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Discussion Paper on Hybrid Teaching and Learning

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THE UNIVERSITY OF BRITISH COLUMBIA

Discussion Paper on Hybrid Teaching and Learning

Overview

Across the University of British Columbia, there has been a growing interest in exploring options to transition back to on-campus teaching within the constraints of evolving public health guidelines. The recent approval of vaccines to combat COVID-19 increases the likelihood that we will have opportunities to return to campus in the coming months. Whether all students and instructors will be able to return to campus is unclear: some may be able to return to campus while others are still unable to and need to attend remotely. UBC should aspire to serve all of its students, so we should consider methods that allow students who are able (and wish) to return to campus to do so, while ensuring we're also not disadvantaging students who are unable to return.

As such, it may be helpful for UBC Faculties and departments to consider instructional models that can support both on-campus and remote students simultaneously, accommodate individuals moving between on-campus and online contexts, or reduce the number of students who are physically in the classroom.

Five models for 'hybrid' instruction

Rather than present one 'best' model, this paper presents five hybrid instructional models for consideration. It is important to note that these models may be combined within a course or program to provide even more flexibility.

1. **Concurrent Hybrid:** On-campus and remote students attend class synchronously. Instruction and class interactions are livestreamed to allow two-way interaction.
2. **Asynchronous Hybrid:** On-campus instruction is recorded and made available for remote students to access asynchronously at another time (no livestreaming).
3. **Sequential Hybrid:** On-campus and remote students meet in separate, consecutive sessions where instruction is repeated. When students are not in a scheduled class meeting, they are completing asynchronous work online.
4. **Multi-Section Hybrid:** Online and on-campus instruction occur in separate sections, potentially taught by different instructors.
5. **Alternating Hybrid**: All students are required to attend some on-campus instruction but attend in smaller groups to comply with health guidelines. When not on campus, students engage in learning activities online.

Working assumptions

- While use of on-campus classrooms will need to conform with health guidelines (which may change at any time), this paper assumes the guidelines will permit some on-campus courses where students are able to interact with one another and the instructor.
- Most courses will need to accommodate remote students in some way. However, it is possible, particularly in small courses, that there may be only remote or only on-campus students. This will likely not be known in advance.

- Remote students will likely remain remote for the entire term. However, it is possible that remote students will return to the Lower Mainland during the term and request the option to attend in person. On-campus students may also need to switch to online instruction if they need to self-isolate, or if the university suspends on-campus courses.
- Assuming there will be both on-campus and remote students, UBC strives to provide equitable learning experiences for both groups.
- A limited number of classrooms at UBC are currently equipped to support in-room recording or concurrent interaction between on-campus and remote students. This limitation and general COVID-19 capacity constraints on our use of on-campus spaces will impact the scope of hybrid offerings, particularly in the short-term.
- Faculty and students would generally prefer to attend courses on campus, if given the choice.
- The models assume the instructor will be on campus, but several models could accommodate the instructor being online.

Five hybrid instructional models that accommodate remote and on-campus students

1. Concurrent Hybrid

In this model, on-campus and remote students attend class synchronously, as instruction and class interactions are livestreamed. The time and duration of class meetings are the same for all students. Students may engage with one another in synchronous face-to-face and/or online activities as well as asynchronous activities. Students may be granted the flexibility to alternate modes throughout the term, or may be required to choose a mode and generally be prohibited from changing during the term (except when medically necessary).

This model works well when:

- the goal is to provide a high level of flexibility that is adaptable throughout the term, since this model can be converted to a fully online or fully on-campus approach (pending space issues);
- the course instructor uses a predominantly lecture-based approach, or is skilled in engaging both on-campus and remote students concurrently;
- there is a belief that there is value in on-campus and remote students engaging with and learning from one another;
- students may need to switch between on-campus and remote engagement.

Considerations

- It may be challenging to find meeting times to accommodate students who are located in different time zones.
- Learning activities need to be carefully planned to be equally effective and engaging for both on-campus and remote students.
- Courses that are discussion based and/or utilize a high level of active learning pedagogies will require more support, including careful consideration of approach and supporting technology to ensure an equitable experience between remote and on-campus students.
- Mixing group discussion between on-campus and remote students presents technical challenges, primarily with audio quality.
- Faculty teaching courses using this model may find that activities across the two modalities take more time than expected.
- This model will require specialized technology in classrooms, particularly for courses that employ discussion or active learning approaches. Instructors will need to be trained and supported in managing the technical setup for lectures.
- Faculty new to this model may find it challenging to simultaneously manage both the on-campus and online activities.

Examples at UBC

- UBC first-year law — students had the option to attend on campus for one week on a 3-week rotation. All students who were not in the classroom joined the class online. Although as many as 15 students can attend in person, most commonly between 4 and 10 students attended in person and 30 to 35 students attended online.

- ANTH 473 (UBCO)/FNEL 480C (UBCV) — students were located on both campuses, with the instructor at UBCO and a teaching assistant at UBCV. While Okanagan and Vancouver students each met concurrently in physical classrooms, the instructor lectured from UBCO with the lecture livestreamed to UBCV. UBCV students reported feeling “a little bit left out, or separate, from the overall class experience” and indicated they did not feel like they were “equal stakeholders” with the UBCO students who met in-person with the instructor.
- Midwifery undergraduate program — first-year courses included both on-campus students and remote students who attended via Zoom. Years 2 to 4 used the Alternating Hybrid model.

2. Asynchronous Hybrid

Instruction occurs on campus during normally-scheduled class time, and is recorded and made available to remote students to view asynchronously (synchronous online attendance is not required and may not be available). Student interaction can occur in-person for on-campus students and online for remote students, or remotely for all students.

This model works well when:

- the course is predominantly lecture-based;
- students are in time zones where scheduled class times do not align well with their local schedules, (since there is no requirement for remote students to attend synchronous lectures).
- Additionally, recordings can benefit all students (regardless of location) who want to review or re-watch a class to help them learn difficult or complex materials, or who have accessibility needs.

Considerations

- Faculty employing active learning methods will likely need to plan separate activities for on-campus and remote students. It is important to ensure learning experiences will allow both on-campus and remote students to achieve the same learning goals.
- If there is student interaction/active learning in the classroom, remote students become passive observers (if interaction is recorded), without the same learning opportunities as on-campus peers. Alternative activities with similar learning objectives should be planned for remote students.
- Anecdotal feedback indicates on-campus students may stop attending class over time if given the opportunity to attend online, particularly when courses are lecture based.

Examples at UBC

- DHYG 401: Oral Epidemiology — this course included three review/Q&A sessions, where the on-campus session was recorded and made available for both remote and on-campus students to watch afterwards. Remote students were offered the opportunity to ask questions in advance. The sessions were recorded using a low-cost option (a cell phone on a tripod with an inexpensive lavalier microphone). Feedback from both remote and on-campus students was positive, and students appreciated the opportunity to review the recording as many times as needed for their learning.

3. Sequential Hybrid

On-campus and remote students meet in separate, consecutive sessions, where instruction is repeated. When students are not in a scheduled class meeting, they are completing asynchronous work online.

For example, in a course that would normally meet twice a week on Tuesday and Thursday, the students could be split into an on-campus group that would meet every Tuesday, and a remote group that meets every Thursday. The instructor would repeat instruction for the second group, so would be teaching the same number of sessions overall as previously.

This model works well when:

- the course already has substantial online resources and activities developed, or has previously used a blended or flipped approach;
- instructors are concerned about the challenge of simultaneously teaching both on-campus and remote students, and would prefer to focus on one mode at a time;
- reducing the number of students in each synchronous session (i.e., dividing on-campus and remote students rather than having both groups participate at the same time) provides the opportunity for increased discussion and interaction during these sessions.

Considerations

- Courses not already employing a blended or flipped model may require a significant amount of work in redesign and development of materials.
- While similar approaches may be used for both the on-campus and online meetings, extra preparation time may be needed to design learning activities and instruction specifically tailored to each modality.
- Because this model reduces the number of class meetings, students must have clear guidelines and expectations for learning when they are not in a synchronous course with the instructor.
- This model is similar to the Multi-Section Hybrid model, as it creates two subsections of the course for synchronous meetings. However, this model reduces the overall number of class meetings for students (while not reducing them for the instructor).
- Some courses at UBC that already use a blended or flipped approach could possibly be transitioned to this model without significant redesign.

Examples at UBC

- GEOG 520: Themes and Interpretive Issues in Modern Human Geography — students were divided into on-campus and online cohorts, with each meeting synchronously with the instructor on alternating weeks. During the week, one cohort met with the instructor, while the other cohort completed reading and journaling activities independently. The format was motivated by the preference for a face-to-face seminar experience and desire to create this for as many students as possible, while still accommodating those students who could not come to campus due to travel restrictions or health concerns.
- CLST 308: Roman Law — while this course did not offer on-campus instruction this term, remote students were divided into two cohorts. Each met once a week in a synchronous online meeting (in future terms one of these could potentially be converted to on-campus), and a third ‘meeting’ was reserved for open office hours. The course included a mix of online recorded materials, independent activities, discussions and collaborative group projects students complete online.

4. Multi-Section Hybrid

In courses with multiple sections, specific sections can be dedicated to either remote or on-campus instruction. Students could be provided with an option to enroll based on the mode they prefer, or given a choice of section based upon their location on campus or remote.

This model works well when:

- there are multiple sections of a course offered in the same term;
- enrolment caps in the sections are flexible (as demand for on-campus and online sections will not be known in advance);
- in the event students need to move from an on-campus section to an online one, it is helpful if there is some standardization or coordination of content and assessments across sections.

Considerations

- This model is already widely implemented at UBC. However, this model cannot be applied to single-section courses. For those courses, the Sequential Hybrid model may be more appropriate.
- If on-campus students elect to register for online sections, some remote students may be unable to find open online sections.
- Careful consideration will need to be given to when and if students will be permitted to move from an on-campus to online section (or vice-versa), as there are implications for scheduling, student assessment and instructor workload. Further, UBC's administrative systems do not currently support this practice.

Examples at UBC

- Many courses at UBC offer both 'distance education' and on-campus sections. In some instances, content, activities and assessments are similar or are shared across both approaches. Selected courses include: DHYG 405: Oral Microbiology and Immunology; ENGL 366: Twentieth-Century Literature; EOSC 114: The Catastrophic Earth: Natural Disasters; FNH 250 Nutrition Concepts and Controversies; JAPN 100: Beginning Japanese.
- IHHS 409: Is the Past Present? International Indigenous Experiences of Colonization — this course (originally run in 2010) was a partnership between Canadian and Australian institutions and numerous community partners to engage students in the process of understanding Indigenous people's experiences of colonization and develop advocacy skills and knowledge.

5. Alternating Hybrid

This model assumes all students in the course will need to be on campus at some point in the term, and presents a way to reduce class size to meet health and safety requirements. The model includes online learning (either synchronous or asynchronous), but also rotates students in groups through on-campus instruction. The on-campus meetings may be regular (alternating by meeting or week), or connected to specific course goals or tasks where on-campus attendance is required.

This model works well when:

- used for courses that require high levels of interaction, direct observation, or access to specialized equipment that can't be replicated online (e.g., performance-based courses, upper-level labs, health sciences);
- students can access campus, and need limited access to on-campus resources or limited direct contact with instructors.

Considerations

- This model is similar to the Sequential Hybrid model, but requires all students to be able to access campus at some point in the term. It does not accommodate remote students.
- The model may be prohibitively challenging in large enrolment courses, due to the number of groups that would be required to rotate all students through on-campus instruction.

Examples at UBC

- Midwifery year 2–4 courses — because students are distributed across B.C. for clinical placements, courses in years 2 to 4 of the midwifery program are predominantly online, with students returning to campus for clinical skills labs and testing.
- Occupational Therapy: Occupation in Practice courses — while these courses were taught online this term, students came to campus for hands-on learning components that could not be replicated online.

Example external to UBC

- Vancouver School District — students in grades 8 to 12 attend a course daily but overall class sizes are reduced by approximately 50 per cent, as half of the students attend each week while the other half completes work online. Groups alternate either weekly or bi-weekly, but all students have some in-person interaction with the instructor.

General considerations

Resource implications of moving to hybrid and multi-access courses

- **For instructors, TAs, and staff**: hybrid models will likely increase the workload of all stakeholders; designing, building and teaching hybrid courses will require additional institutional resources.
- **Facilities**: because hybrid models include on-campus instruction, careful consideration should be given to classroom capacity and technical capabilities. Additional classrooms at UBC would need to be upgraded to support a range of hybrid models
- **Learning ecosystem**: classroom AV technology in isolation cannot meet all of the requirements of these hybrid models, and will need to be paired effectively with appropriate software systems including but not limited to; Zoom, Canvas, Kaltura, Collaborate Ultra, Microsoft Teams.
- **Accessibility**: regardless of instructional approach, the accessibility needs of students and instructors must be assessed, and barriers to equitable engagement reduced or eliminated (e.g., livestream captions or sign language translation for deaf or hard of hearing students). This may be more challenging for hybrid instruction as accessibility needs may differ amongst students in each modality.

Considerations for implementing hybrid teaching and learning

For those making decisions about instructional models, important considerations include:

Student learning and experience

- Within a course, teaching students who are split between on campus and remote automatically creates two groups that can easily become, or be perceived as, unequal. Since on-campus students have direct access to the course instructor and physical university resources, it is important to ensure the remote students aren't disadvantaged by their distance.
  - This may be particularly true for hands-on learning, where on-campus students may have access to specialized equipment, labs, or be able to engage more directly with specialists. Attempts should be made to find alternative opportunities for remote students that provide equitable experiences.
- The instructional model used will impact the ways in which students can engage with the instructor and their peers. Attention must be given to the overall student learning experience, including the strength and vitality of the relationships they are able to form with their peers, and how valued characteristics of in-person interactions that support learning and community can be achieved.
- Some models may impact student workload (e.g., some models expect students to do more self-directed learning), or inadvertently produce a higher workload for remote students (particularly given the cognitive load of regular Zoom sessions at perhaps unusual hours for their location). Faculty should pay careful attention to workload during both course planning and while the course is running. Use of workload estimators (such as the UBCO Student Course Time Estimator) or informal conversations with students about workload is recommended.
- Students have reported challenges with a lack of consistency in online courses. If academic units choose to use different instructional models, this may cause substantial challenges for students in terms of tracking when and how courses meet, and understanding course expectations.

- Although not conclusive, both research and anecdotal evidence suggests that when students are permitted to choose whether to attend on campus or online, on-campus attendance may decrease, particularly when courses are lecture based.
- Some instructional models may require students to use new technologies, or use existing technologies in new ways. When possible, instructors are advised to include opportunities for students to use the technologies employed in the class in an ungraded environment or in assignments with minimal marks.
- Expectations regarding personal equipment should be made clear to students. If on-campus students are expected to bring laptops to engage with remote students, this should be made clear, and an alternative made available to students who do not own laptops.
- Units need to carefully consider whether they will require remote students to keep their cameras on during class meetings, or if they will project/display the on-campus class to remote students. There could be bandwidth, quality, and privacy issues with either of these approaches.
- Consider whether students will be offered a choice in how they attend courses. While there is clearly a need to accommodate students who have medical issues or are unable to return to the Lower Mainland, there is concern that allowing students to indiscriminately move between modes may make planning for individual course meetings especially challenging for the instructor (and for space planning).

Faculty experience and workload

- Some instructional models may be inconsistent with faculty teaching philosophy and practices. Discussion should occur around instructional models and how various teaching practices can be implemented without substantially increasing workload. Support for both the planning and implementation of new instructional models should be widely available.
- Teaching both on-campus and remote students will likely result in an increase to faculty workload (in some cases, faculty have referred to this as 'double teaching'). Units adopting hybrid teaching models should ensure that faculty workload is not substantially increased, or if it is, that that work is compensated.
  - Communication should be clear that there is not an intention of increasing faculty workload, and include information on how such an increase will be avoided and what support is available to ensure this. Individual faculty members will likely have useful suggestions on how instruction can be structured to avoid significant increases in workload for individual faculty and TAs and improve student learning, so consultation will be key in the planning and delivery of these models.
- Faculty and students may have questions around the accessibility and inclusivity of the instructional models used. Accessibility may be challenging for some models without increasing resources. Early consultation with the Centre for Accessibility and the Equity and Inclusion Office may be helpful in proactively addressing issues that could emerge.
- Faculty may require support with technology required for some instructional models (e.g., video conferencing for synchronous sessions, lecture capture for asynchronous). Support for both learning the technology and implementing it in courses should be made available. It is important to discuss capacity to provide this support with instructional support staff and central units in advance of decision making.
- If there is a possibility of intensified health restrictions, "it is critical to make flexible plans and to keep remote instruction (including active learning activities outside of class) as a central part of your course design" (CMU, 2020) to ensure that courses can pivot back to fully remote teaching.
- Plans should be in place should a course instructor need to self-isolate or be otherwise unable to teach in person. Will the instructor continue to teach, moving to online, or will another instructor be able to step in? Will on-campus students and TAs be expected to continue to meet in the classroom? Is there classroom equipment to support a remote instructor with an on-campus class?

Teaching assistants

- Clear expectations should be set for teaching assistants, particularly if they are supporting both on-campus and remote students. Because hybrid instructional models are new for many in the UBC community, they may lead to a higher workload. Faculty will need to discuss expectations with teaching assistants and keep open lines of communication so concerns can be addressed as they emerge.
- If teaching assistants are supporting synchronous instruction, particularly with active learning components, it may be helpful to assign different teaching assistants to on-campus and remote students — for both consistency and to help reduce the support load for teaching assistants.
- Departments may find it helpful to hire and train a subset of teaching assistants or other graduate students to provide specialized technical assistance across multiple courses, rather than expecting all teaching assistants to learn these skills.
- Teaching assistants may be able to assist faculty with synchronous classes (both with equipment and moderating online engagement). However, teaching assistants will need to have opportunities to access training around the skills they are being asked to use to support teaching in hybrid contexts.

Support providers

- Units and individuals providing support to faculty and students may face resourcing challenges, as instructional models require support for both on-campus and remote students, and multiple instructional modes. Many support units are already facing challenges supporting remote instruction. Adding hybrid models will add to these challenges and create additional strain on current support resources.
- Support should be available during instructional hours for faculty and students, which in a hybrid model may extend beyond the normal business hours of the university. Support models will need to be redefined and resourced, when possible, to be available when faculty and students need support. Expanding support hours will require new resources.
- Some support providers, for example libraries, have incurred increased costs associated with licensing online resources or providing support. In some cases, these costs have been mitigated by reductions to on-campus support or resources. Moving to a model where students will be both on campus and remote will require support providers to incur expenses for both instances. There may be areas where the financial, and perhaps personnel, costs are too high to provide both.

Classroom space

- There are clear challenges in determining the space required for hybrid instruction. While the current course registration system includes enrolment caps, other than designating on-campus and online course sections, there isn't currently a way to indicate whether students are enrolled as on-campus or remote learners, which is required to determine room capacity for scheduling. This could be further complicated if students change their location during the term.
- While an initial analysis of UBC general teaching space has been done, and while there are some UBC classroom spaces capable of supporting hybrid approaches, more work is needed to consider the nuances of course design/requirements when assigning spaces or investing in upgrades to spaces.
- If the COVID-19 situation is a lingering factor, there may be safety concerns related to returning to campus — particularly from individuals who may be at risk, or faculty and staff who may not have the option to continue to work remotely. Conversely, there may be individuals who feel safety precautions, such as wearing a mask, make teaching and learning overly complex. There may also be accessibility issues relating to these, for example, students who read lips will face challenges if instructors are expected to wear masks while teaching.

- Units will need to determine whether they will hold final exams online, on-campus or in both environments. The way on-campus testing has been handled in the past, particularly for multi-section courses, may be challenging to accommodate if there are still occupancy restrictions in place. Whereas, allowing students to choose where they would prefer to take their exams (online or on campus) may lead to concerns about consistency and fairness.

Selected resources

Reflections on Building and then Teaching in a HyFlex Classroom at Allard Hall — UBC Allard School of Law

A blog post by two UBC law instructors, Douglas C. Harris and Samuel Beswick, who have experimented teaching with the hybrid flexible (HyFlex) classroom at Allard Hall. They share their challenges, lessons learned, and how technology has enabled them to build a HyFlex classroom — a space that feels much like their pre-pandemic classroom.

The Landscape of Merging Modalities — Educause

Dr. Valerie Irvine (University of Victoria) provides a historical overview of online and blended approaches to help clarify confusion around the naming of different approaches. She provides a useful framework to help educators understand the characteristics of student and instructor interaction across various modalities.

Active Learning in Hybrid and Physically Distanced Classrooms — Agile Learning blog

Recognizing the challenges instructors will face engaging students in remote, hybrid and physically distanced in-person classes, this article presents a collection of concrete strategies that instructors can implement to actively engage students. The strategies focus on student centred approaches and discuss considerations for how each approach can be implemented effectively across modalities.

Beatty, B. J. (2019). *Hybrid-Flexible Course Design (1st ed.)*. EdTech Books

This open textbook provides an overview of the HyFlex approach along with information about the design and development process. Case studies from institutions that have implemented HyFlex are also included.

Configure your Hybrid Courses — Carnegie Mellon University

This paper presents six models for hybrid learning. For each model, the paper notes when the model is most appropriate and comments on its pros and cons of the models.

Academic Models for 2020–2021 (PDF) — Clemson University

This infographic provides an overview of several hybrid models, based around a blended course design where the amount of seat time is reduced and a significant portion of the instruction occurs online. There is a diagram illustrating each model along with information about how they are delivered, how they might change teaching practices, and the pros and cons of each.