Asynchronous vs. Synchronous

What does it all mean?

Asynchronous- students and instructors interact with the content (and one another) at different times and from different locations.

Synchronous- students and instructors interact with the content (and one another) at the same time but from different locations.

Western's Approach and Priorities

Western as a whole is being encouraged to use *asynchronous* means of delivering content for courses. There are a few reasons for this:

1. OWL capacity and bandwidth issues. Streaming live lectures can drain a lot of the resources on OWL. If every course on campus was to do it we may run into bandwidth issues.
2. Engagement. It is hard for students to stay engaged while listening to a 1-2 hour zoom video and/or blackboard collaborate video. By doing it asynchronously, students can go through at their own time and own pace.
3. Equity. Some students may not be able to participate in synchronous sessions due to schedule conflicts, time zones (i.e. a student in China, for example), or due to other home obligations. By encouraging asynchronous content delivery, students can access the material when they have time to dedicate to it.

Best Practices

1. The best approach is to use both asynchronous and synchronous practices *purposefully*. It is also important to clearly communicate with students what is expected and this should all be outlined on OWL.
2. When using synchronous sessions, make them interactive; allow students to interact with both you and their peers. Use polling questions, breakout groups, or discussion to keep students engaged.
3. When using synchronous sessions, break-up instructor-delivered content/instructions at least every 10 minutes with some sort of question, prompt, or breakout activity.
4. Ensure that you are not doing an "information dump" and are simply giving all sorts of content to students. Students rely on you, their instructor, to help them navigate the salient points of the content and how to focus and prioritize their time.
5. When posting asynchronous content, it is helpful to give students a timeframe for how long it should take them to complete the task (i.e. a reading should likely take 1.5 hours, a video might take 5 minutes). Keep in mind that students will

require more time as they do not have your expert lens and may struggle with some scientific jargon.

Asynchronous Approaches

Consider using an asynchronous approach for the following circumstances:

1. Lectures or podcasts *longer than 20 minutes*. Sitting through a traditional lecture on Zoom for 50 minutes is not a good use of students' time or a good use of synchronous learning. It is challenging for students (and instructors!) to remain engaged for that length of time. Asynchronous learning for content delivery allows students to digest it at their own pace.
2. Readings. Students can prepare for an in-class synchronous session by doing a reading asynchronously, on their own time.
3. Demonstrations and videos. If you have practice problems, it's a great idea to go through one of these problems by providing students with a video. This way, they can pause, rewind, and go-back to see how you worked through the problem.
4. It is easiest if quizzes and assignments are done asynchronously. OWL will have a limited capacity for large enrollment courses all using the tests/quizzes button at the same time and this may result in technical issues for students.
5. Analytical group work. Students could work on an assignment or problem set on their own time using a collaborative platform like Google docs or Microsoft Teams. This way, students are still able to engage with their peers but are still able to have flexibility with respect to their schedule.

Benefits:

1. Allows students to learn at their own pace. Students can go through and digest the content and have time to think before posting to a discussion group.
2. Allows flexibility for the students' schedule. Students can access the course content and pursue interactions with their peers/instructors when it is best for their schedule.
3. Students can access asynchronous material multiple times and re-watch/re-read it to deepen their learning.
4. More equitable- allows all students the opportunity to ask questions, whereas only a few individuals will be able to ask questions during a synchronous session.

Drawbacks:

1. Students might feel less connected to their instructor/peers when they can't see them.
2. Students might put off asynchronous learning because they can always "do it later"
3. Students need to have good time management skills in order to plan and set aside the time for the session.
4. Requires a higher level of commitment and independent learning skills

Synchronous Approaches

Consider using a synchronous approach for the following circumstances:

1. Synchronous sessions allow you to interact with your students, and can also allow for student-student interactions in real-time.
2. Synchronous sessions can be great to check-in with students and to clarify misunderstandings (use it as a "tutorial" session)
3. Group presentations can be an effective use of synchronous time, and this can be done through centrally-supported online tools.
4. Focused activities with real-time interaction, such as a case study, would work very well synchronously.
5. Office hours. It's important that students feel that there is a "real person" on the other side of the course. Having virtual office hours can help make this a reality.

Benefits:

1. Students can ask questions in real-time.
2. The instructor can assess the students' understanding and adjust the session if needed.
3. Students feel an increased sense of the instructor "being there".
4. Instructors can run break-out groups.
5. Can allow for live chats or office hours.

Drawbacks:

1. Students could run into scheduling, technical, or time zone issues.
2. It can be more difficult to fulfill accessibility requirements during a live session.

Here is an example of a weekly lesson from a fully online course. Synchronous components are in blue; asynchronous components are in green. The activities below can all be facilitated through OWL.

 Readings	 Videos	 Tutorial	 Office Hours
1.Read the article from Arumugam and colleagues (1.5 hours) Arumugam, M., Raes, J., Pelletier, E., Le Paslier, D., Yamada, T., Mende, D. R., ... & Bertalan, M. (2011). Enterotypes of the human gut microbiome. nature, 473(7346), 174-180. 2. After your reading, post in the discussion forum about whether or not you agree with the evidence supporting Figure 4.	Watch the following two short videos that I created on symbionts and pathobionts (10 minutes each)	Sign-in to Blackboard Collaborate for our weekly case study at 10:30 am on Tuesday. We will be working in groups to go through the gut-brain connection. (50 minutes)	Sign-up for one of my virtual office hour time slots if you would like to clarify course content and/or get additional feedback on Assignment #2.

References:

Centre for Teaching and Learning, Concordia University, 2020. “Synchronous and Asynchronous Learning”. Retrieved June 17, 2020 from: concordia.ca/ctl.html

University of Waterloo, 2020. “Synchronous and Asynchronous Online Learning”. Retrieved June 25, 2020 from: https://uwaterloo.ca/keep-learning/strategies-remote-teaching/synchronous-vs-asynchronous-online-learning