The onset of the current COVID-19 crisis has forced us to quickly adapt to emergency remote teaching. With the uncertainty of when things may return to “normal”, it is prudent to consider improving how our courses function online and to consider changes to help our students thrive and learn in this new reality. This document represents my opinions of what may help in our specific context. It does not represent the “state of the art” for online teaching. It is a compilation of ruminations, observations, and insights into possible course improvements here in Applied Science at UBC that can be achieved with reasonable effort. I am being careful not to suggest changes that are too time or effort impractical, especially for our larger courses.

I will highlight three areas of course improvements that I think can help enhance how your courses will function online. In each area, I will suggest some simple strategies to improve your courses. All improvements will take some effort, but I will try to focus on improvements that are simpler and will add permanent value and continue to function well even when teaching returns to face-to-face (F2F).

The three major areas for improving how your course functions online that I will highlight are:

- Increasing Social Presence
- Improving the Clarity of Instruction
- Fostering Interaction

**Increasing Social Presence**

Moving online makes it harder for teachers and students to connect. When graduating students reflect on their educational experiences, their stories often describe “that teacher” that made such a difference. An important part is this experience often is that connection to a faculty member that cares about them. This kind of connection can be more difficult to create online, but there are a number of small strategies to foster the growth of these kinds of connections with your students.

**First**, make sure you and your students get to know each other a little bit. Spend some time at beginning of any course and especially an online class introducing yourself, acknowledging the current events, and showing that you and your students are experiencing something together both inside and outside the course. Reminding students of our shared experience can be a powerful way to connect with them. This is a conversation between people. It is OK and even important that your humanity and shared experiences be visible to students. Maybe, you can start every synchronous online class with a little current events highlighting course, school, or world news.

**Second**, increase your social presence with your students by using synchronous online tools like Collaborate™ or Zoom™. A great way to use these tools is to hold online office hours. Office hours transfer quite well to the online environment. Suddenly students don’t need to trek out to campus to ask that question; they can easily get help at a distance. All you need to do is periodically remind students about your online Office Hours - where and when you will be available online and then get ready for their questions. You can open the online meeting room (Collaborate or Zoom) at the specified time, continue with your other work, and periodically
monitor to see if any students have arrived online. Some teachers have a policy that without prior arrangement they will be available only for the first 15 or 20 minutes of office hours; after that time, if no one is at office hours and no one has booked time, they will sign-off.

**Third**, you can make greater use the Announcement function in Canvas™. This can turn your course delivery into more of an ongoing conversation, rather than a broadcast.

An example might be if you were to be teaching an Economics course, you might start with a pre-class announcement posted in Canvas – “I am looking forward to today’s class where we will discuss the effects of subsidies and tariffs on local and international trade. Here is an excellent article in this issue of the Economist that will help you frame today’s discussion”. And following the class – “Thanks for coming today. I mentioned this FAO report – here is a link to the summary. It is worth reading the section on the effect of agriculture subsidies on partner trading patterns in the EU.”

**Recent Announcements**

*Today’s Class on Subsidies and Tariffs - a short pre-reading*

I am looking forward to today’s class where we will di...  

*Posted on:  Apr 22, 2020 at 9:57am*

You can re-use these same announcements next year. The collection of announcements can be easily copied to next year’s Canvas course shell and shared with students when timing is appropriate next year. This will add permanent value to your course, whether delivered online or F2F.

**Improving the Clarity of Instruction**

Making your instruction more clear is always a good idea, but it is especially important online. Online, students have very different opportunities to ask clarifying questions during instruction and can be reluctant during live online classes to ask questions and seek these clarifications on assignment instructions. Your goal should be to provide students with greater clarity. There are some simple opportunities at the course, class, and assignment level to increase the clarity of your instruction.

**First, at the course level**, spend some time reviewing your course syllabus to ensure it uses simple, straightforward language that makes your expectations clear and provides comprehensive information about course logistics and assignments. Provide a detailed section on online examination procedures and advice on computer requirements. Making things more clear at the course start can reduce student anxiety and push-back later in course. When you are organizing your course website, spend some additional time carefully naming and organizing your files to help students more easily find their way. Use a consistent naming convention that helps people understand where each file fits in the hierarchy and structure of the course. Organize the course site so it helps students build the knowledge structures to deeply learn the course materials. You likely won’t have the same opportunities to answer student questions, so the course site organization needs to do some of the speaking for you.
Second, at the assignment level, try to make your assignment instructions more detailed than you might normally. Students will be interacting with you less and likely asking fewer questions for clarification on assignment details. Spend some time to add detail to the instruction so they can better stand alone, with fewer in-class clarifications. Another great way to add clarity to any assignment is to create a rubric.

A rubric is a set of criteria for grading assignments. Rubrics are often presented in table format and can be used when marking, and can also be used by students when planning and completing their work. Rubrics usually contain multiple categories (rows) and levels of achievement (columns), and often an overall scoring strategy. The categories (rows) are different attributes that should be present in well-constructed work. Rubrics make your assessment criteria very transparent to the students, make marking of assignments easier and more consistent, and accreditors love to see them in use.

A typical rubric constructed in table format will have the following:

- One or more attributes for judging the student responses (row headings)
- Description to clarify the meaning of each attribute (row heading description)
- A rating scale for each attribute - e.g. Exceeds Expectations/Meets Expectations/Below Expectations (column headings)
- Descriptions for each attribute/rating level (cells - descriptions)

Constructing rubrics has many benefits for both student and teacher. We sometimes mark in an intuitive holistic way and building rubrics can help us understand and better explicate our own specific internal standards, and it forces you to really decide on which attributes are most useful in identifying the differences between high and low quality student work. There can be surprises here for faculty when they start considering all the different possible attributes to rate students’ work and identify the most important – the most telling. What you are looking for is visible attributes that really help you identify the difference between high and low quality student work. If you have TAs marking student work, rubrics can help the TAs better understand your personal standards, which lets them more consistently evaluate student work – like you would. Students can also use the rubrics to build better work. We want students to produce high quality work, but sometimes don’t specifically tell students the attributes we expect to see in high quality work. Rubrics can help close this gap.

See Appendix 1 – rubric example

Personal admission: I really, really enjoy creating rubrics – contact me if you want my help creating some rubrics for your course.

Third, at a class level, carefully planning teaching activity can dramatically improve their effectiveness. The underlying organization of any online or F2F classroom session parallels that of any effective teaching intervention; it needs a well-thought-out structure with a beginning, middle, and end. There are many frameworks used to describe such planning structures, but they generally have the same elements grouped in different ways. I recommend the use of a simple model called Set, Body, Close.
### Set, Body, Close

<table>
<thead>
<tr>
<th>Set</th>
<th>Body</th>
<th>Close</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set stage, establish tone, convey why topic is important, activate prior knowledge, and outline objectives</td>
<td>Two to three main topics, change stimuli periodically (different teaching techniques, activities) manage content overload</td>
<td>Summary, relate to Set, emphasize what has been accomplished</td>
</tr>
</tbody>
</table>

Set, Body, Close is highly adaptable for almost any size group and length of activities (a short activity to a whole class). The Set portion sets the stage and primes the learners for what is to come; most importantly, it establishes the tone, conveys why the topic is important, activates students’ prior knowledge, and outlines the objectives. The Body is the core of the class; in a conventional lecture, this would be where the teacher delivers content, while for an activity it could include tasking, time to work on activity, reporting, and discussions. Finally, the Close wraps everything up. It summarizes the class or activity, emphasizes what has been accomplished, and relates the outcomes to the objectives from the Set.

Using more structure in your teaching can help students get more from your sessions. There are often worries that if one spends too much time on structure, you won’t have enough time to cover all that content. This is actually a false dilemma. Research has shown that students learn the most from less dense lectures and even outperform peers who have had denser lectures. And there is more - when examined, the less dense lecture cohort even outperformed on content they didn’t cover! The lower data rates makes it so students can actually learn and organize their understanding as they are learning it, which leads to better retention and long-term understanding. Don’t believe me? Look up *Effects of lecture information density on medical student achievement* in Journal of Medical Education.

### Fostering Interaction

Traditional online course models most often incorporate discussion as the main vehicle to have students interact with the teacher, other students, and the content. These discussion activities can be extremely powerful and lead to all sorts of positive outcomes – especially building of community and deep engagement with content. But they are typically only practical in small cohort courses (20-30 students). In these small courses, the teacher is a key player, by their timely presence, and contribution and shaping of the ongoing discussions. Unfortunately, this kind of model does not scale well to larger courses. The sense of community often doesn’t form in large group discussions when anonymity is more possible, the teacher’s time and effort is finite, and the teacher can’t realistically be present enough to foster the evolving community and discussion. We can try unmonitored discussions and try to use participation marks to encourage participation by all students, but having many students only seeking
participation marks often limits the power and depth of these discussions – they often fall short of their potential.

We need to consider other more scalable options to foster interaction. There are three types of interaction to consider – Teacher-to-Student, Student-to-Content, and Student-to-Student.

First, let’s consider Teacher-to-Student interactions. You probably need to accept that in very large courses Teacher-to-Student interactions will more be in broadcast mode than the back and forth conversational dialogue possible in smaller classes. In large courses that have moved online, we will have to carefully structure interactions so the faculty member is not overwhelmed by individual student’s requests. The faculty member’s time and attention are a limited resource so we should focus on interactions with many students at a time, if possible. It is a question of how to get some feedback from students without getting so much feedback that it is overwhelming.

**Collaborate Polling**

Collaborate Ultra has a built-in quick polling function that lets you quickly build multiple-choice or yes/no questions, you can then open the question for students to complete, and once class has responded, display the results. This can be a prior knowledge probe, feedback on learning progress, or great starting point for a discussion. The *Adding Interactions to Collaborate Ultra* video on the CIS YouTube will showcase these kinds of polling options (video currently under construction).

**Unmonitored Discussions**

You can use unmonitored discussion forums and periodically scan them in order to bring just a few of the top questions or comments to the next online class for discussion. You are not intensely watching forums or interacting with students, just periodically dropping in and doing a high level scan of the discussion. By bringing some ideas from discussions forums to the next online class you are signaling the students that you find their discussions in the forum important enough to spend some of your precious time reviewing student comments. Teacher attention is a motivator for students to participate, but the unmonitored nature of the forums and large number of students can make participation variable. There can be issues with unmonitored discussion with the lack of community (where anonymity is the norm) and the teacher does not realistically have the time to foster the sprawling large group discussion.

**Minute Papers**

You can get some quick feedback from students by having students submit short Minute Paper quizzes in Canvas after a class. In a F2F class, a minute paper occurs during the last few minutes of a class. The teacher simply asks students to get a blank sheet of paper out and answer some basic questions like – What are the 3 most important things you learned today? or What is still unclear for you? or Write an exam question you might expect from today’s content. We are just trying to get a glimpse into the student’s current level of understanding. You don’t mark these. You just quickly scan the submissions to discern patterns, recurring questions, or interesting insights. You can bring a few of these questions and insights to the next class for
discussion. This kind of activity transfers well to online since you can easily follow a synchronous session with a short Minute Paper quiz. You usually provide a small participation mark for completing the quiz (so minimal increase in marking load).

Next, we consider **Student-to-Content** interactions. You need to choose between a synchronous or asynchronous mode of content delivery (or can do a mix). Both modes have their own particular mix of advantages and disadvantages. What is right for you, your students, and the course will vary.

**Recorded Lectures**

Asynchronous delivery often involves canned videos of lectures. These are often done as voice over PowerPoint with screen recording software like Camtasia™. Recorded lectures are less anxiety provoking for the teacher since you can do multiple takes and are more immune to those last minute technology glitches. You do lose some of the immediacy of live, synchronous classes. Recorded lectures can be useful when your schedule makes being available at regular class times difficult, as they can be pre-packaged and posted in advance. If you want to create these, we recommend using Camtasia software that is free to all students, staff and faculty at UBC. With recorded lectures, there are possibilities to embed questions and sophisticated interactions into the video stream using tools like Articulate Storyline™. Contact the Centre for Instructional Support if you want to learn more about these Articulate possibilities.

**Live Sessions**

With synchronous (live) delivery methods using tools like Collaborate Ultra or Zoom, there is the immediacy of live performance, and good opportunities to seek and respond to student questions in real time. The ability to respond to questions in real-time is an important advantage. Often the simplest approach to gather questions is to encourage students to type their questions into the chat window and then you periodically stop to review (or have a TA monitor) the chat stream and answer a few of the most pertinent questions. You can have some moments of silence at ends of certain segments to give students time to think and post some pertinent questions in the chat window. You typically don’t answer all questions, just those that will best advance student understanding and help them get the most from the lesson. This allows you to better adjust instruction “on the fly” to better serve students immediate learning needs. This immediacy of live sessions can also be a disadvantage when technology glitches can be anxiety provoking and disrupt the flow. Thankfully Collaborate has been very stable and Applied Science faculty have been reporting very few glitches. These live sessions can also be easily recorded and later reviewed by students.

**Chalk and Talk**

If you are a “chalk and talk” teacher there are a few options to consider to help your teaching online.

The ELMO document cameras in most UBC classrooms have an SD card port and USB port. You can easily record document camera videos directly to either the SD or USB ports. Once you have captured the videos, you can edit them in Camtasia, and
then post them directly in Canvas. Contact the Centre for Instructional Support if you want to learn more about this possibility. [add screenshot of ELMO manual page]

A number of interesting “hacks” have surfaced where teachers have used their smartphone camera to build an ad hoc document camera. People are live streaming into Collaborate and Zoom using this kind of setup. It is often as simple as joining the session from your phone and laptop at the same time. Using the laptop to send audio and the phone to capture video. As the moderator of the session on the laptop, you can promote your phone to presenter, which will broadcast the video to everyone. All that is then required is a method to hold the phone above the document you are writing on. People use a variety of objects from tripods, to lamps, to stacks of tins to hold their phone. There are lots of videos that show you how to do this on YouTube [just search “smart phone doc camera”].

**Using Quiz Tools**

Often, when I start talking to teachers about using quiz tools within Canvas, the idea get dismissed because of quizzes reliance on Multiple-Choice Question (MCQs). MCQs are often unfairly described as only being able the test low-level thinking like recall and rudimentary understanding. This is very wrong! It is very possible to create MCQs that require higher-level thinking. Part of the inaccurate perception stems from our own poor educational experiences. You can very quickly write many bad MCQs and these are often the quality of questions that we have experienced ourselves. It doesn’t have to be that way. The catch is that good multiple-choice questions are time-consuming to create, but their ease of marking and simple reusability can make this time commitment worthwhile. I encourage you to at least incorporate MCQs into some portion of your tests and exams.

Teachers also will often quickly dismiss Multiple-Choice and Short Answer exams because they believe their course requires extensive hand-written calculation questions to properly assess students’ understanding. But, there are other ways to structure questions beside hand-written to assess this kind of higher-level student understanding. What you want is to induce students to do calculations on the way to a more singular final answer. One of the criticisms of this structure is the inability to see process and award part marks – that is a legitimate criticism, but there are ways to structure the questions to partially address this issue.
Building high-level MCQ from Calculation Question

You can restructure a calculation question into a series of “spot the error” questions that require students to do the calculations and use that information to sort through the presented errors and provide a short text response. What is interesting about “spot the error” questions is you can often tell where a student calculation pathway has gone off the rails by the error they choose – so part/differential marks are possible. You build these kinds of questions by modifying existing questions involving calculations, sketches, or non-text answers in a way that preserves high-level thinking while allowing simple text responses. Thanks to Pete Ostafichuk for this idea and the example in Appendix 2.

Finally, we should attempt to foster Student-to-Student interaction.

Peer Review

One way to increase the amount of feedback students get without overloading the instructor is to use student peer review. In peer review, students review and provide feedback on each other’s work. There is peer review functionality built directly into Canvas that lets you anonymously and randomly assign a specific number of peer reviews to each student. Typically each student gets tasked with reviewing 2-3 submissions from their peers. It’s a good idea for the teacher to provide structured questions or a rubric to help students review a peer’s work. There is a bit of trick to the kinds of questions you ask – you want reviewers to provide feedback more than evaluative judgments. Linda Nilson better explains this in her paper, Improving Student Peer Feedback.

Excerpt from Improving Student Peer Feedback

Typical judgment-based feedback questions give students emotionally charged tasks that they are cognitively ill equipped to perform well.

She proposes writing a different kind of peer feedback item-one that does not ask for a judgment or opinion and so evokes no emotion; one that any student, no matter how unfamiliar with the discipline’s rules, is capable of answering; and one that demands that students carefully attend to the details of the work in question, whether it be a written paper to read, an oral presentation to listen to, or a visual product to experience. Furthermore, if the instructor wishes to grade the peer feedback that students provide, the quality of the answers is quite easy to assess.

Consider how the following don't ask for evaluation, but ask the student/reader/audience what did it mean to you?

- Highlight (in color) any passages that you had to read more than once to understand what the writer was saying.
- Bracket any sentences that you find particularly strong or effective.
- Underline any sentences that you find particularly weak or repetitive.
- List below the main points of the paper/speech/project
- As a member of the intended audience, what questions would you have after reading the paper/listening to the speech?
- What do you think is the strongest evidence for the writer’s/speaker’s position? Why?
- What do you think is the weakest evidence for the writer’s/speaker’s position? Why?
Group Activities

For group activities, we can use Collaborate’s breakout room function. With a click of a button you can distribute students to private breakout rooms where they can discuss and complete activities in smaller groups. With another click of a button you can bring all students back to the main room to report. Once back in main room, there are many options for mechanisms for reporting: you could randomly call on a team to report; you could use Collaborate’s polling function to gather decisions from all teams; or you could share a whiteboard for teams to report on. The Centre for Instructional Support can provide support during sessions the first time you use this kind of functionality. Contact us at learning@apsc.ubc.ca if you want someone to co-pilot with you during your first session.