evaluation of Instructor*
(Possible Responses were: Hardly Ever; Seldom; Sometimes; Frequently; or Almost Always)
1. The instructor was well prepared.
2. The instructor gave clear explanations of the course content.
3. The instructor maintained close agreement between the stated objectives of the course and what was actually taught.
4. The instructor was enthusiastic about teaching the course.
5. The instructor set high standards of achievement for students.
6. The instructor created an atmosphere in which students felt free to ask questions or express opinions.
7. The instructor was accessible to discuss course related issues, either in person, by electronic means, or by telephone.
8. The instructor's syllabus clearly stated the course requirements.
9. The instructor demonstrated a genuine interest in and concern for students.
10. The instructor's assignments helped me learn the course content.
11. The instructor's management of the classroom or online learning environment was conducive to learning.
12. The instructor provided helpful feedback on graded tests and assignments.
13. The instructor provided timely feedback on graded tests and assignments.
14. The instructor met the class as scheduled, either on campus or online.

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* "Almost Always" was coded by the researchers as 5; "Frequently" was coded as 4, and so on. The instructor evaluation form also allowed students to enter comments; these comments were not analyzed by the researchers or accessed for purposes of this research per the Institutional Review Board.