Teaching Strategies for Varying Bandwidth

Last updated October, 2020

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As much of the teaching and learning at UBC is now taking place online, it is important to consider that students will have varying levels of bandwidth, or internet speed, which can significantly affect how they interact with course meetings and materials. While UBC's Keep Learning website outlines the suggested technical requirements and internet connectivity for accessing UBC's learning technologies, the reality is that students' access will vary. As noted in the Guiding Principles for Fall 2020 Courses[1] (Principle 3), it is important to "accommodate the reality that access to technology, including hardware and internet access, will vary across students in your courses."

Below are suggestions compiled from various resources at UBC for designing and teaching online courses in ways that can support more equitable access amongst students studying from various locations.

Compassion, care, and flexibility

The first of the Guiding Principles for Fall 2020 Courses is also a good foundation here: "Approach course adaptation decisions with a commitment to compassion and care for everyone involved." This can include approaching course design and teaching with flexibility and offering multiple options.
Students who need to purchase technology for their courses can access financial assistance and discounts:

- Recognize that online students may be facing challenges with technology, working from far-off time zones, or competing priorities. Include flexibility in your online course to help address these challenges. Consider flexible activities and flexible assessments (The CTLT's Online Teaching Program, Module 7)[2]

- Try to allow different ways in which students can access and engage with the course. Also, adopt flexible assessment mechanisms to ensure that you assess student learning, not their access or lack thereof. Consider flexible deadlines and offer alternative assignments for students to choose from — for example, for group work you may give students a choice between an online chat-room style discussion or collaborating on a OneDrive document. (Equity, Diversity and Inclusion (EDI) in Online Teaching (PDF))[3]

Technology requirements and student needs

How can I address general technical difficulties students are facing?

- In your syllabus, be explicit about the technological requirements of the course, including hardware, software, applications, and alternative/support options. Offer accommodations, such as recordings, for students whose technology fails. Consider directing students to the "Setting Up" page on the Keep Learning site. (Guiding Principles for Fall 2020 courses, Principle 3)

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[1] https://keepteaching.ubc.ca

[2] https://canvas.ubc.ca/courses/52088/pages/7-dot-0-introduction?module_item_id=1884341

3 https://ctlt-inclusiveteaching.sites.olt.ubc.ca/files/2020/04/Equity-Diversity-Inclusion-Online-Teaching.pdf

- Invite students to tell you if their technology/network connections are getting in the way of their ability to participate in the course so you can work with them on solutions. Students can also reach out to their faculty advising office or Enrolment Services advisor to discuss access to required technology, including bursaries and other work-arounds. By advertising these options, students can avoid disclosing to you if they are not comfortable doing so. (Guiding Principles for Fall 2020 courses, Principle 3)

- If you need to gauge students' varying access to technologies and their needs for support, you can conduct an anonymous survey by using a tool such as Qualtrics. In addition, create multiple ways (e.g., email, phone, or virtual office hours) in which students can contact you with their needs. At the same time, be aware that some students may feel vulnerable to disclose their lack of access to technologies and request individual accommodations. It is therefore best to assume that some of your students do not have access to digital devices and/or reliable internet and design your course with flexibility in how students access the course. (EDI in Online Teaching)

Balance synchronous and asynchronous course activities

- Ideally, strive for a mix of both asynchronous and synchronous activities each week, structured in a reliable pattern. Choose a mix that makes the most sense for you and your students. Consider the activities that are necessary to meet learning outcomes rather than focusing on filling the allotted time. (Guiding Principles number 4)

- Consider asynchronous approaches that do not require students to be dialed in at the same time. Many students may not be physically located in the same time zone, and working with a fixed synchronous schedule can be challenging for students. Some of them might have busy schedules and/or caregiving responsibilities, others may not be able to freely access the internet or a quiet room. (EDI in Online Teaching)

- Use synchronous lectures when they are important to student learning goals and cannot be replaced with asynchronous content. Consider the following questions:
  - What content from a standard lecture is best delivered by a synchronous online lecture?
  - What content is foundational/background knowledge or revision that might be better shifted to pre-readings or other activities?
  - What content might be better consolidated as post-lecture readings, extension materials, self-paced formative activities, low stakes assessments, small group discussions, or facilitated seminars and Q&A sessions? (Online Teaching Program Module 5)[4]

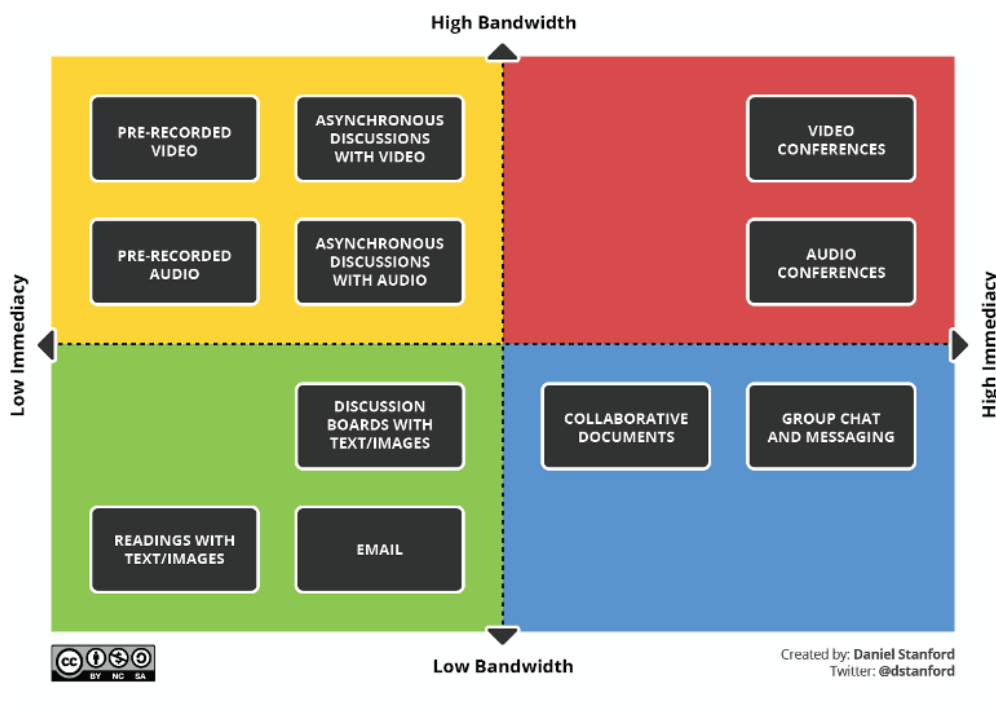[4] *https://canvas.ubc.ca/courses/52088/pages/5-dot-0-introduction?module_item_id=1880846*

Simplicity and low bandwidth options

Online Teaching Program Module 4:

- **Alignment:** When you're creating an activity, it is important to ask yourself, "How does this activity align with the learning goals and graded assessments? What is the purpose and what does it accomplish?" It is also helpful to be explicit in explaining to students what the purpose of each activity and assignment is to help students make connections between activities and learning goals.

- **Simplicity:** While integrating a range of learning activities is important to facilitate student learning in online courses, it is also important to be mindful of student time and attention and avoid overloading them with too many activities or that require too high bandwidth.

- **Balance technology and need:** In design of your course activities, balance the needs and benefits of online communication and collaboration with the additional effort it will require on everyone's part. Learning new technologies and procedures might be counterproductive, particularly in the short term, unless there is clear benefit.

EDI in online teaching:

- The graphic below, from Videoconferencing alternatives: How low bandwidth teaching will save us all[5] by Daniel Stanford, is a useful tool to balance high vs. low bandwidth and immediacy. This post presents a compelling case for considering flexible tools with lower-bandwidth requirements (i.e., the green and blue boxes).

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[5] https://www.iddblog.org/videoconferencing-alternatives-how-low-bandwidth-teaching-will-save-us-all