TREVOR:

Hi everybody, can everyone hear me or Kyle, Richard can you nod if you hear me? OK Kyle's giving me the thumbs up. I'm Trevor Holmes from the Centre for Teaching Excellence. Welcome to Beyond the Final Exam. It sounds like the sequel to a horror movie or something.

We hope it isn't that, but we have a few of us from the Centre for Teaching Excellence here today to have a conversation about some of the things we can do, besides a proctored final exam. There's going to be some advice out there about proctored final exams, but you probably joined because this is called, "Beyond the Final Exam", what can we do instead? We have presenting today Kyle Scholz from the Centre, our Educational Developer for Research. And Richard Li from engineering the Faculty Liaison. And Brianna Bennett is hosting us today on teams and she's working in the Centre as Special Projects Assistant.

So just a few notes to begin with. What we're suggesting is that people keep their mic's muted, and we're suggesting video off. I mean, if you want to put your video on, that's fine. We are recording the session and we think in general, for privacy reasons, a lot of people don't necessarily want their videos on. Um, and that's good reasons. So if you want to, you can. It's not prohibited, but it's helpful for bandwidth. If you don't. Also, if you are finding that things are lagging or you're having some difficulty with your Internet speeds with the ellipses at the bottom hovering menu in your Microsoft Teams menu, you can turn off incoming video. The other thing you can do from that same menu, is turn on auto captioning live captioning if you need to.

So what we're going to do today? How will proceed is that we'll use the chat feature for you to ask questions, and you know we'll have a couple of questions for you as well, and you can answer them in the chat. So in order to reach the chat, you can find it. It's kind of like the third button from the right on your hovering menu across the bottom. So without further ado, I guess we'll begin. And again this session will be recorded for future use.

So one of the things that happens in a lot of workshops is people kind of intone a land acknowledgement and then move kind of like a OK, we've done that now. Let's move on. I would rather try to tie this kind of acknowledgement to the work we're trying to do together when we come to a workshop or a webinar. You'll realize and know that we do live and work, and I and you know, we created this workshop and webinar on the traditional territory of the Neutral, Anishinaabe and Haudenosaunee peoples. And at the University of Waterloo's on the Haldimand Tract Block 2, which is 6 miles on each side of the Grand River that was promised to the Six Nations. The graphic that you see shows the amount of land that remains in Haudenosaunee control. So, uhm, I know that some of you may not be here on the Haldimand Tract. And if you're interested in knowing about more about the land you are on, you can visit native-land.ca.

The connection I want to make about today's webinar is that I think that one of the things about the proctored timed final exam is, it's one of those tools that has become habitual in a particularly kind of westernized colonial industrial sense of education. An I think that it's on us to kind of contest that and part of today's work will be to rethink the timing and the ways of being and ways of phenomenologically experiencing an exam. That are bound up in those particular norms, so, uh, from a kind of cultural capital perspective or an intercultural perspective, I think that we can do better than the proctored two hour or three hour final exam.

In thinking about final exams and what we do and why we do it, I wanted to bring us back to a few first principles. And a few fundamental questions. So why do we examine? Right? And you may have some thoughts that you want to put in the chat but my thoughts include things like we need to know that learners know stuff. Or that they can do something with the content we're teaching them, or the concepts or the skills right? The other thing we need to verify is that it's the learners themselves who are doing the learning and it's their own learning. It's not mom or dad or sister or brother doing the learning for them or friend or some purchased service doing the learning for them and they're doing their own. So sometimes exams are the only way to show that.

Uhm, OK. I have some questions about exams themselves and I notice that my network is lagging a bit. I don't know if I'm lagging for you folks or not. Um? I see Kyle said shaking his head so it seems OK. So existing exams are they testing the things I'm actually teaching at the level I'm expecting learners to perform? That is to say, do I want people to be at kind of like the apply level or synthesize level of like Bloom's Taxonomy? But then test them at a kind of recall level, so there's a mismatch between levels, and then how much of my summative assessment practices might have to do with like logistical convenience or staffing issues like I have one TA this coming term, or have two TAs. Or I have no TAs versus showing evidence of actual learning. That is to say, am I mostly looking at what I can do rather than what's possible based on logistics? That's totally reasonable because academic labor, being what it is, we only have so much time in the day. But let's think about ways we could rethink the exam marking even without, for example, TAs. The other question I have is: Is it true that my discipline requires people to bring all their thoughts together, um and prove all the new knowledge from the last 12 weeks in two or three hours under the watchful gaze of an authority figure? Are there other examples of this in their future careers or in the life of the discipline where that is good practice? Maybe it is. Is it true in every course, or is it merely habit in our disciplines?

The other question I ask is, are the current tests that I used and the exams I use for proctored final exams actually reliable and valid? Have we done sufficient amount of testing on the validity and reliability of our multiple choice tests, for example? Lots of people have not. So we're not even sure that they work to do what our original goal was, which was to verify that learners know stuff and we can see that the learners know stuff and the learners can see that they know stuff.

So you may have some other questions. Um, and I see already in the chat a really good point that students use studying for the exam to actually do the learning of the material, and that's a great point, and I won't jump ahead of myself. But I will say that one of my in a previous life when was helping students prepare for exams. We would do a large class concept map of the course and it was during that activity that a lot of people solidified their knowledge. So yeah, there's a lot to be said for the synthesizing you do when you prepare for exams, and there are good reasons for exams, but we're trying to think of other ways. To achieve some of the same stuff.

So, uhm. Yeah, or we only testing the test wise students right? Or like how valid and reliable are we being with our tests? So I just wanted to remind people of the CTE kind of like model of course design. When people ask, when we ask people what do you remember about CTE workshops. People say things like alignment. OK so what's alignment? That's where we take the concepts like the content that you're teaching, the knowledge, skills and values and make sure that everything is aligned between the intended learning outcomes, the teaching and learning activities you do between classes or from week to week in an asynchronous environment and the formative and summative assessments. So I'm just going to quickly go over that to set the stage for some examples that Kyle is going to present about, and that then will return to a course that I changed from a final exam to something else.

So. Um, keep in mind that the learning outcomes will often have a context in which people have to perform a certain task right? So we have a kind of a behaviorist paradigm about learning outcomes, and we often use verbs and these verbs help us to decide what we're going to test on too and so our exam should also be kind of aligned to these kinds of birds. But one thing that learning outcomes can do is to differentiate the goals of the course from the means of achieving them. Is the means of achieving these goals always going to be a timed test? Not necessarily.

We get to learning activities which is another pillar of course design. Now that we're thinking remotely, we've got to be designing for possibly synchronous and definitely asynchronous contact, and by contact what I mean is, students need to have contact with the course material. They should also have contact with the Prof in some way or the TA, and they should also have contact with each other. So those are the kinds of contact that you're designing for.

Consider also the responsibilities of the learners and the instructors. Who's doing the learning and how right? Your teaching might involve informing. Learning certainly involves practice, so we want to have activities that help students to practice, kind of rehearse for the successful achievement of learning outcomes so that they have a chance to see that they can do this, master this stuff before a cumulative or summative assessment.

And speaking of formative and summative assessment, you've heard us probably before talk about the difference, and so formative assessment is often that process of iterative feedback, involves some dialogue, not always even graded, and will get a bit too a bit around non-graded work in a short while. Assessment does occur during the term, but also sometimes occurs just during the end and typically involves not a heck of a lot of dialogue except the grade itself, maybe some feedback that they can use in a future course. It's often graded.

The framework for assessment that we typically use is that assessment is a form of interpretation. You are getting evidence from the students, so you're setting the like context for them to give you evidence from which you will reason the kind of learning that they did. So I'm not sure if you thought of assessment that way before you're observing to obtain evidence you're interpreting based on that evidence. Therefore, does it always have to be in a final exam? I don't think so. On that note, I'm hoping that we can. Kyle will rest back presentation mode from us and in the chat, I'm hoping that Kyle will post a poll for you to answer about your own assessment practice and the poll has to do with whether you typically use a final exam and what percentage of the whole course is it? What grade waiting do you assign? For example, 20%, 30%, 40, over 50, and I know some of you might have some nuances like yeah it's 35%, but if somebody does better on it than the mid term, it's actually 55% something like that. There's no room in the poll for that kind of nuance. But we'll get to that poll in a second, I think. And Kyle is waiting. I'm waiting and it's uploading.

New messages there they are OK, so in the chat window you will see a poll. I typically have a proctored final exam where less than 20, 20 to 30, 30 to 40%, 40 to 50, more than 50. Or I don't have a proctored final exam. If you could start voting on that and submit your vote, we'll see the results start to pile in and we'll be able to think about our own comments back to you as the webinar proceeds. And we also have a question for you around what kinds of challenges you foresee in departing from this kind of 40 to 50% exam, which 75% of the respondents so far are running so, I'll just type that out as a question too. OK Kyle, you want to take back control and start your physics slides?

KYLE:

Yeah, thanks Trevor. It is just nice seeing the questions come in or the responses come in because we want to kind of start to tackle this idea of a final exam from the perspective of something that seems like it's probably pretty common, based on your responses like this idea of having like a big final exam, right? The final exam that's worth quite a bit, and that's what you utilized to determine whether or not you're still letting student know what they should know in your course. That's a pretty commonplace, so we wanted to spend the next little bit of time going through a couple of examples of both more STEM discipline examples. And also some more Social Science/Humanities examples as well. We're not trying to necessarily say that, well, these examples are only for STEM, are only for Social Sciences or Humanities, but rather maybe some different ways to think through alternatives to a final exam that might align better with your discipline. So again, as we start to talk through these, please feel free to write any questions you have in the chat or responses to Trevor's question. Specifically after we tackle some of the STEM examples, we'll take a brief break to tackle any questions that might come up.

So again, this is a physics 101 exam. This is an exam that comes from Princeton, but you know it's a big exam. I think it's 151 questions or 151 points at least. I think it's a big exam that students would typically do at the end of the term and you know it's got questions that they would write down and just fill it out and it will take you a lot of time. So that's one way to do things, yes. And at the same time too, when we think through you know, so like what purpose does that exam have? Trevor just spoke about that alignment framework where you have your learning outcomes and your interpretations and your observations as well. You know, part of that is, well, yeah. So what are the learning outcomes that we need to think about for our course and what assessments do we need, do we need to have for those learning outcomes?

These are some sample learning outcomes for a similar physics course. This is from actually Joe Sanderson, one of our physics instructors here at UW for physics 111 course so really introductory type of physics course. These are the kind of outcomes, we're not saying these are how his outcomes are being met in this course, but these are the kind of outcomes you might expect in an early physics course that might then utilize a final exam similar to that big 151-point exam.

So you might have for example, some of these activities that Trevor spoke about things like watching screencasts, maybe answer some problem sets, maybe doing a practice examination, and then maybe doing some feedback. Or the feedback itself on the practice examination as another form of a learning activity. And then again, maybe some standard summative style assessments would be this big final written examination as we spoke about maybe some weekly short quizzes as well -- things like that. Again, we think its a pretty standard ways you might envision a physics course, an introductory physics course, and it's actually fine. So the question then is, well, like, what else can we do aside from just a big final exam basically? And when we think to that as well, if we really want to think through how are we structuring these scaffolded culminating assignments? Because one of the things with having teaching and learning activities embedded into our courses, especially remote courses, is that there is a scaffolded nature.

We want to see what students are learning, give them feedback on what they're doing so that when it comes time to this, to come to this bigger assessment, they've had chances to practice, receive feedback, and prime themselves to be successful. So we're thinking through things like, like, what, how do we design things equitably? This goes back to Principles of Universal Design for Learning and ensuring that regardless of who are learners are or their backgrounds or like come into class with that

they all have equal opportunity to complete whatever that assignment is – that culminating assessment.

We want to ensure that what we're designing, even if it's not a proctored final exam still retains academic integrity and ensure the students are showing us what they actually know themselves. We're certainly trying to pay attention to the academic labor, piece, which I'm sure as we start to talk with some things, examples like pump in your minds, uh, some of these might sound all well and good, but at the end of the day, if it's just me and I have a class of 200 students, I mean, what can I reasonably do with my own time? How can I be fair with my own time? And one of the things that we like to think about, but we, we acknowledge, is challenging to think about at times is how to connect our own individual assessments in courses to broader curriculum based discussions with disciplinary expectation that might as well. But it's not just my course, my assessment, but it tells part of the story is certainly part of a student trajectory in their program. What I do in my first year course will inevitably connect. What happens in the second, third and fourth year? So are things connected. So we have to keep some of the stuff in mind as well. But at the same time too, as well as we think through some of these alternatives to final exams. The nice part is that it kind of forces us to think through some of these things, and we can't just rely on the big final exam to do that work for us. So again, we're going to try to keep some of these things in our mind as we go through the next little bit.

So what we're going to present initially is a list of alternatives to proctored time limited final exams. We're trying to give you a rather big list to start off with, and we're going to pick out a couple of these to focus on. Uh, I'm not going to go through each of these right now, because that would just simply take up too much time. Again, the slides have been shared in The chat at the start of this session so you can look at these examples in more detail. And of course, we're willing to talk about some of these in more detail during the question and answer section, but these are some examples against more STEM based ones and Humanities, Social Science based examples that you might think about as alternatives.

The one that I will touch upon briefly, because I think a lot of these are self explanatory, except potentially this notion of an exam wrapper – the first one there, ever so briefly cause I'm not going to touch upon this one in detail and exam wrapper is almost a metacognitive technique to utilized within examination that can either come once, when students submit the exam and then our immediately met with an exam wrapper, or which they receive after they get their exam back with their feedback. But it's a wrapper because it's meant to encourage a student to take what they're doing in that exam and think through it from the perspective of both, like how do I think I actually did, but more so than that, like what did I do to prepare adequately to succeed in the final exam as well. So in some ways, yes, assuming exam wrapper does utilize the exam in some capacity, and I mean the whole point of the workshop with this webinar to go beyond the final exam, but using things like exam wrapper starts to shift the conversation away from just strictly yeah, are you doing everything exactly correctly? Do I have to worry about proctoring and all these components of the final exam, the timed final exam? And my post only emphasis on alright, like as a student as a learner, what did you do to succeed? What did you do to prepare yourself adequately? What do you recognize that you might have not done as well on? And how do you plan to in the future, do better and how you study differently? So it almost, it does shift the conversation away from simply right and wrong to ways to think through how I as a learner might be better in the future. So that metacognitive approach is quite nice with the exam wrapper that you might consider as well.

But again, for today's session we're going to focus on the following, and these are the ones that are bolded here. So this notion of reports and I'll go into more detail about what that is, oral examinations, virtual poster presentations, and then Trevor afterwards will start to tackle some Humanities based examples with reflective journals and take-home examinations. So just a snapshot of some approaches that you might consider utilizing.

Uh, so I want to start with this idea of a virtual poster presentation first and again we'll couch this all within what could be done instead of 151 point exam like that physics examination that we showed initially. So you might think about the poster presentation as you would for an academic conference where either yourselves as presenters or maybe do something similar or have done something similar in a face to face course. But having the students instead of just showing you what they know by answering a bunch of questions, give them a project, give them a task, give them something that requires some research, some investigation into a more project approach and let them present their findings in that poster modality, but without needing to actually produce posters right. You don't have to go and print these things off and then find the physical location on campus is set up with poster presentation and have students come around to that poster presentation, but instead there's a ton of useful tools online that exists that could be thought to utilize and create the actual posters. We have things here, for example a Canva, which is a really robust poster creation tool. That's the screenshot here that you see. Now that's kind of what Canva looks like as students or yourselves would utilize it, maybe as a way to visualize what a poster could look like in how you present all the information from the student findings or things like PebblePad are ePortfolio tool that we have access to at UW for free. That's an opportunity as well. I mean, keep as simple as well with something like Microsoft PowerPoint and design a PowerPoint slide that functions as a poster as well, but the idea is that just like a poster session, then the students not just creating this thing in isolation for themselves to showcase to you what they know, but you can instead have an actual poster session and just do it virtually in the remote environment. So we're thinking about things like LEARN discussion board, for example, creating a discussion board where students post their poster presentation, and then other students come by. They view the poster presentation. Maybe it's a little brief description by the student that's written out, or even audio recorded, and then other students respond and ask questions and try to learn more about each student's poster presentation. So in many ways it captures all the thought that goes into designing a really effective poster and synthesizing all that information to showcase one's research. Or you just do it electronically and do virtually and you use some of the affordances that we have. Either some external tools, internal tools, and LEARN related tools as well. So that's one example that we might consider.

Another one is this idea of problems that report and this is one that we actually just started looking into a little bit more recently. And we're crediting here Jim Martin in Physics and Astronomy for sharing this with us. I mean, and when we heard, we thought it's fantastic. It's in some ways it's so simple, but it's also so unique and how we think through having our students show us what they know. We use this idea for reports and the way it works is the students are provided with both a set of problems but also right away the solutions as well. So yeah, it's like a problem set, but the problem set has the solutions already identified for students, so students, then they're still working through the problems and they're ideally doing the problems without just immediately looking to the solutions, even if they do, it doesn't matter, because what we're really trying to determine is whether or not a student knows how to in fact work through a problem to arrive at that solution. It's not necessarily the right answer that matters, but it's all the thinking that goes into coming up with what that right solution is and showcasing one the work. And on top of that, as well then the other piece that really kind of ties together for Jim's example, at least is this idea that then summarizing that whole experience of solving

the problems in this one page report. So students are submitting not really like the problems and solutions, they are, but that's not as important as that one page report. That says all right, this is what I did, these are the parts I struggled on. It kind of goes back to what I spoke about with exam wrappers in some capacity but it's looking at what students or how students are learning. And the nice thing as well as that like students, are getting that immediate feedback from asking this question instead of waiting like a week or two, you get feedback from the instructor. They solve the problem and then immediately looked at the answer to see if it's right or not.

And then the important part again is just doing that report. So for example, this is a snapshot of a report that one of the students wrote. You can read it here, but you can see the part in the black text is what the student wrote as the report and the part in the red text then is how Jim responded. And the student you can see is questioning what solution he or she arrived at. You know, admitting fully that I might not exactly know what I'm doing here or I recognize I'm confused at this point, but can you help me understand why I'm confused or what I'm missing? And then for Jim it allows him to come in and say, OK? Well, exactly. Here's the feedback I give to you.

Something like this is fantastic. I mean, Jim acknowledges when he shared this with us, that it does require work, right? It requires him and a couple of TAs to go through each student's report and provide more detailed feedback on that report. I mean, this is what his course is built up of. He uses six of these that are worth 50% of the entire grade and then six tests as well for the other 50% and that makes up the 100% grade. But you have these as that opportunity practice, try things out, learn what you don't know and then you still have the tests in place that aren't as high stakes then, but allow for a bit more granularity in terms of how students are doing. So again, a really neat idea that we found that can again help you think through different ways to assess and still see what students know.

A final one that I want to share at this point in terms of the STEM examples is this idea of oral examinations as well. Again oral examinations, that alternative to the standard written one, that are simply done by a student telling you orally what he or she knows. And you might think, well, that's kind of challenging to do remotely. I mean, it's already challenging enough to do those things face to face, but now the remote environment as well, but it can work too. And you know you have students answer questions synchronously and you have yourself or a TA present And just you know it's useful 'cause you gotta dig a little bit, right? They tell you what an answer is, but you don't have to necessarily take it at face value. You can prod a little bit and say OK, like why do you think that's the way it is? For issues of academic integrity if that is something you're concerned about, well, the oral examination encourages them and forces them at times to be completely upfront with what they know and what they don't know.

Again, we credit Diana here from Statistics and Actuarial Science for thinking through this idea. There's actually a webinar that she did with us a couple months ago that you can access a YouTube recording for. And the way that she does this is that each student has 15 minutes and they all get 5 questions and the questions are the ones you can see here. So you fill in the blanks with what you want to actually answer, but you have a standard set of five questions that each student gets. They have 15 minutes to answer the questions and then they can kind of do with them as they wish. She makes it intentionally open book, so students could have resources with them, and if that means it takes more time on one question, another, so be it. But you're still getting out the essence of what they know or what they don't know, but do it in such a way they don't have to worry about that proctored environment where they feel like they're being watched. I mean, it's very intentional here that, OK, yes, they're being watched, so to speak, but it's a conversation. It's not just you observing

what they're doing. It's you talking about what they know and allowing them to explain more or, again, the limitations of what they know, so has a lot of neat functionality as well conceptualized as an oral examination.

Again, we go into conversations about that academic labour piece, and the amount of time it might take. But if we're trying to find alternatives for that time-limited proctored examination, that is a huge thing. Oral examinations spread throughout the course in different capacities might be a way to think through it as well.

So I'm gonna allow us to maybe take a break here for some of the questions. I've seen them pop up as I've been speaking away and I try my best to ignore them and just focus to get done at 2:00 o'clock, which is right now. But maybe we can look at a couple. I see, Trevor, you've been responding to some throughout. I don't know if you have a sense, Trevor, of ones to think about now or I'll see if you have any thoughts before we continue.

TREVOR:
Yeah, I really appreciate the focus on academic integrity. Lots of people are wondering how if you don't have proctored exams, are you sure that the students are the ones making their own posters, right? Or how are you sure that the students are the ones doing the actual learning? It's hard to verify that which was one of our first goals to verify that students are actually the ones doing the learning. So that I appreciate that one, I also appreciate the time it takes to do some of these alternatives. I often contrast that, with the time it takes up front to build a *really* well written, you know multiple choice exam that grades itself and the time that it takes to grade short answer questions or whatever. Yeah, you need a lot as Barb's mentioning kind of a rubric for interrater reliability if you're using a whole grading team. That's true though of really any exams, of any kind of assessment, I think, from essays right through to exams.

KYLE:
And I would just put a shout out to Diana as well. If you haven't seen that webinar she put on, I mean I didn't do it justice by any means in my 4-minute little synopsis of what she does. She put a lot of thought into what these oral examinations could look like to be fair, to have reliability, so it's something that I'd heavily encourage you if you think that's a neat idea to look at Diana's webinar and look at the recording of that, or even speak to Diana, I know she finds this oral examination as an assessment technique fascinating and did a lot of research into it and she I'm sure would be happy to talk more about it as well.

TREVOR:
Yeah and I also think that it's a good idea to look at the academic integrity literature and see why students collaborate when they're told not to, or what kind of culture we are raising them into at the University of Waterloo. You know a lot of teaching developers will say, "Oh instead of a big final exam, you should do all these little assignments, little assessments throughout the term, and you should definitely have scaffolded assignments." Now Kyle and I are sort of agreeing with that, but at the same time, if these students are taking five or even six courses, some of them, if you stagger everything into tiny little bits, maybe you've gone too far onto the small assignments side of things. So when there's too high stakes, people will be tempted to cheat. When they're too low as well people maybe are tempted to cheat if it's only worth 2 points or something, right? And there's so many things going on each week in all of their courses, so there's probably a more kind of what I call Goldilocks approach,

which is just right. It's not too big, it's not too small, it's just right, and figuring that out for your own course in your own discipline is pretty important in these times when people are going to have multiple pressures on them from many directions. So the established literature about multiple small staged scaffolded assignments sometimes assumes that distance learners maybe are taking a couple of courses rather than five. So just watch for that.

KYLE:
Right? I've just seen [name]'s point here in the chat as well about the oral examination and some of the limitations with approaches mean by no means these kind of fits everyone right? Like again, if you take even that notion, the Goldilocks approach you just spoke about Trevor, there are some things that it might just not work right and that's why we're trying to show alternatives as well. Like Alternatives, plural, so some of these might work more effectively, or you might envision a world where these might work more so than some of the other alternatives.

TREVOR:
Well also, I was gonna say that I went to a presentation by someone, a professor I think it was at Guelph, a pair of professors who had done oral exams with the class size of something ridiculous, like in the three hundreds or four hundreds or something. It was like oral final exams with that many students and they found that it was an accurate measure. Like they did some kind of scholarship of teaching research on it and they were like, yeah, this actually worked. I forget how it worked, but oh my gosh.

And the other thing I wanted to suggest was Shannon Dae and I did a webinar on deepening your course design which included a little section on authentic assessment. Now if you're in a discipline where you can grab onto something that is like something professionals do in that discipline and it has a bit of a public-facing piece at the end that also can mitigate the temptation to cheat because actual stakeholders are going to see it and it's actual training for their work world someday. Not every discipline has that. I mean, I think I could argue that most disciplines have some authentic assessment you could hang your hat on for your course.

So Kyle, do you want me to move on to the humanities example?

KYLE:
I think so! We'll have time at the end as well for more questions that come up so keep it coming as it comes, yeah.

TREVOR:
So I know that there are social scientists and humanists in the audience today, and I am one. So I'm going to tell you the story of my course moving from a proctored final exam to a more reflective takehome and the joys and the pitfalls of that. So we know that, you know, there is such thing as a good multiple choice exam. We're not against multiple choice exams at the Center for Teaching Excellence. And it is hard to depart from them when you have a good one. A lot of the time, my colleagues in humanities will have students write answers to things. Short answers, long answer essays in the moment, right? And they've marshaled their resources. Sometimes they have like a cheat sheet they're allowed, and they go ahead and they write an essay. And the earlier point that was made in the

chat, sometimes studying for that kind of exam is where the learning actually happens. And so I wanted to quickly mention that I do have, it's not patented but it should be, an exam review game where students get that meta-cognitive brain muscle working by doing joint concept maps with one another. They realize what they know and what they don't know and that helps them target their studying better. Nowadays, after I don't know, 26 years of teaching or something, I might say let's do those concept maps as the assessment instead of just as preparation for an exam, right? So, there are ways to help people synthesize at the end of the course, other than the proctored final. I'm not talking about that right now, though.

What I'm gonna talk about is an alternative that I used. I don't expect you to be able to read what you see in front of you on the screen. It's very tiny. It's just an example from the gender and social justice course I've been teaching since 2015 here at Waterloo. it's very similar also to a cultural studies course I taught elsewhere for 10 years. When I taught that course elsewhere for 10 years, for most of those years, I have had a proctored final exam. At a certain point, I realized golly people are doing these kind of reflective many journals week to week. Why don't we use those as data for them? Just for them, like I read them, the TAS read them. The students write them, but they never revisit them, so they don't necessarily see the journey of their own learning that I see in their final assessments. So why don't I design a final assessment that helps them show to themselves, how they've changed, or if they haven't changed, how they've reconfirmed some original thoughts that they had?

So I asked 10 mini-journal questions over the 12 weeks. They get like a point for just answering them so they actually start off in the course, if they answer them, with 10% free marks. The reason I think that's OK is because if they get a 0 on the course, it gets converted to 32 anyway at Waterloo, so why not start off with 10? So I have this sort of logic built into that so they do get 10 points off the bat just for doing these from week to week. The 1st and the 5th journal are always metacognitive about their own learning challenges or their own learning, and that allows them to revisit at midpoint of the course and kind of go, how am I doing with my learning? But the other ones are all prompted or based on the content of that week. And it doesn't matter whether they've read the reading yet or not. It doesn't matter if they've read the reading and then do the journal or not done the reading yet and do the journal. It could be a priming the pump kind of question for their reading in that case.

But anyway we harvest these on the quiz tool on LEARN, the long answer quiz, and then we feed it back to them at the end of term and say this is your data for your final take home. They know what's coming on the final take home when I say it's three questions. These are the questions. It's your take home. Don't worry, you don't have to sit in a room and do it. it's kind of cheat-proof in this way because it relies on their own data to make some arguments linked to the text and you can see, maybe you can read it I don't know, but the questions have to do with their own kind of learning challenges, their learning narrative from the beginning to end of the course, and a particular thing that changed for them or got reconfirmed for them, and where in the course that happened through readings or lecture activities or whatever. So they reconstruct their own kind of alignment. They show me their conceptual growth. These things turn out to be a pleasure to read and they often raise the students' grades.

And you know, I've toyed around with it being 15% as a take home or 20%, even 25% some years, but I settle on usually around 15 or 20% and it relieves a lot of stress in the sense that they're still doing the synthesizing work at the end of the course, but they're kind of motivated to not cheat 'cause they're using their own data. If they don't make a good argument, they can fail this thing right? They have to

make a good case, and they have to tie it to readings and/or course activities. So that was the story I wanted to tell you about how I switched from proctored final that asked people to kind of like think across the course and connect the dots between readings. And this idea of a reflective take home that I think is both metacognitive and conceptual.

So how it's aligned? You can see my 4 intended learning outcomes for the gender and social justice course on the left of the yellow table. And you can see the teaching and learning activities, you can ask me more about those another time if you want, and the assessments that touch on the intended learning outcomes. You can see that they take home exam actually touches on a couple of the intended learning outcomes. We don't have to have one assessment per outcome. Some assessments cover several outcomes, and sometimes one outcome is hit in several. So that's my story. And Kyle, I think you're going to just take over now with the rest.

KYLE:
I will indeed, yeah. We just have a little bit more to share and then will leave again, hopefully, sometime at the end. There are a couple questions I've come in as you were speaking, Trevor, that we can maybe touch upon a little more as a larger the larger discussion.

But we've kind of seen these mostly stories of sorts of ways to think through taking that final exam and doing it differently within the course. There's still this notion of alignment beyond your course as well and thinking about how your assessments and what you do in your course plays a role even going beyond that course itself.

So, for example, you might ask yourself, is your course connected to another course? I spoke about this a little bit before the idea that what you do in your course might still be connected to what happens in a subsequent year, or maybe something happens in an earlier year, a prerequisite course that feeds into your course, and trying to be aware that the assessments that you might be designing might still have to have some sort of connection or ought to have a connection to make that make that pathway for students clearer and more understandable.

But if you want consideration, you might go beyond that though. Just thinking about connections to the broader program as well, and what your course's role is within a program. Does it have this seminal part in your program where it has to fulfill a certain role and therefore the assessment might kind of be dictated by your course's role in the program? Or again, does it fit into other programs as well with some elective courses or courses that can count toward the different degree requirements like there's a lot that could be thought about. And again, we're not trying to say with this, like, OK, let's just make your jobs more complicated, but all the same these are things you might consider too as you think through your courses.

And again, you might think about your actual program outcomes as well. When we think about how courses fit within a program, if you've done any sort of curriculum review or been a part of curriculum review within your own department, you might have been privy to this kind of conversation already, where we're trying to say, OK, well, the program level outcomes are X, Y and Z. How does my course's outcomes align with the program level outcomes and then get out of all of that, we can then drill it down to the assessment still and say well, does that assessment play play a larger role within the program? This is where you know I might go back to something like a poster presentation, say, well, does a program as of right now have many opportunities for students to practice a different modality of even like audio recording themselves for virtual poster presentation? Maybe that's a skill set that

would be neat to develop and no one else is developing that right now. Maybe my course can do that for the program and therefore my assessment choice can have a different role.

You might even think beyond that to other stakeholders might influence the assessment practices of your course. So this diagram here on the right hand side just kind of shows the interwoven nature of what happens in a course and how it can potentially expand outwards if you take a more discrete look at the outcomes of the course, but how they connect into assessments and activities as well, just back to that alignment piece. It is all indeed aligned, so just trying to see what they look like as well and what kind of role that plays.

So again, we return now to this list of examples that we shared. We went to detail on four of these. You can see of course here others as well, but you might be interested in that maybe we didn't get the chance to talk about right now. But all the same, we certainly don't want to say, well, we'll never talk about them, and therefore you know, we'd like to always invite you to chat with us afterwards or even right now if you like. If some of these kind of sound intriguing to you but you'd like to hear more about them, or maybe others have experience using some of these as well, and it would be great to hear too. If anyone has tried approaches in your courses that you've explicitly done to try to get away from a proctored kind of time limited final exam, things that you implemented that you've been quite happy with? Or maybe things you tried and you're like, well, I'm not entirely sure if that worked out well. We'd love to hear about those as well. And just we can talk about those, too.

So I'm just gonna end here and then again, open it back up for the remaining looks like 13-ish minutes or so for questions, but we'll kind of wrap it up by saying that it is initially a matter of trying to consider like all these different logistics including who will grade right? So again, I go back to Jim's example here of having himself and two TAs involved in the grading. Certainly, there's some conversation in that chat about this idea about oral examinations and the academic labour that would be required to make that work. Again, it depends how long these are and how much TA support you have. There might be a calculation of sorts that tells you how many of these can you realistically do and fit in while still weighing the benefit of doing an examination in that way compared to the traditional written examination.

So again, we want you to think about things like, how, how are activities, how are assessments scaffolded together? Ensuring that what you're doing is still valid and reliable, and does it allow for equal access for everyone. This is especially true with a remote environment and trying to think through things like bandwidth issues, Internet issues that students might have, trying to create opportunities and assessments that don't require unnecessary or challenging requirements for students to succeed with, and those might again play a role with Internet access, so just be aware of that and thoughtful of that as well.

Again, I make an offer to, of course connect with the CTE liaisons or some of our colleagues from the Centre for Extended Learning, from the Library, ITMS, all by remoteteaching@uwaterloo.ca. There's this whole wealth of people who are available to help think through some of these challenges, some of these scenarios for the fall term. Luckily, people like you right now are clearly thing about the fall term and trying to plan accordingly so we have a bit of time on our sides to indeed think about some of that. We always like having these kinds of conversations and thinking about opportunities that might work for you.

Of course, the Keep Learning website is always available for you. A fantastic wealth of resources there but also help through assessments and a number of teaching tips here too that we have hyperlinked that again are available in that PDF that I shared at the beginning of the session.

But yeah, I'm going to go back to the previous slide as a kind of landing spot. We can use that as our talking piece and just yeah maybe Trevor and I can answer any questions. Or if any things that come up that involve a little bit of discussion, happy to do so.

TREVOR:
So Sayed was mentioning about like big classes in engineering and I just wanted to give Richard a chance to mention anything that he's encountered in engineering classes, which I think you know, correct me if I'm wrong, but a lot of them go up to 120 and in certain cohorts and maybe larger. So Richard, what have you got for us? If anything?

RICHARD:
Yeah, thanks Trevor. So, you're right, especially in first year engineering classes easily just over 100. So first of all, that was a great question. So what can we really use in these large engineering classes?

So before I really dive into options, I want to respond to your question about the oral exam. So we know, it's time consuming and I can see that you know with only two TAs supporting with the grading, it's pretty much you know really impossible to do. But I just wanted to say that I had a conversation with a professor in engineering in the Conrad School of Entrepreneurship and Business. So he has this idea of feedback richness concept so I just wanted to say that oral exam is actually a great opportunity so that even if you just spend 5 minutes with a student you have a really good opportunity to get lots of information from student and you have the opportunity to give lots of feedback to the student with just that five minute video chat. So I mean, on the other hand, also you consider how long you spend for marking a written final exam like you know, if you ask your students to spend 3 hours to write a final exam that is worth 50% of the marks, then you probably would also need to spend quite a bit of time to mark that product and the thing is that you will lose that opportunity to really give feedback to the students in a very rich communication channel.

So that's one thing, now going back to options for alternatives to final exams in these large engineering classes. So one thing that I want to bring up is that I also notice that Nancy mentioned earlier in the session that it's pretty much an urban myth, that's what we would call, in engineering that most instructors have this 50% final exam. In the normal times, that's partly because we have the accreditation requirements, so you need to have this big piece to really evaluate the graduate attributes according to the accreditation boards, their requirements. And the reason that I mentioned that is apparently by the way now it's a big challenge for folks to really continue that way. So I understand that you know for the past winter term and the current term many instructors have abandoned this 50% exam because it's not really feasible at all.

So, what I want to say is that if you look at the graduate attributes in the accreditation boards requirements, teamwork is there and there are actually two attributes that are related to teamwork. So actually engineering students are required to collaborate and perform teamwork skills in the courses and so that's a good idea when you think about assessments. So that's why I always recommend teamwork for peer review assignments in you know engineering classes, groupwork case studies or you know you do tutorial sections that you have case studies in tutorial sections and you can use those opportunities to do even sometimes you have two-stage testing or, like Kyle mentioned,

exam wrappers and all those sorts of opportunities that we can use to certainly reduce the workload a bit off marking. And then by having this peer grading or peer assessment, you sort of distribute this labour evenly to students, while you also encourage opportunity to allow them to demonstrate their teamwork skills. So that's something that we can consider, but of course I know that you have a specific context in your course that we can perhaps have further conversation on so that we can examine your learning outcomes and then see why you really need that final exam piece to assess that specific learning outcome and if we have any other opportunities to find out alternatives that we could use to do that instead of that big piece.

Again, you know, what we are recommending is that, you know, we're not saying that just abandoned this final exam idea completely. You still have ways through quizzes, and you know, online quizzes in LEARN or other any platforms. You know, so just reduce the stakes of the final piece and then make more opportunities for these formative assessments to happen. So again, today we're just exploring options to help you to better allow students to take the opportunity to learn and to get feedback, and to use the feedback so that they can do better next time. So that's my comment here, Trevor.

TREVOR:
Thanks very much, Richard. I appreciate the comments and I think too that I want to reiterate that we're not completely opposed to a final exam. Just today, our webinar is about imagining other things that we can do. So yes, you can get lots of advice about how to do final exams if you're going to. Some people are under the impression that they have to give final exams, and sometimes there's disciplinary good reasons for that. Sometimes it's an urban myth that you have to have, like a 50% final or something in a particular faculty, and even sometimes like the admin will say that that's true, but then others will be like I don't think that's actually written down anywhere. So, if you think about what Richard just said too, yeah, there's ways to do quizzes in LEARN. If they're the right stakes, people will be less tempted to cheat on them, but on the other hand, do you need to grade them all when we ask what's formative in what summative? Maybe doing the quiz can be formative, and then a report about where they felt stuck and exactly how they felt stuck and where they overcame it and where they couldn't is what you grade. I know that sounds weird to some people, but it seems to be one of those things that kicks in that meta-cognitive brain muscle. That's not a muscle - using a metaphor.

KYLE:
I'm just going to say as well, like even that notion of trying to encourage formative quizzing and formative assessment that otherwise, how do we ensure students actually do it, right? I have even been playing around recently with Quizlet. It's another way to construct quizzes for students, but just some of the functionality of that tool that differs from the standard LEARN and some of the different ways to design quizzes like there's like almost kind of game, like an interesting matching one that kind of times how quickly students can match terms together. Like it does it just enough that it's different, and sometimes that novelty in the different aspect of it can be sufficient to get students to be like, OK, well, maybe I'll invest at least some time in this. I know there's no grade associated with it, but if it's going to feed into things I have to do for a larger assessment later on. I think there's always ways to incentivize formative assessment that doesn't need necessarily have to have a grade associated with it, so just a means of like, well, how do we incentivize it, either through novelty, either through conditions to do something in the future, so you have to complete a couple of these formative quizzes to get access something later, like I think there's ways that we can design experiences that still allow for quizzing. Again, low stakes quizzing where it doesn't matter if one is trying to cheat, so to speak, or to try to circumvent the rules. Like if the opportunities are there to learn from and to better oneself and then it's up to them to benefit from that and utilize opportunities, then so be it. We're creating those

opportunities for learners in that way as well.

TREVOR:
That sounds awfully optimistic, Kyle, that people will actually do the right thing when given multiple options. But I have to say that we're on this panel which actually turns out to be a manel. This may be the first manel that I've been part of at CTE. Sorry, we don't usually do that, but anyway we have a lot of teaching experience between us and so when we have some of these, what might seem like unrealistic optimisms about how students will behave, it does come from kind of trying to inculcate those values in class.

And one thing I can say having been involved in the academic integrity research in Canada in the mid 2000s with like Don McCabe, is that students learn a culture when they get to a university. Most people don't set out to cheat, right? Amanda McKenzie has a great set of slides from the AI office about how many people just are always going to cheat. How many really never would? And then this big, big, mushy middle of people who could be swayed either way by our course design or the culture they find when they get here. So it's on us kind of to like be part of creating a culture where it's shameful to cheat rather than a point of pride, right?

KYLE:
Well, I mean, it looks like we're at 2:29. We have a minute left. I don't see any like burning things come in except [name] saying as well kind of another push for Quizlet, so let's good to hear as one other example as a way to study from a student perspective so that's always good to hear as well.

So maybe we'll start to wrap things up then. Again, the slides are available. It seems like maybe not for everyone, so we will follow up with an email after the fact too and soon those out to you. And again, I will reiterate what we posted on our last slide here about keeping in touch, we always, I think I speak for Trevor and Richard as well that we truly do enjoy talking through the stuff with people and thinking through ways to do assessments and ways to reconceptualize your assessment. So if any point in time you want to talk to one of the three of us or again, your liaison if that's the person you would turn to, or anyone else from CEL, ITMS, the Library, whoever makes sense for you. If you'd like somebody you could brainstorm with, please feel free to get in touch, but we always find it, you know, just fun and fascinating to think through how we might reconsider or reconceptualize that final exam. If that's what makes sense for you, and if it's something you're truly concerned about and want to try to do differently we're here for that, we're here to talk about that.

And otherwise, we hope that you found this helpful and useful, and we'll be in touch. Thanks all.