

# REFLECTIONS ON HYFLEX TEACHING AND LEARNING



# Purpose

This document is intended to share **key findings and recommendations** from the first two years of HyFlex teaching and learning at Carleton (Fall 2021 to Winter 2023). We have prepared this report with instructors in mind, and hope that by reading about the experiences, successes, and challenges faced by instructors and students, you will gain practical, empirically based insights into how to best engage with HyFlex as a teaching tool. We also anticipate that this report may be of interest to faculty, staff, and students who may engage with HyFlex outside of course-specific context (e.g., study sessions, team meetings, multi-location events).

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Most importantly, we thank the students, instructors, and teaching assistants who shared their insights and experiences with HyFlex teaching and learning between September 2021 and April 2023.

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# Executive Summary

## Introduction

This document summarizes the findings of a comprehensive research project on HyFlex teaching and learning at Carleton. It shares the experiences of instructors and students who participated in HyFlex courses between September 2021 and April 2023. As we consider the future of HyFlex teaching and learning at Carleton, this report highlights the core themes that emerged and provides practical recommendations for implementation.

## Opportunity

In response to the evolving educational landscape and the diverse needs of learners, we sought to explore the viability and benefits of the HyFlex instructional approach. The HyFlex model proposes to increase access to learning through flexibility and inclusivity, which aligns with our mission to create a future of university education that is flexible, sustainable, collaborative, and empowering.

## Methodology

Our methodology included surveys, interviews, observations, and focus groups. The goal was to capture diverse learner and instructor experiences with the HyFlex teaching approach from across the institution, including preferences, satisfaction, and engagement with the learning experience.

## Key Results

The findings from our research coalesced around three central themes:

### 1. Flexible Access is a Top Priority:

Students and faculty alike value the flexibility that HyFlex offers, enabling learning to adapt to different schedules, locations, and circumstances. This

reduces barriers to education, particularly for non-traditional learners and those with competing responsibilities.

**2. Learning Communities Matter:** The sense of belonging and interaction within learning communities remains crucial. HyFlex should not compromise the community aspect of education, emphasizing the need for intentional strategies to foster engagement and connection across all modes of participation.

**3. Thoughtful Teaching Shines Through:** Thoughtful, well-planned instruction that leverages technology appropriately can enhance the learning experience, regardless of the mode of delivery.

## Recommendations

HyFlex instruction offers significant potential to expand educational access and flexibility at Carleton. By thoughtfully integrating this teaching approach and focusing on community and teaching quality, we can provide our learners with a rich and inclusive educational experience. Continued evaluation and iteration will be crucial as we navigate the future integration of HyFlex in our academic programs and other opportunities to support student success.

## Is HyFlex Worth It?

HyFlex instruction offers students autonomy to engage with their courses in ways that support their learning goals. But it does require instructors to adapt their traditional strategies and provide structures and opportunities that foster student success. Critical to this is ensuring that instructors have access to the resources needed to think through and implement those approaches. Under such conditions, HyFlex instruction can be very successful.



# Introduction

At Carleton, HyFlex courses provide students with the choice to attend classes **synchronously on campus or online** on a **class-by-class** basis. At other institutions, HyFlex goes by many names, including bimodal and multi-access learning. HyFlex is not in itself a modality; rather, it is a choice between modalities that is offered to students for each class session. Modalities options include in person synchronous, online synchronous, and online asynchronous – and the choice of at least two is required to be considered a HyFlex course.

HyFlex instruction was introduced in September 2021 as the campus was slowly reopening following closures during the COVID-19 pandemic. The online asynchronous modality is not included in Carleton’s definition but was supported by the technology and used at the discretion of individual instructors. In the uncertain times in which HyFlex was first implemented, providing students with the flexibility to engage with their classes in different modalities allowed them to continue their studies, even if they could not physically be on campus.

Like any course, HyFlex courses are subject to guidelines, restrictions and policies that impact the teaching and learning experience (e.g., course type, level of administrative support, departmental rules). Designing high-quality learning experiences, regardless of course format or delivery, requires thinking through pedagogical choices and technological affordances within the context of the course to promote student success.

Teaching and Learning Services (TLS) was responsible for implementing and supporting HyFlex instruction, but there was little empirical literature to guide our efforts. In response, we conducted a study to explore the first iterations of HyFlex teaching and learning at Carleton.

Over four terms, we heard from **over 700 students and instructors<sup>1</sup> about their experiences with HyFlex** technology, course design, engagement strategies, accessibility, and more via surveys, focus groups, interviews, and classroom observations.

This report captures **key takeaways** from the study alongside **practical recommendations** for current and future HyFlex instruction. The report is organized into four sections:

1

**HyFlex Teaching and Learning at Carleton.** In this section, we provide brief context about HyFlex at Carleton, including all HyFlex courses and the supports offered in the initial implementation.

2

**Overview of Data Collection and Analysis.** In this section, we provide a summary of the research study conducted on HyFlex instruction at Carleton.

3

**Key Findings.** In this section, we present the most notable findings from the study, with a focus on those that inform the practical takeaways.

4

**Recommendations for HyFlex Instruction.** In this section, we reflect on directions for TLS to consider as we continue to update HyFlex technology, spaces, and supports for all forms of instruction.

<sup>1</sup>Teaching assistants were invited to participate in two terms of data collection, but uptake was limited and so the results are not included in this report.

# 1

# HyFlex Teaching and Learning at Carleton

The first two years of HyFlex teaching and learning were characterized by fluctuations in the number, type, and size of HyFlex courses, HyFlex classroom technology, as well as campus policies (e.g., COVID-19 closures). Table 1 provides a snapshot of class sizes (mean and maximum enrolment) for courses formally listed as “HyFlex” in the course calendar in the first two years of HyFlex implementation at Carleton.

## HyFlex Courses at Carleton from Fall 2021 to Winter 2023

Table 1: HyFlex courses from Fall 2021 to Winter 2023, by size and class type

Term	Class size*		Total	
	Mean	Max	Courses	Sections
Fall 2021	22	67	82	143
Winter 2022	33	177	79	121
Fall 2022	51	183	12	16
Winter 2023	49	164	17	18

\*Across all sections; based on enrollment at start of term

## HyFlex Instructor Support

In preparation for Fall 2021, TLS assembled a team of staff to develop a series of HyFlex-specific professional development opportunities for instructors (summarized in Figure 1).

Figure 1: TLS-developed professional development events and resources for HyFlex instructors

## TLS-DEVELOPED RESOURCES FOR HYFLEX DELIVERY

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### ROOM ORIENTATIONS



### INNOVATION GRANT

10 HyFlex instructors received a \$5,000 grant to develop or re-design courses for HyFlex delivery with a focus on student learning.

### TECH SUPPORT

On-site staff supported Hyflex room users during class times.

### WORKSHOPS

Sessions delivered in a HyFlex format familiarized instructors with the mechanics and pedagogy of hyflex course delivery.

### HYFLEX CAFÉS

Students and instructors (in separate sessions) were invited to gather with a TLS facilitator to share their ideas and experiences in an informal setting.

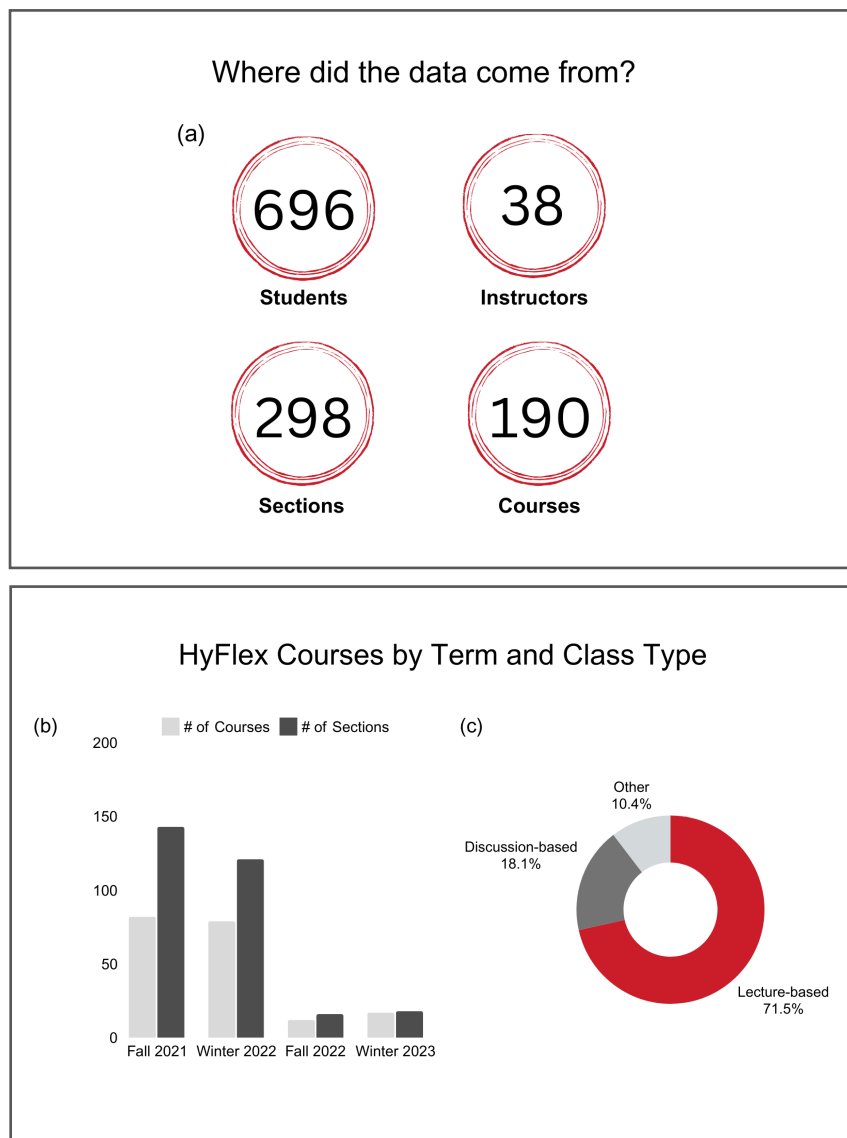


# 2

## Overview of Data Collection and Analysis

The research team was assembled in October 2021 and ethics approval was received in January 2022 for the project (CUREB #116754). As summarized in Figure 2, over four terms, more than 700 students and instructors shared their experiences with HyFlex teaching and learning through surveys, interviews, focus groups (HyFlex Cafés), and classroom observations.

Figure 2: Summary of (a) sources for the data obtained in the HyFlex Research project, (b) HyFlex courses by term and (c) class types according to student responses (n=657).



Data was collected from students and instructors across all five faculties. A summary of data sources for this project can be found in Table 2.



Table 2: Number of participants by term and data type

Data type	Number of Participants				
	Fall 2021	Winter 2022	Fall 2022	Winter 2023	Total
Student survey	168	387	48	93	<b>696</b>
Student café	12	8			20
TA survey	8	21			29
Instructor survey	7	28	2	2	<b>39</b>
Instructor interview	7	14	2	0	23
Instructor café	29	10			39
Classroom observation	0	7	2	0	9

## Surveys

Surveys asked about preferences, motivations, and experiences with HyFlex teaching. Instructors were asked about their experiences using the HyFlex technology and facilitating a HyFlex class, including executing in-class activities. Students were asked about their experiences learning in a HyFlex course, including questions about how they attended, how they engaged with their learning, and what barriers they faced. Surveys were sent out in February 2022 to instructors and students who had taken part in a HyFlex course in the Fall of 2021. Surveys were sent out in week 10 of the semester for Winter 2022, Fall 2022, and Winter 2023 to instructors and students in HyFlex courses

## Interviews

Interviews with instructors were 30 or 60 minutes long and could be completed after or instead of a survey. Interviews allowed for follow-up on survey responses and other topics relating to their experience, such as community-building in the course, comparison to in-person teaching, and additional insights. Each interview was recorded and transcribed for analysis. Four out of five faculties were represented in the 23 interviews (Faculty of Arts and Social Sciences, Faculty of Engineering and Design, Faculty of Science, Sprott School of Business).

## HyFlex Cafés

A total of five HyFlex Cafés were held in the first academic year of HyFlex courses (Fall 2021-Winter 2022). The cafés were described as “*an online session where colleagues teaching HyFlex this term can gather to share their experiences, brainstorm solutions to common challenges, and swap strategies for supporting student success in the HyFlex classroom*”. Notably, the HyFlex Cafés were the only data collection method where participants discussed HyFlex with one another.

## Classroom Observations

Seven (7) instructors invited us to conduct classroom observations in weeks 10 and 11 of the Winter 2022 term (one class observed per instructor). A minimum of two members of the research team participated in each observation (one online and one in person). Team members debriefed following the observation to compare their experiences as online/in-person participants. A summary of observed courses can be found in Table 3.

Table 3: Summary of observed courses

Faculty	Level of course: Lower (Y1-Y2) or Upper (Y3-Y4)	Course type (details)	Size (approximate)
Sprott	Upper	Lecture (flipped)	50
Science	Lower	Tutorial (problem-based)	110
Science	Lower	Lecture (slides)	80
FASS	Lower	Seminar (language study)	25
Science	Lower	Lecture (problem-based)	80
Sprott	Lower	Lecture (slides)	80
FASS	Upper/graduate	Lecture (“chalk & talk”)	35

## Data Analysis

For this mixed-methods study design, both quantitative and qualitative analyses were performed. Quantitative analysis of survey data was conducted using IBM SPSS Statistics Version 29.0.2.0 (20) and included descriptive (e.g., frequency distributions) and inferential (Chi-Square) statistics. Qualitative data from instructor interviews, cafés, and classroom observations was analyzed using NVivo 13 (e.g., interview transcription, thematic coding and analysis of recurrent themes).

## 3

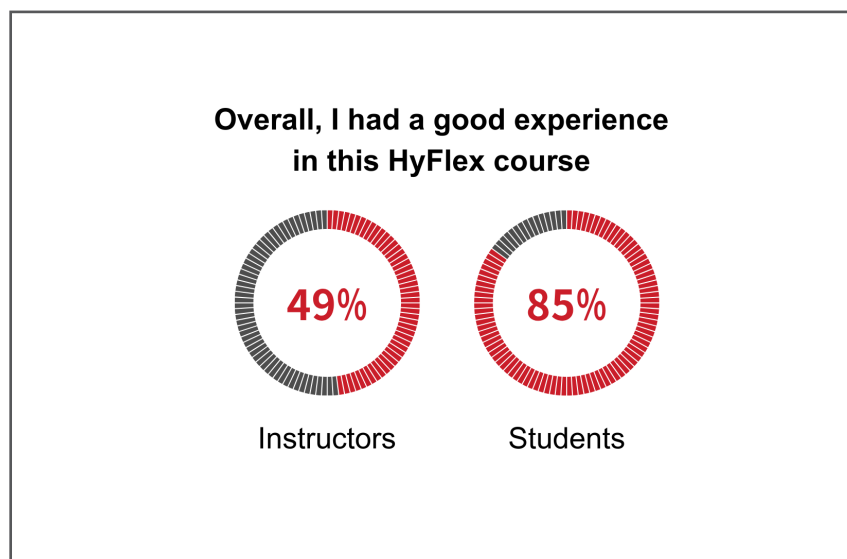
# Key Findings

This section brings the HyFlex experience to life, exploring perspectives of instructors and students engaged in HyFlex courses at Carleton. These findings are drawn from the full range of data collected and focus on elements that will help advance conversations about HyFlex teaching as an instructional strategy to support student success.

## Overall Experience

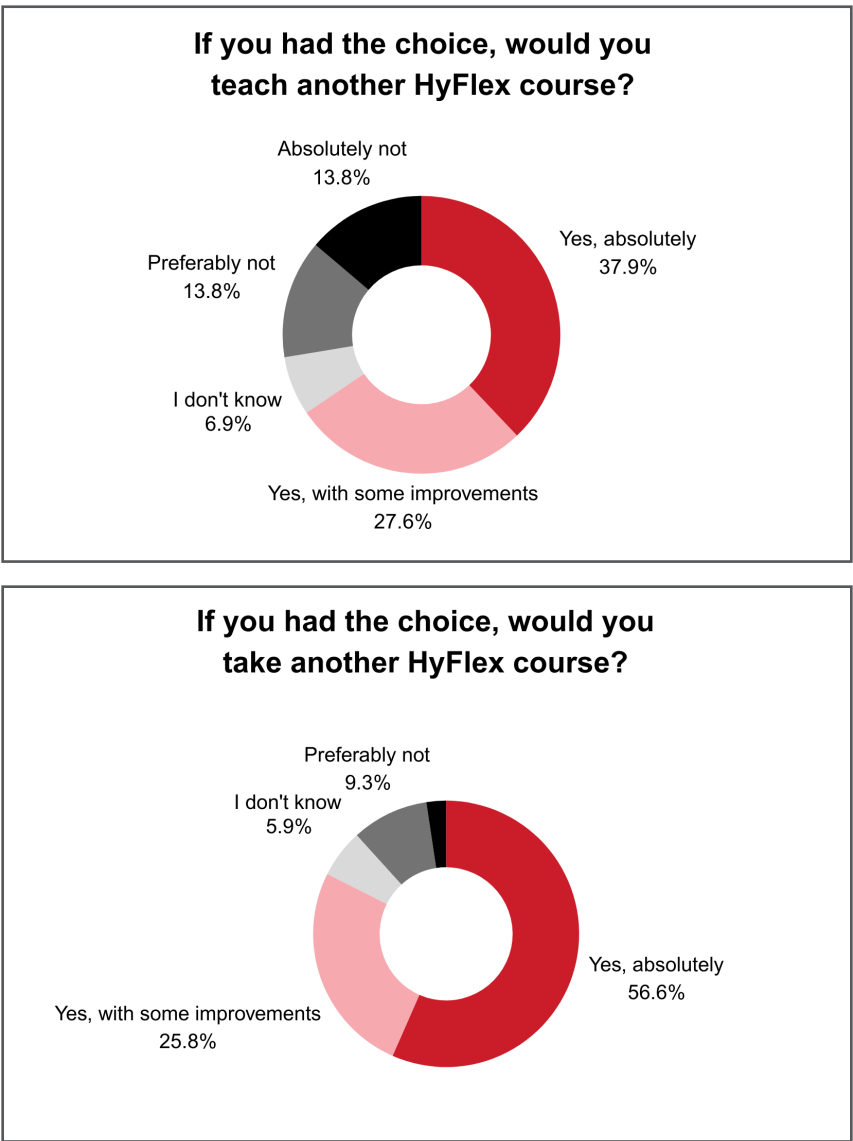
Students endorsed their HyFlex experience more consistently than did their instructors. Although there were expected and unexpected challenges associated with introducing a new course delivery option during a pandemic, half of instructors and nearly all students reported a positive experience in their HyFlex course (Figure 3).

Figure 3: Overall experience in the HyFlex course, reported by students (n=655) and instructors (n=39); options ranged from Strongly Disagree to Strongly Agree (students and instructors who chose Agree or Strongly Agree were combined).



Additionally, **65% of instructors said they would choose to teach HyFlex again and 82% of students said they would take another HyFlex course**, either without reservation or with some improvements to the technology (see Figure 4). This is an important measure of impact and success, especially considering the challenging societal circumstances around the introduction of this teaching tool. In instructor interviews, many attributed their challenging experiences to the learning curve and technological difficulties, and did not see these as reasons to reject the potential of HyFlex instruction in the future.

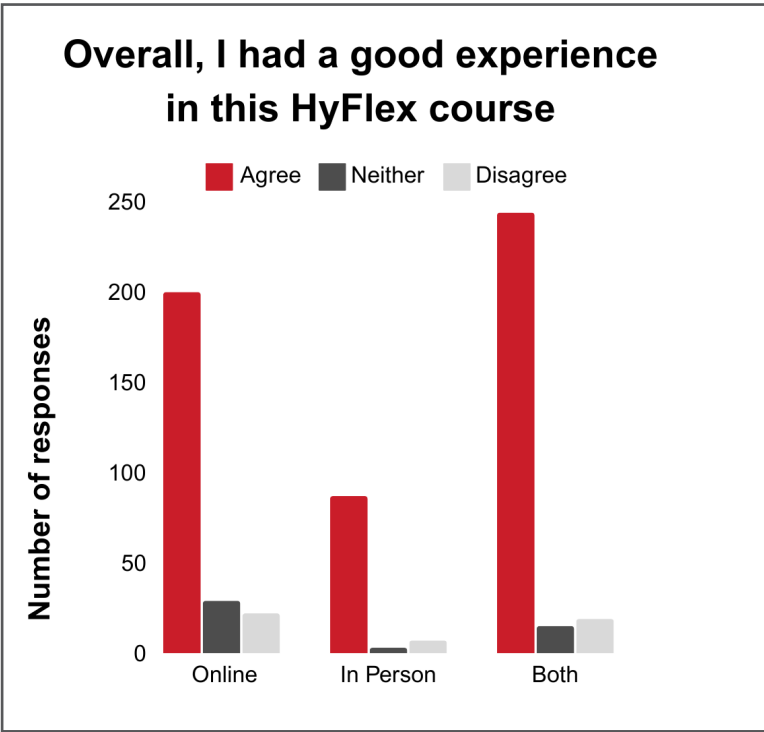
Figure 4: (a) Instructor survey responses (n=39) for the question, *If you had the choice, would you teach another HyFlex course?* (b) Student survey responses (n=655) for the question, *If you had the choice, would you take another HyFlex course?*



Although HyFlex was a new tool in the teaching practice of nearly all instructors in the study, **85% of students reported having positive experiences in their HyFlex courses, regardless of the modality in which they attended (Figure 5).**



Figure 5: Student survey responses (n=626) relating to their overall experience based on how they attended class.



From the data, three key themes emerged where students and instructors were well aligned: flexible access to courses, the importance of learning communities, and the ability of good teaching to reach learners in any context. In the following pages, we explore each of these themes further, including instructor and student perspectives and practical tips for instructors teaching HyFlex.

# 1 Flexible Access is a Top Priority

Instructors rated **flexible access for students as the top priority** – students equally rated flexibility and choice as their top priority. Flexible access to courses for students was the primary reason most instructors chose to teach a HyFlex course, and the most-cited reason for wanting to deliver a HyFlex course again.

In the instructor survey, 57% ranked the ability of learners to attend who could not have otherwise in their top three reasons for liking HyFlex. This value was reflected in student responses, which revealed diverse benefits of HyFlex, including flexible attendance for illness, reducing commute frequency, preference for learning in a specific modality, disability, and managing competing responsibilities.

Although the reasons students enjoyed the HyFlex approach varied, several students who would have otherwise missed classes due to illness, weather, or other commitments were able to remain engaged because of this tool. One student elaborated on how having **the option to attend online can encourage students to make good choices about their health**, saying it “makes being sick

a less stressful experience as you know you won't be left behind, this means it's easier to look after yourself and get better."

Most instructors agreed that flexibility for students was the greatest benefit of HyFlex, and one instructor commented on this aspect of student choice, saying "I think the benefit is that the students were able to make informed decisions about their attendance, and as a result, my attendance was very strong all year (although there were times when most students were attending via Zoom)".

Students who attended HyFlex courses online (either sometimes or always) provided the most comments about their appreciation for HyFlex. In some ways, this is an expected finding that aligns with an approach that prioritizes student choice in modality. It is also possible that student preference was slightly skewed toward the online option due to disruptions to the typical in-person learning environment.

**Challenges included physical distancing requirements and a lower number of students attending in person** than would be expected in typical circumstances. The online experience of the HyFlex class, on the other hand, closely resembled a fully online class, a modality with which students had become familiar 18 months into the pandemic. As such, student expectations may have been more aligned with the online experience, which could have impacted their overall perception of the course.

## Modality and Overall Experience

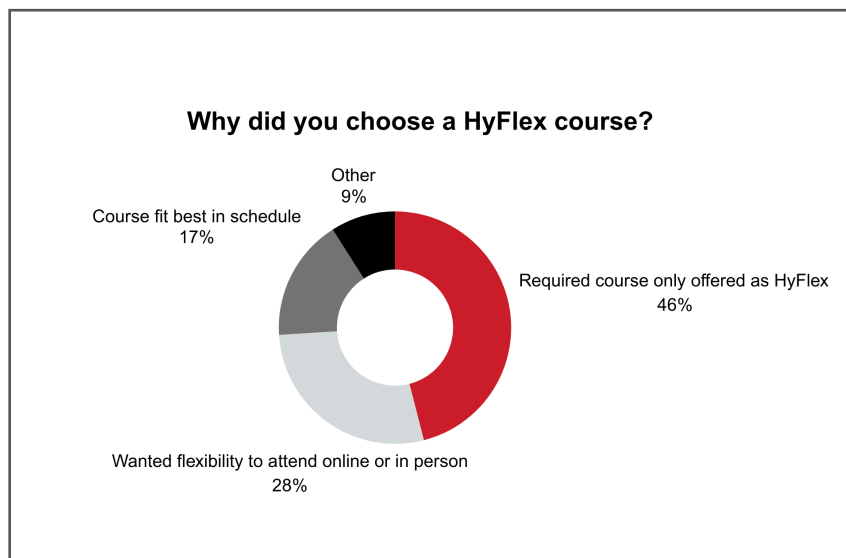
Although positive perceptions of the online experience were salient in student comments, the survey revealed **students who attended in both modalities were the only group to report having a good experience more frequently than expected**. Meanwhile, students who attended only online reported having a good experience less frequently than expected.

Instructor data supported this finding, consistently citing a **lack of active participation and concern about the learning experience of online students**. Although HyFlex instruction ideally involves dynamic classroom interactions between the instructor and students in different modalities, students may have made assumptions about what participation looks like in an online class (e.g., mostly or only listening and taking notes, keeping their cameras off) which may have affected their perception of the experience and did not match instructor expectations of engagement.

## Learner Needs and Preferences

There were many reasons students enrolled in HyFlex courses and many positive benefits reported from their experiences. Still, most students did not choose HyFlex courses for their teaching approach, as seen in Figure 6. In some ways, this makes the findings of this study more meaningful, as most students were not self-selecting into HyFlex courses for the flexibility they offered.

Figure 6: Student responses (n=654) to the question, *What was the primary reason you chose this HyFlex course?*



While many students appreciated the choice to attend online when coming to campus was not possible, others appreciated the opportunity to attend campus during a challenging time of closures and reopening throughout the pandemic. Although this does not necessarily represent a long-term benefit of HyFlex, it is a contextually meaningful finding, especially for first year students:

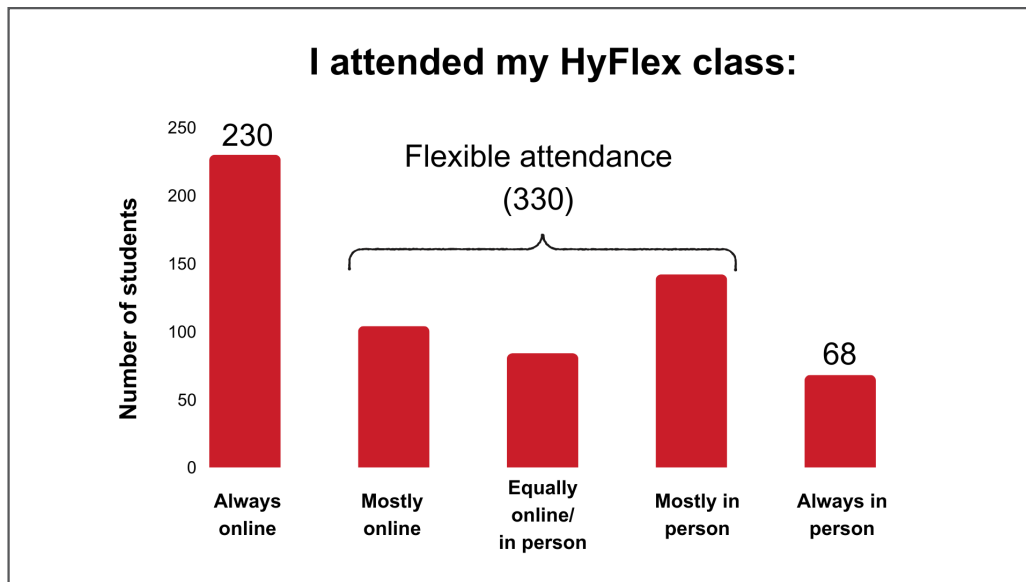
“Despite being in a pandemic this HyFlex course gave me the chance to experience university in person. Being a first-year student completing the last year of high school online I was excited to have the opportunity to be in person by choice with HyFlex classes giving me the opportunity to have a somewhat normal university experience despite [...] the circumstances at hand.”

**Learners have different needs and preferences**, which was evident in our data. Students regularly cited the importance of choice in deciding how to attend their classes, and while many offered enthusiastic support for HyFlex, others reflected on how their own preferences and learning needs intersect with HyFlex instruction.

One student reflected, “I like the convenience and the ability to manage time, but I personally need the structure that in person provides. I think [HyFlex courses] are great to have but it’s no longer an option I want for myself”. This comment offers a thoughtful **distinction between a learner’s preferences and a knowledge of self and the learning environment that will support their success**. Exercising this kind of choice and embodying a self-directed attitude towards learning aligns well with the purpose and goals of HyFlex instruction.

Other student responses echoed this sentiment, and although the number of students attending exclusively in-person was notably smaller than the other two groups (see Figure 7), those who reported in-person attendance most often cited that a physical classroom was (1) the environment in which they learned best, (2) induced a stronger commitment to attend classes, and (3) allowed them to develop a better sense of classroom community.

Figure 7: How students engaged with their HyFlex courses (n=628).



Students engaged flexibly and variably with the HyFlex model in this study, with more than half making flexible choices about modality throughout the term. The number attending “always online” may be high due to pandemic closures and concerns about health and safety, and it will be interesting to see how students attend HyFlex courses in more stable societal conditions.

## Modality and Class Engagement

Students who attended in different modalities reported engaging with the course differently as well. Some examples include:

- **Attendance: Students attending in person or using both modalities attended class more frequently** than expected, while online only students attended class less frequently than expected.
- **Attentiveness during class: Students attending in person or using both modalities reported higher attentiveness** than expected, and **online students reported lower attentiveness** than expected.
- **How often students asked and answered questions in class: In-person students asked and answered questions more frequently** than expected, and **students using both modalities or online only asked and answered questions less frequently** than expected.
- **How students reviewed lecture materials and notes: Online students reviewed materials more frequently** than expected.
- **Watching lecture recordings instead of attending class: Online students watched lecture recordings more frequently than expected**, while students who attended in person or used both modalities watched lecture recordings less frequently than expected.
- **Studying on own outside of class: Online students studied more frequently** than expected.
- **Studying with peers outside of class: All students studied with their peers less frequently** than expected.



There was no difference between modalities relating to how students took notes, watched recordings in addition to attending live sessions, attended office hours, submitted course assessments, or completed course readings.

Overall, these findings suggest that **students engaging with both modalities were receiving similar benefits to students attending in person – all while being given the flexibility to choose how they attend**. Instructors may consider drawing attention to this pattern to encourage students to use the flexibility the HyFlex model offers. They may also wish to reinforce the challenges of learning exclusively online based on these findings and encourage those students who cannot be there in person (at least some of the time) to carefully consider their study supports so they can stay engaged with the course.

## Tips for instructors

- Encourage students to reflect on and articulate their learning needs and preferences
- Describe how modality may change the way students engage with the course for success
- Incorporate Universal Design for Learning principles into your course design
- Consider your own goals and needs as an instructor
- Talk openly about the pros and cons of flexible attendance with your students

Consistent with [Universal Design for Learning](#) principles, respecting the multiple ways in which students learn effectively is a recommended evidence-based approach to teaching. HyFlex is one strategy to approach these differences and facilitate learning experiences that meet student goals.

Not all students are aware of their learning goals and needs, and our data revealed satisfaction and learning experience to be related but distinct measures. For example, although most students reported high satisfaction with their HyFlex courses, **students who attended in person or using both modalities were more likely to say it was easy to focus on course material during class compared to those who attended exclusively online. Students who attended in person or using both modalities were also more likely to report ease of connecting with their instructors and their peers than those who attended exclusively online.**

Flexibility and choice for learners were paramount to both instructors and students in this study. The individual preferences and choices made by learners impacted their experience in different ways, leading to the expression of varying needs (e.g., more contact time with the instructor, better technology in the classroom, more interaction with peers). Across the range of data, one dominant theme emerged around a shared experience from both instructor and student data, regardless of modality in which they attended class: the importance of building a sense of community around learning.

Instructors want to **build connections and learning communities** in their courses, and in this study, students often cited the lack of same in their HyFlex courses. The challenges of student engagement in online courses have been widely discussed in the literature and were identified as a significant challenge prior to the pandemic (Dumford and Miller, 2018).

During the implementation of HyFlex at Carleton, **many additional factors contributed to a sense of disconnect and isolation for students and instructors alike**, including university closures, social distancing, and the ongoing challenges associated with living, working, and going to school during a global pandemic. As such, it is not surprising that instructors reported difficulty fostering connections between learners in their HyFlex courses. Although this challenge was common, some instructors were very successful at building this community in their courses, through well-designed activities and open communication about expectations.

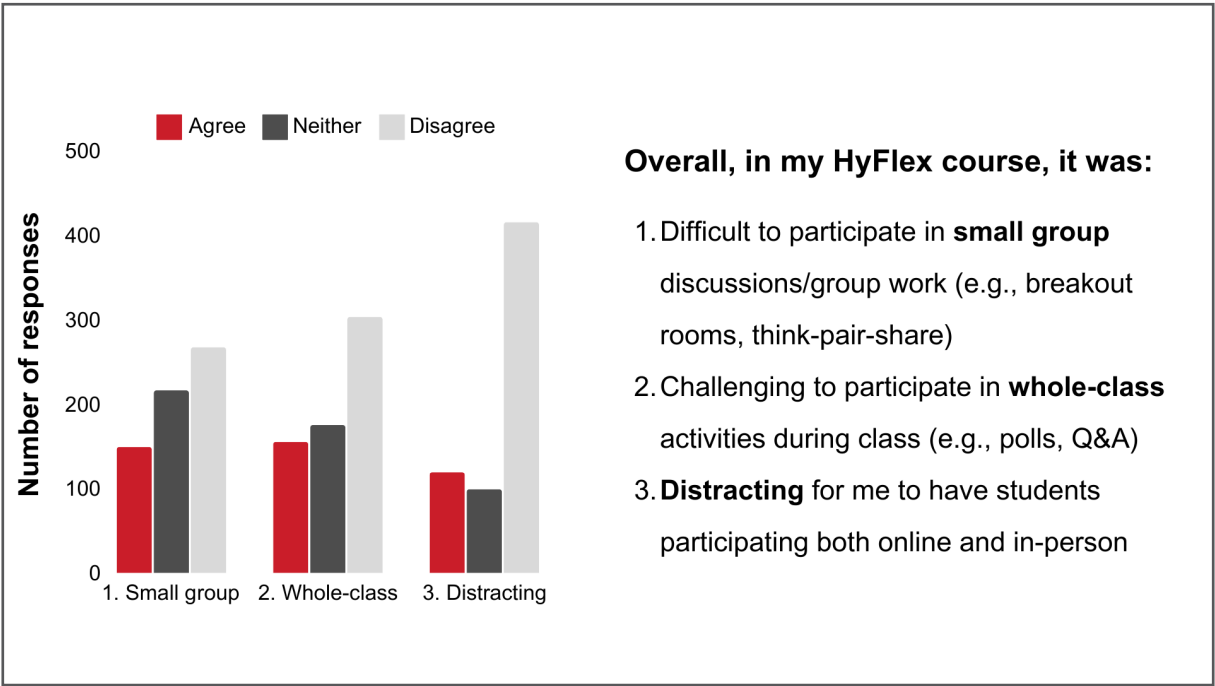
## Facilitating Activities in the HyFlex Classroom

In addition to the known engagement challenges with online learning, and the situational and societal factors being managed during this study, instructors were also navigating a teaching tool that was new to most, which was accompanied by a **predictable learning curve**. From a class facilitation standpoint, 65% of instructors reported some degree of difficulty managing engagement activities, including small group work and discussions. 57% of instructors found it distracting to have students participating both online and in-person.

Classroom management and facilitation of activities are challenging aspects of teaching more broadly, and as such, teaching HyFlex for the first time may have limited some instructors' abilities to create and support opportunities for connection among students, especially those attending class in different modalities. Instructors were navigating their own challenges returning to the classroom after teaching online for multiple semesters, and not all were able to access their support resources (e.g., 1-on-1 consultations with TLS) to strategize and plan for intentional engagement in their HyFlex courses.

On the other hand, most students disagreed when asked if it was (1) challenging to participate in small group discussions/work, (2) difficult to participate in whole-class activities, and (3) distracting to have students participating both online and in person (see Figure 8). Additionally, no significant differences were observed in the responses to these questions based on modality in which students attended. In other words, students did not report difficulty engaging in classroom activities when they were integrated into their HyFlex classes, regardless of modality.

Figure 8: Student survey responses addressing three questions about their learning experience (n=632).



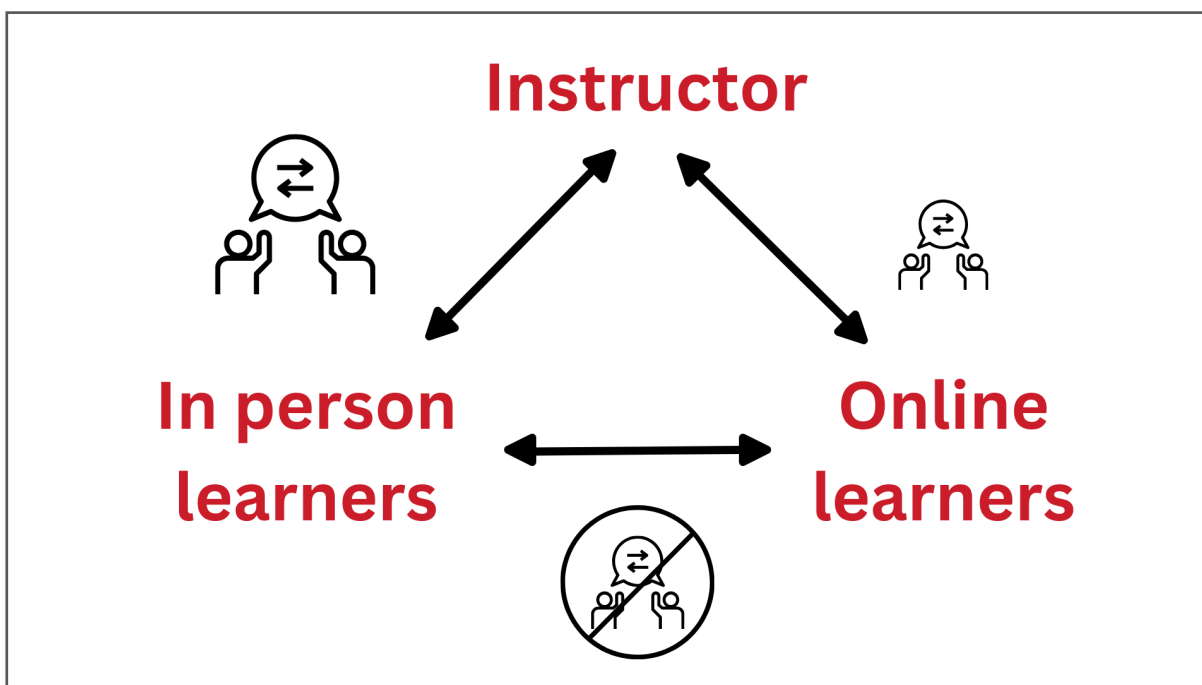
Despite TLS efforts to support the design and redesign of course activities for HyFlex delivery, interviews revealed that most HyFlex classes in this study were adapted from an online or in-person course. This approach led to mixed results, and although technological difficulties were reported as the primary barrier to smooth facilitation, other challenges faced were associated with course design. Instructors who wish to teach using a HyFlex approach would benefit from a complete course redesign – something TLS is keen to support – rather than moderately adapting existing courses.

### Peer Connections

Surveys, interviews, and classroom observations revealed that spontaneous engagement from online learners was uncommon, and **those who attended solely online had the most difficult time connecting with their instructors and peers**. Indeed, **students attending in different modalities had almost no interaction with one another**, which further challenged the sense of community for learners in the course (see Figure 9).

It should be noted that very few instructors designed their classroom activities to allow online and in-person students to see each other (e.g., student-facing camera in the classroom, sharing Zoom video grid on the projector), which certainly contributed to decreased peer connections and sense of community in the class. Several students noted that it was difficult to make friends and find peer support, which speaks to the delicate nature of the classroom ecosystem and the need for participation from many to promote support and growth within this community.

Figure 9: Perceived connection and interaction between instructors and students in HyFlex classes based on modality of attendance (reported across data collection methods by students and instructors).



While in-person students and instructors found it easy to connect with one another, online learners and instructors both noted this challenging. With few exceptions, in-person and online learners agreed there was almost no interaction among learners across modalities.

Interestingly, both groups of students (i.e., in person and online learners) reported an instructor bias towards paying attention to the “other” group. Student comments revealed a lot of “us vs them” language relating to the groups of learners using different modalities, highlighting the need to build a sense of community across learners in HyFlex courses, perhaps even more so than in single-modality courses. As one instructor put it in an interview, “You’re split between two communities”.

In some cases, the audiovisual setup was such that students could not see or hear one another, so collaboration was not possible. Other times, there were missed opportunities to implement strategies to bring learners together on a topic or question, creating a sense of facing the problem together as a class, despite learning in different modalities.

Without a clear plan for building a sense of community in a HyFlex class, students can be left feeling disconnected from the instructor and their peers. One instructor said that it was “easy to forget about the online students”, which speaks to the importance of being intentional about building in moments where all students are expected to participate, regardless of modality.

In the classroom observations and HyFlex Cafés, it was noted that students attending online felt left out if instructors ignored the Zoom chat, as though these learners were not part of the class. One online student described it, saying it felt as though they were “taking the course without actually being there”. Similarly, students attending in person sometimes joined the Zoom call to take part in – or at least stay caught up on – the chat, reporting feeling left out if they could not see or participate in the chat.



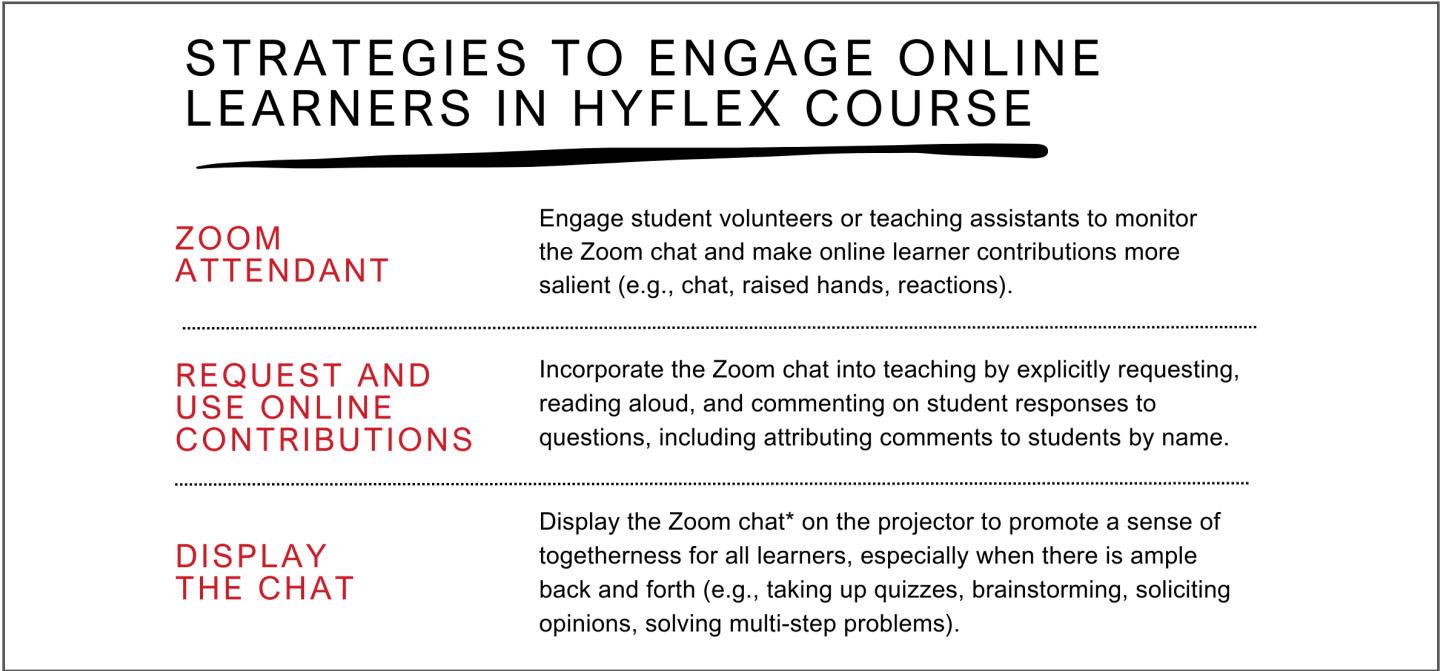
This provides an actionable opportunity for HyFlex instruction to leverage the Zoom chat as a space where students can connect with one another and with instructors through reactions, ideas, questions, and responses. In our classroom observations, some of the instructors who were most successful in creating a sense of classroom community facilitated the Zoom chat by acknowledging and reading student contributions and connecting them to other student comments, especially when two students who collaborated on a response were attending in different modalities.

### Community-Building Approaches in the Hyflex Classroom

Classroom observation data offered examples of successful approaches to building community in HyFlex courses through intentionally designed classroom activities. **Classes with the highest engagement were those in which instructors regularly brought online learners and their experiences into the classroom.** Bids for participation from online learners were most successfully met when activities were thoughtfully designed to incorporate the online group.

Since both instructors and students commented on the disconnect between online learners and those in the physical classroom, it follows that addressing this piece of the puzzle would help build a strong sense of community for the overall class. Some strategies observed in this study to engage online learners are described in Figure 10.

Figure 10: Strategies noted from the classroom observation data to engage online learners.



*\*Be sure to tell students you are displaying the chat so they know it will be visible to all learners, including any private messages sent to the instructor. Depending on the nature of the course, it may not always be appropriate to display the Zoom chat in class.*

One observed approach to intentionally build relationships with online learners was to ensure the Zoom call was open for the entire time an instructor was present in the classroom, even if it was only for a few minutes before and after class. In all cases, thoughtful approaches to engage learners in different modalities were both noticed and appreciated by learners.

# Tips for instructors

- Design activities with both groups of learners in mind
- Build a set of shared “rules of engagement” or expectations for engagement
- Allow in-person and online learners to see and hear each other, when possible
- Leverage the Zoom chat as a space for collaboration across modalities
- Bring online learners and their experiences into the classroom regularly

## 3 Thoughtful Teaching Shines Through

Despite the challenges faced by instructors while engaging with a new teaching tool, students were supportive and understanding, often acknowledging instructor efforts to provide to provide a high-quality learning experience. For example, one student said:

*“There were definitely technical difficulties at the beginning of each class and some of the equipment didn’t work like it was supposed to so anybody learning online couldn’t always see the prof or the board. The professor handled it REALLY well and did the best [they] could with what [they] had, and a lot of why the course worked as HyFlex was how well [they] adapted.”*

### Teaching Effectively with Technology

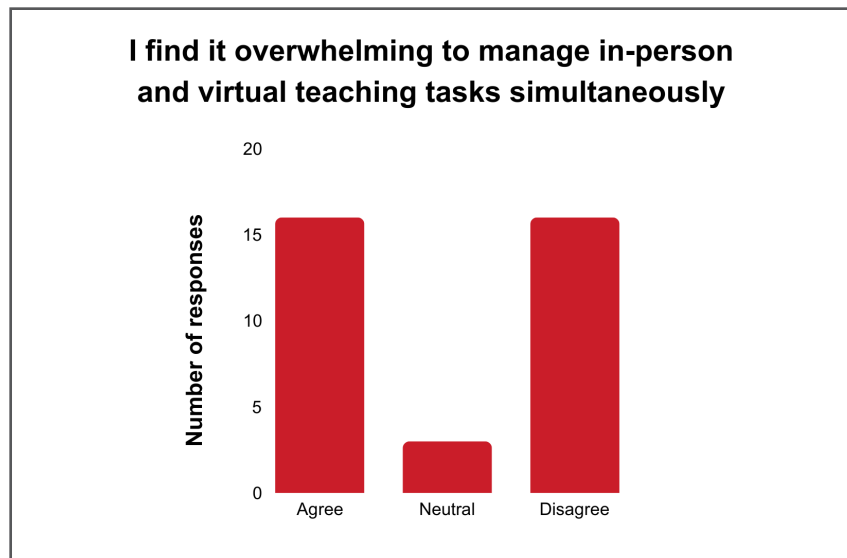
Engaging with a new set of technological tools involves a learning curve, and about one third of instructors reported difficulty using the HyFlex technology or reliability issues with the technology. More than 80% said they received the technological support needed to perform their duties, and most spoke highly of the TLS supports in place around the implementation of HyFlex at Carleton.

Instructors described the lack of automation of the technology as a barrier, saying that ease of use will increase use – and satisfaction – of the HyFlex classroom technology. Suggestions included having a “default” or “reset” button to ensure settings are maintained between users, having a single-button setup, and having more (and more intuitive) options for changing and selecting camera views depending on the classroom needs.

For example, in some cases, the camera’s focus should be on an instructor’s face or hands (e.g., language learning, demonstration of a skill, discussions involving sensitive topics), while in others, the camera should stay on a board where an instructor has written information for students to copy down, rather than moving with the instructor around the room. This rich feedback provides evidence of thoughtful teaching, as considering our learners’ needs in specific class contexts models a learner-centred attitude towards teaching that supports teaching excellence in our community.

Although instructors generally agreed that improvements to the technology would improve the user experience, responses were divided when instructors were asked if they found it overwhelming to manage in person and virtual teaching tasks simultaneously (Figure 11).

Figure 11: Instructor responses to the question, *I find it overwhelming to manage in person and virtual teaching tasks simultaneously* (n=35).



While for some this was a prominent issue, for others, it was negligible. Like learners, instructors have different preferences, needs, and skillsets in the classroom which should be considered when deciding to pursue a HyFlex teaching approach.

## Practical Approaches to HyFlex Instruction

Although HyFlex instruction was new for almost everyone involved, several instructors employed very thoughtful teaching approaches that supported student success and resonated very clearly with students in their survey and HyFlex café responses.

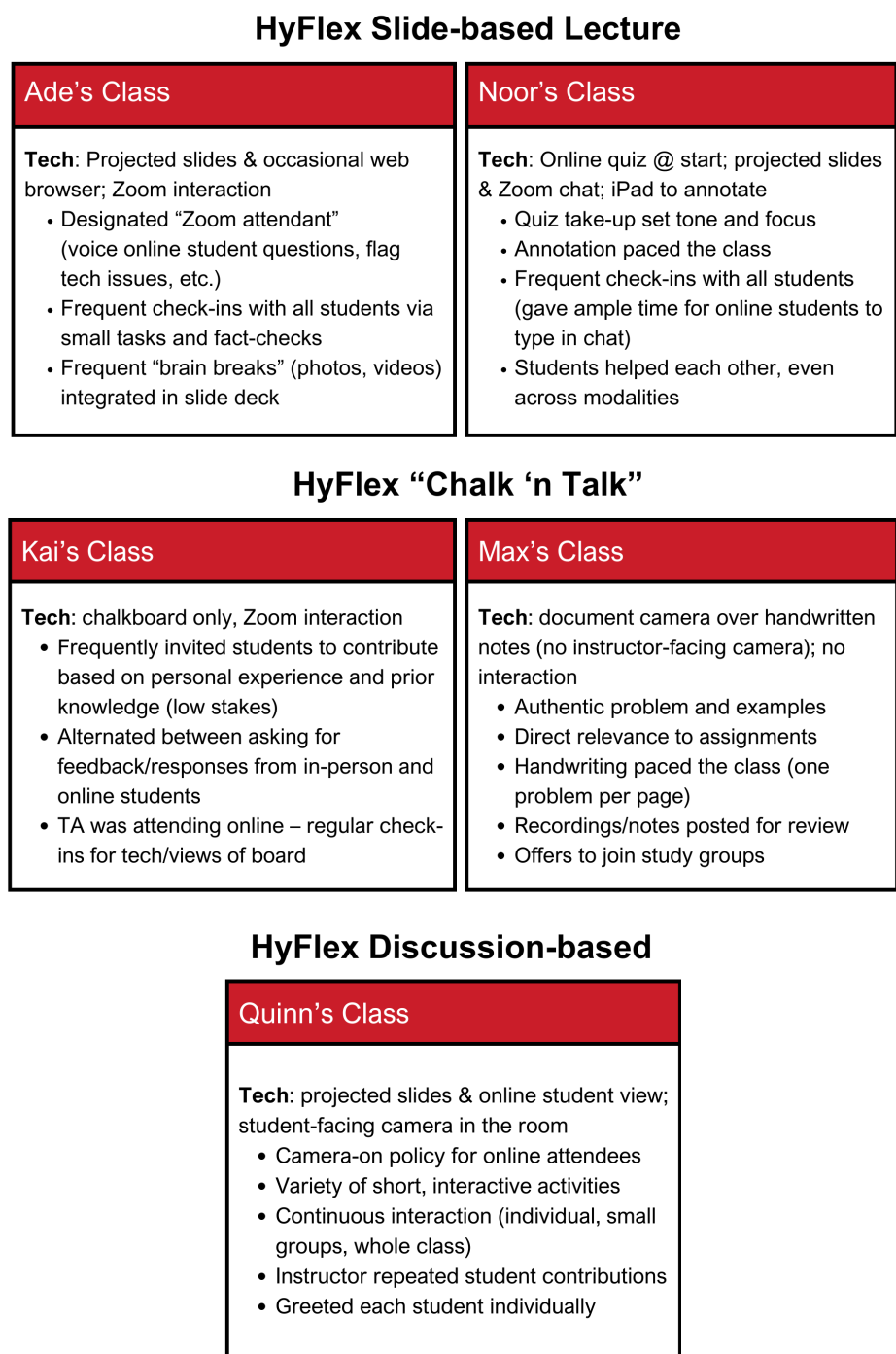
For example, instructors who paced the lesson using live writing (e.g., annotating slides, writing on the board) allowed students, especially those attending online, **time to process and contribute to class discussions**. Including periodic slides to signal a topic change, brain break, or to cue an instructor to ask if there are questions can serve as a reminder to pause and check for student contributions (e.g., in the Zoom chat). Including polls or asking for student contributions out loud and/or in the Zoom chat can accomplish a similar aim, bringing attention to the learners and their progress on learning during class.

One instructor used lots of activities and group work in class, and explained how their use of shared documents helped to provide a sense of what online learners were doing:

*“They used shared documents so [students] could work together online and even in the classroom... having that shared document really helped because I could see them, like, people online in the group, writing away... each individual person was making a contribution.”*

Instructors who successfully engaged their learners did not use one specific or common approach, but rather built on their individual teaching strengths and applied them to the HyFlex model to reach their learners. To showcase the diversity of effective HyFlex teaching strategies observed in this study, we have compiled five HyFlex case models (see Figure 12). These models provide examples of instructional approaches used in different course types (e.g., slide-based, chalk and talk, discussion-based) with instructors who have varying levels of comfort with technology. While all aspects of any one model may not resonate with instructors, it is hoped that all instructors may identify one or more instructional strategies across all five models they could attempt in a HyFlex teaching situation.

Figure 12: Case models developed from classroom observations that show various classroom contexts and comfort with technology.





Other approaches to promote student success were used outside of the synchronous class space, including employing **regular outreach moments** and assignments to maintain a connection and presence with the full group. Some of the successful approaches observed included weekly check-in announcements in Brightspace, an “Ask the Prof” discussion forum, audio/video feedback on assignments, one-to-one conferencing, and themed or semi-structured office hours.

In summary, while many instructors and students voiced different opinions about the HyFlex experience, they also shared some key perspectives around what makes a course successful. It was abundantly clear from all data sources that students and instructors value, above all else, choice for learners, community in their cohorts, and high-quality learning experiences.

## Tips for instructors

- Reflect on what tech setup and tools will best support your learning goals
- Consider your comfort with technology when designing activities
- Incorporate intentional moments to check in with students (e.g., polls, brain breaks)
- Build on your existing teaching strengths to connect with your learners
- Consider opportunities to promote engagement between classes



### A Note About Grades

Although the survey asked students questions about the learning experience, no specific metric to measure learning was included in this study. Final grades were not included in this study, as several factors compromised the reliability of grades, including Carleton’s compassionate grading policy and the many changes in course structure and assessment that took place during the pandemic. There were also several reports of instructors taking the class “fully online” for multiple (or all) classes during the semester due to their own illness or personal circumstances, which would have limited any data obtained about learning in a fully HyFlex course, according to Carleton’s definition of HyFlex instruction.

# 4

## Recommendations for HyFlex Instruction

HyFlex course design and multi-access learning existed for years prior to the pandemic, pioneered by Brian Beatty in the early 2000s ([Beatty, 2007](#)). In [Beatty's 2019 article](#), Expanding the Implementation of Hybrid-Flexible Courses and Programs, Beatty shares an important note for readers to consider:

“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.”

At the time when HyFlex instruction was widely adopted by post-secondary institutions, conditions were extremely constrained. While the **need to provide modality options** to students was the driving factor for HyFlex implementation during the pandemic, a deficit in time, resources, and options meant that **carefully thinking through course design** for HyFlex delivery and **reflecting on situations where HyFlex made the most sense** were rarely possible.

The context at the time of implementation determined where we started, and a more stable context, combined with our diverse and shared experiences with HyFlex, will allow us to imagine different futures involving HyFlex instruction.

### Key Takeaways

Learners and instructors have different goals and accordingly, valued different things about the HyFlex experience. Still, they came together on key ideas from which we can glean important recommendations for the future of HyFlex instruction at Carleton.



**Flexible access is a top priority.** Students and instructors agreed that student choice matters, aligning with Carleton's goals of a future of university education that is both flexible and empowering ([Transforming University Education, 2023](#)). HyFlex instruction does not ask instructors to manage individual cases of accommodation when students cannot attend class. Rather, letting students choose a modality on a class-by-class basis builds flexibility into the high-level structure of the course.

Encouraging learners to make choices about how they attend class that align with their goals, needs, and commitments allows them to regularly use their decision-making skills to practice managing their schedules in a context where it is expected, rather than judged or penalized.

In HyFlex courses, instructors must set clear expectations for engagement regardless of modality. Setting clear expectations is always important but may be especially necessary in HyFlex, as students may not be used to this degree of flexibility and choice. For example, creating a rubric to describe expected participation criteria (e.g., spoken contributions, written contributions, responding to polls) and/or co-creating “rules of engagement” with students can facilitate student engagement. Although these strategies are beneficial in any modality, they may be particularly useful in HyFlex courses, where learner engagement can look different in different modalities.

Instructors who use the HyFlex approach should talk to students about the pros and cons of flexible attendance, offering strategies and support resources to manage their workload, and opportunities to connect with the instructor and their peers within and outside of the classroom.



**Community in learning matters.** One of the most cited challenges of the HyFlex approach was building a sense of community among learners. Learners who support one another in their efforts to achieve educational goals contribute to an **empowering, collaborative, and sustainable** future of university education. Yet, the challenges of doing so in a class where learners shift between modalities are evident, and as such, careful consideration and planning for intentional community-building is required.

To achieve this, instructors should consider ways to **build relationships with their students** and for **students to build relationships with one another**, both within and outside of the classroom. This is especially important for online learners who may not have the same access to instructor time before and after class, and during class breaks.

One of the greatest benefits of multi-access learning is that students living in remote regions or abroad can attend courses with on-site peers. **Broadening the outreach of courses to potential students** beyond the Ottawa region allows for more diverse student communities within the university. For this reason, prioritizing a sense of community at the level of course design has the potential to expand and enrich the Carleton community in transformative ways.

Instructors should also consider the importance of trust and power when designing learning experiences for learners in different modalities (e.g., who/where learners are, whether cameras are on or off, if/how the chat is displayed in class). Instructors and students should collaborate to set norms for their learning community that make sense given the goals for the course, as well as course and learner context.

Ideas for practical strategies instructors might consider to build community in their courses can be found in Figure 13.

Figure 13: Strategies to build community in HyFlex courses.

STRATEGIES TO BUILD COMMUNITY IN HYFLEX COURSES	
INCLUDE ICEBREAKERS	Consider including icebreaker activities in the first few weeks (or every week) to get students talking to one another (and you) in informal ways. Spending a few minutes in each class to allow for connection-building can have a big impact on classroom community.
PRIORITIZE PEER-TO-PEER INTERACTIONS	Make time in class for peer-to-peer collaboration. incorporate an “Ask a Peer” or “Social café” discussion forum where students can connect online. Use “peer pods” where students are placed in groups for projects, study teams, or to review each other’s work.
CONNECT STUDENTS IN DIFFERENT MODALITIES	Find out who is learning at a distance and help connect them with local (e.g., group work, study teams). Use the “Front Row” approach (have 3-5 students sign up to be on camera for each class) to create visible connections between students. Encourage in person students to bring devices and connect to the chat if they wish.

→ **Good teaching shines through.** Regardless of course context, class size, or discipline, one salient finding was that instructors who were intentional with their course design and learning activities, and attentive to learners’ goals, were celebrated in student reports of satisfaction. Thoughtful teaching and intentional course design can be effective in any course format or modality, even when challenges are faced, aligning with an **empowering** and **sustainable** future of university education.

Many of the challenges reported in this study reflected broader teaching challenges that exist in online learning, rather than those associated with HyFlex specifically. For example, comments from both students and instructors positioned online learning as an inferior option to in-person instruction. This notion reveals both learner and instructor bias towards in person learning as “optimal”, independent of teaching and learning approaches employed to support learning and practice of skills in the classroom. This hesitation around online learning more broadly as an instructional approach certainly impacts attitudes around HyFlex teaching and learning, which attempts to seamlessly integrate two modalities viewed and experienced very differently by instructors and learners.

As teaching approaches and educational technologies continue to evolve, instructors who are grounded in intentional course design will continue to provide high-quality learning experiences that transcend modality, creating a sustainable future of university education. Notably, our data also suggest that with time, the student experience in HyFlex courses will improve, as students in Winter 2023 were more likely to rate their overall experience as positive than students in all previous terms, and whether students would take another HyFlex course followed a similar pattern.

Teaching is an iterative practice requiring ongoing reflection and consultation from students and colleagues (e.g., other instructors, TLS staff) – it is an inherently collaborative profession, and it is hoped that conversations will continue around improvements to technologies, course design, and supports for instructors teaching HyFlex courses. TLS will continue to support HyFlex teaching by working to further simplify and automate the technology, offering HyFlex training and workshops, and arranging for **peer observations and mentorships** of HyFlex courses upon instructor requests.

## Classroom Technology and the Learning Experience

In terms of classroom technology, institutions were tasked with procuring equipment and outfitting classrooms on campus swiftly to allow for HyFlex instruction at a time when there were massive disruptions to the supply chain, leaving minimal time to explore the technology and train faculty before classes resumed on campus. Social distancing requirements had to be considered when selecting rooms for HyFlex instruction, meaning that in many cases, classrooms were not right sized for this instructional approach.

In the last few years alone, technologies for multi-access learning have improved immensely and these can address some of the most prominent technological concerns raised in this study (e.g., ceiling microphones allow online students to hear in-person questions, multi-view cameras allow students to see both the instructor and their peers, hands-free control of cameras reduce the time instructors spend engaging with the technology).

As we consider what is next for HyFlex instruction, we can leverage the improvements in technology and the lessons learned from those who shared their experiences in this study to realign with the goals Beatty described just prior to the pandemic ([Beatty, 2019](#)). As we move forward, **we should consider when HyFlex is the right approach**, including **when there is a need for participation in both modalities, when instruction can be done effectively for both** online and in-person students, and when HyFlex makes good sense.

## Is HyFlex worth it?

As we reflect on the HyFlex experiences of instructors and students at Carleton presented in this report, themes from the data inform how we might engage with the pedagogical and course design principles of HyFlex instruction moving forward. To this end, we consider the key findings from the HyFlex project in the context of our [Transforming University Education report](#), which envisions the future of teaching and learning to be **flexible, sustainable, collaborative, and empowering**.

HyFlex delivery creates **flexible** opportunities for student learning by providing learners with autonomy, responsibility, and choice in how they engage with their learning goals. As flexibility and choice increase for students – whether through HyFlex instruction or by other means – educators should **consider how the structures and systems built into their learning experiences can foster student success**. For example, a simple and intuitive course page, regular check-ins to gauge comprehension of key concepts (e.g., via polls), clear communication about expectations, and regular signposting of important dates can all support a clear path to success for learners in courses which have built-in flexibility.



If the value of HyFlex is to persist, we must also consider approaches to achieve a sustainable future for HyFlex instruction. This means thinking about and documenting course design approaches, templates, and activities suitable for Hyflex instruction. Ensuring educators have access to adequate **resources and supports for designing and implementing HyFlex learning experiences will promote a more equitable and sustainable way forward** for HyFlex instruction. The additional time it takes to design a good HyFlex learning experience is notable and is something TLS is ready to support.

Instructors and students desire a sense of community and a collaborative learning environment. There are many ways to achieve a sense of community, both in physical and online spaces. **Students want to connect with their instructors, their peers, and the course material in ways that are meaningful to their lives.** Through thoughtful and intentional design of assessments and activities, this can be achieved in any modality. Engaging students in both modalities during every synchronous class, promoting peer-to-peer learning (e.g., “peer pods” for studying and/or group work), and leveraging the diverse locations of learners to generate unique learning and assessment opportunities are some ways collaboration and critical skill-building can be supported for students in HyFlex courses.

One recurring finding in this study which speaks to an **empowering** future for HyFlex instruction was that **intentional and pedagogically grounded teaching approaches were repeatedly celebrated by learners.** Although managing an environment where learners attend in multiple modalities poses a challenge for some, educators should be empowered to know that with thoughtful considerations and the right supports in place, high-quality learning experiences are well-received by students accessing that learning experience in one or multiple modalities.

Reflecting on our vision for the future of teaching and learning, **it is clear that HyFlex instruction, like many other tools for teaching, has a place at Carleton.** Like any teaching approach, HyFlex is a better fit for certain learning experiences than others – several factors should be taken into consideration when deciding on a HyFlex delivery, including the instructor’s values and preferences, the learning goals, and the course context.

In addition to using HyFlex delivery for courses, there has been a growing interest in using this tool in different spaces at Carleton, including for **peer-assisted study sessions, staff training and workshops, and staff, faculty, and student meetings.**

As educational technologies and teaching tools are developed and iterated upon, these are natural moments for us to turn inward – and to one another – to reflect on what we are doing and why. Does it meet our goals? Does it meet students’ goals? Does it make sense to do this in this way, given the current context? If observed as opportunities to pause and reflect meaningfully, teaching tools like HyFlex can empower educators to be agile, reflective, and iterative in their teaching practice.

This report provides opportunities and practical strategies for instructors at Carleton to foster a more positive and inclusive experience in a multi-access environment. With the appropriate training, ongoing improvements to educational technologies, and continued support in course design and implementation, HyFlex is a teaching strategy that can be used very effectively in the right spaces.

As we move forward, it is the hope of TLS that our instructional community will continue to come together around teaching approaches and opportunities to build a distinguished culture of teaching excellence – together.



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