The Hyber-Flexible Course Design Model (HyFlex): A Pedagogical Strategy for Uncertain Times

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Le modèle de conception de cours hybride-flexible (HyFlex) : une stratégie pédagogique gagnante en ces temps d'incertitude

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Abstract

In the rush to save the school year during the outbreak of the COVID-19 pandemic, universities around the world had to react fast. This led to an emergency remote teaching that, in many cases, lacked the quality of online learning. Drawing on my concrete experience in graduate course design and facilitation using the hybrid-flexible course design model (HyFlex), also called "formation comodale," I discuss the great potential and possible pitfalls of this model as an educational strategy in the context of the pandemic and the inevitable digital transformation of educational institutions.

Keywords

COVID-19, Hybrid-Flexible course design model (HyFlex), higher education, instructional design, digital transformation, online teaching, formation comodale, pedagogical transformation, innovative pedagogical approach, equity

Résumé

Dans l'empressement pour sauver l'année scolaire durant l'éruption de la pandémie de COVID-19, les universités ont dû réagir rapidement. Cela a conduit à un enseignement à distance d'urgence qui, dans de nombreux cas, ne favorisait pas un apprentissage en ligne de qualité. En m'appuyant sur mon expérience concrète en conception et en facilitation de cours de deuxième cycle en utilisant le modèle de conception de cours hybride-flexible (HyFlex), aussi appelé « formation comodale », j'évoque le grand potentiel et les possibles écueils de ce modèle en tant que stratégie pédagogique dans le contexte de la pandémie et de l'inévitable transformation numérique des établissements d'enseignement.

Mots-clés

COVID-19, modèle de conception pédagogique Hybrid-Flexible (HyFlex), enseignement supérieur, design pédagogique, transformation numérique, enseignement en ligne, formation comodale, transformation pédagogique, approche pédagogique innovante, équité

Introduction

The COVID-19 pandemic has disrupted industries and businesses worldwide and forced their digital transformation at unprecedented speed (Evans, 2020). In order to thrive in the new normal, organizations have no choice but to become digital (Fitzpatrick et al., 2020). The education sector is no different. The outburst of the virus took professors and educational institutions by surprise. Despite the relentless efforts to overcome the lack of readiness for a crisis of this type by moving most courses online, almost 70% of the world's student population (UNESCO, 2020), especially those in vulnerable and disadvantaged communities, is impacted by the chaos it caused. Today, universities worldwide are facing an existential challenge. To survive, they need to guarantee quality and equitable education for their students no matter what. Meanwhile, international students, a huge source of income to most universities, are confined to their home countries (Bloom, 2020).

Emergency Remote Teaching: A First Response to Save the Winter and Summer Semesters

In the rush to save the school year during the outbreak of the COVID-19 pandemic, colleges and universities had to react fast to save the winter and summer semesters. This led to an emergency remote teaching that, in many cases, lacked the quality of online learning (Hodges et al., 2020). In a recent article in *La Presse*, Melançon (2020), a professor at the Université de Montréal talked about pedagogical confusion, professors who had to transform themselves into instructional designers, and students who became guinea pigs.

Professors spared no effort to do the impossible. Many stepped out of their comfort zone to learn about the technology with unheard-of speed. The issue was the assumption that once professors knew how to use the technology and its features, they would be able to teach online. In the hustle, face-to-face courses were transferred online instead of being transformed based on online pedagogical approaches. This resulted in unsatisfied students (Anderson, 2020), who not only demanded lower tuition fees (Zeidler, 2020) and tuition refunds (Dickler, 2020), but also petitioned against a virtual fall semester (Isselbacher & Su, 2020). The fall semester is at our doorstep and all eyes are on how professors and educational institutions will perform.

Preparing for the Fall 2020 and Winter 2021 Semesters

Many experts in viral immunology are optimistic about the power of a well-designed and thoroughly tested vaccine to eradicate COVID-19 (Stamataki, 2020). While scientists and companies "around the world are working on potential treatments and vaccines", and antiviral and preventive drugs (Radcliffe, 2020), some worry about the manufacturing shortage to meet the global demand (Rowland et al., 2020).

With these uncertainties, universities are considering several scenarios, including fully remote, hybrid or HyFlex courses (Maloney & Kim, 2020). Ivy League institutions are determined to start the fall semester on time (Ivy Coach, 2020). McGill University (2020) and Concordia University (Carr, 2020) informed their students that their fall semester will be online. Cambridge

University announced a full academic year 2020-2021 online (Scialom, 2020). Laval University promised its students a fall session that will live up to their aspirations (D'Amours & Lacroix, 2020).

Times of uncertainty require high flexibility and rapid adaptability. While many of my university and college colleagues strove to adapt their teaching to our new reality (Naffi et al., 2020) and maintain some sort of normality in order to enable their students to succeed in their courses during the pandemic, I made two minor adjustments. First, I gave my students some time to breathe and to take care of themselves and their loved ones. Second, I granted them extensions to their project deadlines. I had initially designed my classes on the basis of the Hyber-Flexible (HyFlex) course design model, and my students were already alternating, at their own convenience, among three modes of participation. In the emergent situation, with the new virus erupting and spreading and the campus closing locally, the online instructional mode of my course remained operational. The international students who were physically present in my classes and had to return to their home countries were able to complete the course with no hurdles. Based on my experience, I can confidently state that the HyFlex model might be the answer to the educational institutions' million-dollar question: how do we provide our students with a high-quality, equitable education regardless of what happens in the coming months?

The Hybrid-Flexible Model for Uncertain Times

The Hybrid-Flexible course design (HyFlex) was pioneered by Professor Brian J. Beatty (2019a) and his colleagues at San Francisco State University (SFSU). The SFSU Academic Senate Policy S16-264 defines HyFlex courses as "sessions that allow students to choose whether to attend classes face-to-face or online, synchronously or asynchronously" (Academic Policies Committee, 2019).

I was first introduced to the HyFlex model, also called formation comodale (Service de soutien à l'enseignement, s.d.), PeirceFit (**http://peirce.edu/fit**), Blendflex (Lieberman, 2018), and FlexLearning (The University of British Columbia, s.d.) when I started teaching at Laval University. The "formation comodale" was adopted by several professors there to ensure high levels of student inclusion. Readers must note that a big difference exists between a HyFlex course and a "blended synchronous" one in which professors teach the class face to face while online students watch passively.

Benefits and Challenges of Using the Model

Highly appreciated by students (Gobeil-Proulx, 2019), the Hybrid-Flexible model offers students flexibility in time and space and supports student-directed learning, with flexible approaches to participation and flexible learning paths (Beatty, 2019b). This is crucial in the context of a pandemic, where no information exists about when or whether we can return to the physical classrooms, and in what capacity. Further, it gives students the opportunity to develop technological and social skills to collaborate and exchange ideas with colleagues simultaneously in face-to-face and distance learning environments, synchronously and asynchronously. Mastering these skills is essential to compete in a world undergoing an accelerated digital transformation.

However, faculty members concerned with designing and facilitating effective and efficient learning experiences for their students using the HyFlex course design model face several challenges. As much as possible, they must respect four fundamental values of Hybrid-Flexible

Design (Beatty, 2019b). Beatty explains that these values are 1) learner choice—students can choose between participation modes; 2) equivalency—activities in all participation modes lead to equivalent but not necessarily equal learning outcomes; 3) reusability—all learning artifacts can be used by all students; and 4) accessibility—students have the technology skills for and equitable access to all participation modes. Faculty also have to manage a multimodal learning environment with three participation modes, deal with a heavier workload, ensure a reliable and productive student-instructor interaction, and assess students' learning progress regardless of the learning mode they choose (Beatty, 2019b).

Using the HyFlex Model in a Graduate Course

Twenty-six students were enrolled in my graduate course in educational technology at Laval University. They came from different backgrounds, including education, law, theology, accounting and nursing. Some lived in Quebec City, others were spread across the provinces of Quebec and Ontario, and one was in British Columbia. On average, on a weekly basis, eight to ten students were physically present in class (in-class group), 16 to 18 students participated online synchronously (synchronous group) and 3 to 4 students joined our discussions online asynchronously (asynchronous group). While the majority of students opted for one mode during most of the classes, a number of them altered between options based on their schedules.

My physical classroom was equipped with a Polycom video-conferencing system. The camera of this same system was also used for web conferencing and was connected via the Vaddio device, which allowed me to plug the whole USB into my laptop. The Vaddio equipment was equipped with two 360-degree overhead microphones hanging from the ceiling. The classroom was also equipped with 5 Mitsubishi projectors and an interactive projector at the front of the classroom. All this was controlled by a Crestron control system for switching and turning on and off audio/video signals. We used Adobe Connect as our web-conferencing platform and MonPortail, Laval University's learning management system, to create a course website.

I met students once a week for a 3-hour session. These sessions were recorded and then made accessible to students within 24 hours of each class. The asynchronous group watched these recordings at their own convenience and posted their questions in one of the course forums. The only issue with these recordings were the empty blanks when students were engaged in activities in breakout rooms. Adobe Connect only records the main meeting room.

In addition to the HyFlex course design model, I adopted the problem-based learning approach to a high degree of fidelity in the design of the course. This meant that lectures were rare and synchronous and asynchronous discussions were championed. The learning experience I designed for my students also focused on combining all three modes to create a community of learners who worked together and supported each other throughout the course to minimize the feeling of isolation that was anticipated for online learning. For instance, since one of the competencies I focus on in my courses is lifelong learning, I created an activity called "stay up to date" through which students had to develop autonomous learning skills. Students using different modes not only shared resources they found on social media relevant to innovative pedagogical practices that make use of digital technologies, they also critically discussed these practices and reflected together on ideas they could apply in designing their own learning experiences. To support this community, I followed several tips I detail in my blog post on how to facilitate online asynchronous learning through Facebook (Naffi, 2017).

Although I tested the technology the week prior to class, I still encountered a major audio problem during the first session. Online students frequently could not hear me, and when they did, the echo was unbearable. Since my course was originally offered online and I decided to switch it to a HyFlex design, a couple of online students shared some harsh complaints in the chat. As an educational technologist, I knew that panicking when technology fails only makes matters worse and increases anxiety. At the same time, the stakes were high, since I was a new faculty member teaching my first class at Laval University. Without hesitation I asked the teaching assistant to reassure the online group in chat mode while I figured out a plan B: As an exceptional measure, I disconnected the whole system and used my laptop to interact with the online group. Since it was an introductory class, the focus was on the course outline and projects, which helped to limit interactions. When students from the in-class group had questions or comments, I repeated them so that the online group could hear them through my laptop microphone. I projected my screen in class for the students to see the online group. However, the online group could only see me from my laptop camera.

The issue we faced during the first class turned out to be a hitch in the system and a problem with one of the microphones that was left in the ceiling by construction workers who were finalizing a job in the ventilation system. Both problems were solved by the Technopedagogy Service and Resource Centre before my second class. By then I had lost one third of the online students, out of a total of 32 who had registered initially. The following classes were a success. I added a second laptop to the classroom setting and directed its camera to the group of students in class. This enabled the online students to view the in-class group. In an ideal scenario, I would have the Owl 360 Camera, which automatically shifts the focus to different students in the classroom while highlighting them when they speak.

There are different approaches to designing and facilitating a HyFlex course. I opted to engage online students as if they were in the physical class and bring the in-class students online to work together with the online groups. In-class students used their devices in class and joined online students in the breakout rooms in Adobe Connect. Students' cameras were on unless there were technical or bandwidth issues or students felt uncomfortable with their cameras in active mode. My goal was to break the barriers between spaces and bring students together in this learning journey, regardless of where they were in space. While I expected to devote a considerable amount of time to engaging the asynchronous group in asynchronous discussions, to my great surprise, these discussions were triggered and facilitated organically by the in-class and online groups. Regrettably, I cannot state with certainty that this will be the new rule. The group of students I had this semester was exceptional. Most of them were autonomous and engaged. They set a model for highly inclusive behaviour, which motivated others to be proactive.

Because of the COVID-19 context, Laval University decided to abandon all course evaluations for the winter semester. To receive my students' formative feedback on my first HyFlex course, I used a Google form without collecting email addresses. The student participation was optional and anonymous. Sixty-three percent of the students completed the form (Naffi, s.d.) and the feedback was very positive.

While several students considered the first-class to be a failure, they appreciated the fact that they witnessed this failure and learned from the way I handled it. They also highlighted a couple of moments when the online group felt neglected, but they also recognized the strategies I employed to include all students during our live meetings, even those who were taking the course asynchronously. They all valued the three participation options and the flexibility they offered. They also appreciated their interactions with groups of students who used other participation

modes, and observed that a larger number of students were able to follow the classes and remain engaged every step of the way. Seeing their peers' faces and reading their facial expressions and their body language facilitated the engagement and reinforced the human connection and the sense of belonging. Most of all, students felt that when the pandemic erupted, they knew exactly where and how their course was taking place, what was expected of them and how to succeed. While the world was changing around them, the course format provided a sense of security—it was one less thing they had to adapt to. The extensions they were granted to complete their projects and to submit their ePortfolios brought a sense of relief.

Conclusion

The HyFlex course design model saved my winter 2020 semester. The flexibility inherent in the design allowed a quick and seamless shift to a format that worked in the pandemic context. It also allowed international students who had to return to their home countries to continue learning. However, this design involves certain challenges that need to be considered when it is first adopted. For instance, effective Internet connections and stable bandwidth are necessary for students to engage synchronously. Another challenge is the additional workload involved in designing and developing different learning paths and in supporting students and facilitating their learning regardless of the path they choose. For faculty members who adopt this approach, it is demanding. In the context of COVID-19, enforced physical distancing and extensive hygienic cleaning procedures for classrooms and equipment limit access to physical classrooms. In most cases, priority is given to courses and activities that are difficult to move online, such as areas of STEM that involve face-to-face activities because lab components are required, unless a virtual lab option exists.

Despite the challenges, the HyFlex model has a lot to offer. It increases access and allows for flexibility in time and space, and immediacy and social interactions when they are most useful. Students have control over their education because they can tailor their paths to their individual needs. As we transition from emergency remote teaching and into the inevitable long-term digital transformation of educational institutions, where adaptive, personalized, equitable, cheaper and more humane learning is expected (Scharfenberg, 2020), the HyFlex model should be considered.

Finally, here are my 5 top tips for designing a HyFlex course in a COVID-19 pandemic context:

1. Design your course as if it will be solely facilitated asynchronously. Once this is done, gradually add synchronous and in-class elements to create optional paths. Two things to remember: 1) the pandemic has augmented inequity and digital divide as never before. Not all students will be able to access classes synchronously, and no one should be penalized for failing to do this; and 2) the HyFlex course design model is a complex one, so give yourself permission to experiment the first time you venture into it and to learn from any unforeseen miscalculations;

2. Accept that technology is unreliable. It can break down. Make sure to alert the students and to reassure them as of day one that if this happens during a synchronous meeting you will figure out a plan B to make sure their learning experience is not affected by technical issues or lack of access;

3. Include asynchronous activities that will foster a sense of belonging to a community of learners. Discuss the difference between a conversation and a monologue in a forum, be

explicit when it comes to quality versus quantity in asynchronous discussions and explain the difference between engagement and last-minute posts;

4. Facilitating inclusive, equitable and quality learning through different modes requires effective and efficient collaboration, both between students and faculty, and among students themselves. Empower your students to become proactive, to have a voice, to take control of their learning experience, and make them aware of the importance of supporting those who struggle.

5. Above all, listen to your students and be attentive to their requirements and needs and to the solutions they might come up with. Their formative feedback could give you great insight on what works and what should be avoided, especially in uncertain times.

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