Transcript for Teaching Talk #6: Student Engagement in the Virtual Classroom

Dr. Jennifer Reniers: Good morning everyone. Welcome to Teaching Talk #6: Student Engagement in the Virtual Classroom. I am Dr. Jennifer Reniers and I am an Educational Developer from the Office of Teaching and Learning and I'm pleased to welcome you here today.

So to begin, I'd like to acknowledge that the University of Guelph resides on the treaty lands of the Mississaugas of the credit. We recognize that the today this gathering place is home to many First Nations, Inuit and Métis peoples and acknowledging them reminds us of our collective responsibility to the land where we learn and work. So, I'm going to briefly pass things over to Shehroze who's going to give us some information today about the technology in the platform.

Shehroze Saharan: Hello everyone, like Jennifer Reniers has said, my name is Shehroze and just a couple of things to remember for everyone is that the webinar will be recorded the first 15 to 20 minutes and it will be made available to you in this coming week so you don't have to worry about taking notes because everything will be recorded and provided to you.

Another thing to note if you haven't attended one of our Teaching Talks before is that you will notice that your audio and video is turned off and it will remain off for the remainder of this session. If have any questions, use the Q&A tab at the bottom of your screen in the ribbon as the chat option has been disabled for you, so all you have to do is ask a question in the Q&A box and as always please remain respectful when asking questions and I will hand it off back to Dr. Reniers.

Dr. Jennifer Reniers: Thank you, I'm so pleased to welcome Dr. Julie Vale, Dr. Ryan Clemmer from the School of Engineering and Dr. Nagham Mohammad from the Department of Mathematics and Statistics. So we're so lucky today to have Julie Ryan and again talking to us about and their experience with student engagement in the virtual classroom and so they'll talk for about 20 minutes and then we'll have about 25 minutes to half an hour for a Q&A afterwards so take it away Julie and Ryan.

Dr. Julie Vale: Let me just get the presentation going here. Alright, okay. So I'm Dr. Julie Vale and I'll be speaking with Dr. Ryan Clemmer and he's going to start our presentation.

Dr. Ryan Clemmer: Good morning everyone I'm Ryan Clemmer from the School of Engineering as mentioned, so today's talk is the talking about the challenge of engaging classes in a virtual classroom.

It's difficult at the best of times to keep students engaged in a large class when you're face to face and it becomes even more difficult when it's online, particularly when you're missing some of those feedback cues that you get. If everyone's got their heads on the desk sleeping, that may be a good time to change things up but when you're staring at a bunch of blank screens then it's difficult to see if people are engaged or if they're in fact there. So, today's talk will look a little bit about some some of our experiences and some ideas that may build some engagement within the classroom.

Julie and have I done some research over the last few years and in fact, we've got a paper that will be published in CJ SoTL hopefully in the fall as we've just submitted the final edits and so this slide here is a bit of a real quick summary of some of the research that we've done. Julie offered a remote hybrid face-to-face lecture a few years ago and we did a survey of the students we looked at their grades and so we had combination of some quantitative and qualitative feedback.

One of the biggest things that stood out was over to the left here where there's plotting of the self-reported GPA and the students grade, so naturally there is an expectation that as the students GPA is higher, that they should achieve a higher grade. One of the things that stood out at this is that for those students that had attended more than 75% of the classes performed better than the students that attended less than 75%. On average it was about a 12% difference in grade. 75% was a Likert scale that we used in the self-reported surveys, but generally the nature of the questions tended to be reliable to ask students of their attendance. Because we had smaller sample sizes, getting statistically significant data was a bit of a challenge but this was one of the few statistically significant results that really stood out even with the smaller sample sizes.

So the real important thing here is that if your students attend class, just by showing up they can do on average 12% better. Now when we looked at what was the effect of students attending remotely or face-to-face, we viewed both groups that attended either primarily face-to-face or primarily remotely and who attended more than 75% of the classes, so that weaker had a similar comparison made here. It's interesting here that attending locally was about 7-8% difference on average in terms of grade, so there was a slight benefit to attending face-to-face so that's the least encouragement for us that perhaps it will be better to get back into the classroom and be in front of the class and have that face-to-face experience. But then the interesting thing about this was that despite maybe being at a disadvantage, the fact that students could attend lecture at all - that benefit outweighed the potential negative impacts that they may have had by attending remotely.

otl.uoguelph.ca
otl@uoguelph.ca
Day Hall, 99 Trent Ln, Guelph, ON N1G 1Y4

UNIVERSITY of GUELPH

OFFICE of TEACHING AND LEARNING

Dr. Ryan Clemmer: This was also a summer where students would have been on jobs and trying to fit in classes over the lunch hour so there's a lot of mitigating circumstances that may have affected the performance of the remote attendees, whereas those on campus could focus in class and maybe have more time to dedicate to their studies.

So, we did a qualitative study and we're looking at now what are some of the reasons why students attend lecture and one of the primary things that came up through all the various questions of what improved their learning and what were some of the reasons why they came to class and the biggest thing that came out for our study was that students attend class to be able to ask questions and have those questions answered. Because it was a remote delivery there was a chat feature available and so this was critically important for the students that were attending remotely because it gave them an opportunity to ask questions. Interestingly it also helped some of the students that were attending the lecture physically, face-to-face because there were some students that felt uncomfortable asking their question by providing the chat that allowed them to ask a question without you know feeling self-conscious or having that anonymous ability to ask those questions so for us the real key finding for attending that class was the ability to ask those questions and have them answered and have that instructor interaction, even if they may not have answered or asked those questions all the time.

Dr. Julie Vale: So the research that Ryan was talking about was from a class that I taught quite a few years ago. So, when COVID hit and we had to switch to fully online I did my best to take my learnings from that research and that experience and applied them to the the class that I was teaching. So I was teaching ENGG*1500, which is a linear algebra course approximately 250 (two-hundred and fifty) students in the class and so I delivered it in a very similar way to how I delivered that hybrid course in the summer a few years back.

So, I projected my notes which I wrote in OneNote on my tablet (live writing) so it's not static slides that I'm just talking over and though I did not provide video of myself, I did provide full audio and there was live contact and active learning via the chat. So it's been a few years since that summer course and Cero technology has gotten a little bit better, so I also thought to myself how can I bring in some really simple built-in tools that we have available to us now.

So I was using Zoom and I'm going to go through three very straightforward Zoom tools that I used to help and we're going to touch on a couple more advanced things later at the end of the talk. The chat pod was a really crucial tool where students could type whatever they wanted into the chat pod and I would respond verbally. So, you can see here these are real questions that were asked during the ENGG*1500 chat.

otl.uoguelph.ca
otl@uoguelph.ca
Day Hall, 99 Trent Ln, Guelph, ON N1G 1Y4

UNIVERSITY of GUELPH

OFFICE of TEACHING AND LEARNING

Dr. Julie Vale: I have changed the students names to retain their privacy, but you can see that they're asking questions like:

"do you have to write both possible answers",

they're thinking forward to exams or they're asking questions about the actual content that I was talking about that day in lecture:

"how did you get the diagonalization and do we just put the eigenvalues on the diagonal?",

and then you can see the next statement has got it. That's because I've answered verbally and the student has the opportunity to reply to me in the chat to confirm that they understand and then the last couple comments are when I actually throw out to the class in the same way that you would do in face-to-face, you say:

"okay how would we do this?"

then you have to pause and patience is crucial when you're doing online teaching because you have to pause for a lot longer than you think you do and then you wait for the students to write something for example in the chat like this fictional student Adam has done this is x is on both sides then I asked for a clarifying thing and they've said: "in the front".

So, you can have that interaction through the chat pod that you would normally verbally do in the class, but this requires a little bit more patience on your part. The other really cool thing that Zoom allows for...

Let me backtrack half a second. Pretty much any one of your online tools is going to provide a chat pod tool, and I strongly advise that you use it like Ryan pointed out our earlier research indicated that that was a crucial component to the students learning. In Zoom you have these nonverbal reactions so on the top left here we have what the presenter or the host will see and on the bottom right we have what the participant will see and so they can click yes, no, raise hand, go slower or go faster and then you as the presenter - you'll get a little number on top of these things so in this example we have a number one over the yes so that means that one participant has clicked yes so this is a quick and dirty way to do a poll without needing to do a poll you can call out to your class and it asks if every is everybody ready to proceed and then they can click yes or no - it's completely anonymous and if you have all yeses and no noes then away you go and then you can just click "clear all" to make sure that any time you ask your next question that you're getting the clean set of answers if you wish.

UNIVERSITY of GUELPH

OFFICE of
TEACHING AND LEARNING

otl.uoguelph.ca
otl@uoguelph.ca
Day Hall, 99 Trent Ln, Guelph, ON N1G 1Y4

Dr. Julie Vale: They can also give you kudos, thumbs up, thumbs down, etc... and the raise hand feature is really nice because when you have a large class what the raise hand will do is it'll pop that individuals name up to the top of your participant list and they can use that as a way of letting you know that you need to stop or slow down because they're typing something into the chat that they need to ask you, so it was really, really valuable because when you have 250 (two-hundred and fifty) students as you're experiencing right now in this webinar, I did not let the students unmute their mic and I told them to please have their video turned off just because things can get silly otherwise.

So the last thing that I want to mention is this annotate feature which was great fun to teach with. It looks like a bit of a mess down in this bottom right corner down here but I'm going to show you a little bit of a video so that you can see how it happens. So, I would start by structuring the questions on the left here and I would say: "okay you know in this example we're looking at complex numbers" and I would say: "a, the natural numbers being the integers see the rationals and see the reals", and then I would throw the question out to the class and say: "okay, well what do these things mean?" and then what the students can do is they can annotate directly on the screen and you can see them doing it here, and they can collectively write down what they think are the answers, so each one of the different colours is a different student happily writing away and providing some answers to us. Again, patience is crucial!

This video is actually double time so this is twice as fast because what it is in real time, but you can certainly just sit there and wait or talk over there watching all of those stuff come up. As people are writing it's cool and you also as the presenter have the capability of completely cleaning the screen off to stop or undo what the students are doing and you also have the ability to turn it off if they start getting silly with it.

A nice side effect of this is that I had an hour-and-a-half lecture so usually at about the 45 minute mark I would take a five minute break and I would actually let them use the annotate feature during that break and they would play games with each other they would play hangman they would play word games, they would talk to each other through the annotate function and it was really nice to provide that social interaction for them in the middle of the lecture using this feature, so it was one of these really cool and positive unintended consequences.

At this point I'm going to hand it back over to Ryan to talk about some of the accessibility issues that you should really keep in mind when you're designing what kind of technology tools to use.

Dr. Ryan Clemmer: One of the main things is because the students could be from anywhere in the world, you just want to be mindful of the requirement of being available during the lecture - the synchronous online lecture, so there's being aware of time zones. The other is despite having the best technology as the presenter, a lot of it is limited by what the students have. I noticed I've got a summer grad course that I've been teaching and I've had an older tablet that I've been using to look to see what the students are seeing, and when I take notes it lags a fair bit, so some of those things are out of your control but it does affect the experience so things like reliable internet, the technology, the computers and laptops - those kinds of things.

There's also privacy issues or family pressures that create an issue. If there's lots of kids or anyone that might be in a room that may not have the best places to be able to work, so those are things just to keep in mind that the students will also have their challenges and we'll have our challenges as well. In terms of some other tools, I was using Zoom for my grad class and I was also using clickers as well. One of the nice features with Zoom, and I'm not sure if some of the others have these as well but when I was using clickers in a regular classroom, I allow students to talk amongst themselves, primarily for answering multiple-choice questions. One of the nice things with Zoom is they have breakout rooms so I have a class of 28 (twenty- eight) students and so I would have groups of you know four or five students and allow them to meet within those small breakout rooms so they could have those discussions so, I just randomly assign students to those rooms and I tried listening in to a few of those discussion groups but when I walked in, I killed the momentum and discussion. It's almost like the parents walking into the room with the kids and everything goes quiet. So, I didn't go into those rooms very often just because I didn't want to disrupt the discussion.

Clickers would take quite a bit longer than what they'd normally take in the in the classroom because you don't get a sense of how far along students are in their discussions because it can only allow for myself to pop into one room at a time, and so my when I would do a question in the regular classroom, it would take a minute and a half to two minutes. It took a lot longer online, looking at about three minutes because I was waiting for the responses to go up and you can close the rooms and then Zoom gives a one-minute warning, so I would after about a minute and a half to two minutes, I would close all the rooms and they'd have a minute to finish up the discussion and complete their responses then and everyone would come back to the main room and then I would take up the question, discuss it look at the poll results and then go on to the next question.

Some other things that you can use as well are online collaboration tools like Google Docs, OneDrive or discussion boards on Courselink. You could have discussion sites set up as well to help students engage with one another, but I think the biggest thing for me with the summer experience is that it does take a lot longer than what you may be used to in a regular classroom so just keep that in mind as you go through your development of your courses.

UNIVERSITY of GUELPH

OFFICE of TEACHING AND LEARNING

otl.uoguelph.ca
otl@uoguelph.ca
Day Hall, 99 Trent Ln, Guelph, ON N1G 1Y4

Dr. Julie Vale: We're going to hand it over to Nagham now.

Dr. Nagham Mohammad: Good morning, I'm Nagham and today I'm going to continue with how we're going to engage students if we have very large classes.

So, we going get to the point where you would say: "okay I want to engage my students and I want them to follow up my class, my teaching and also I want to make sure that they understand the materials". And I'm going to teach online class if it is either synchronous or asynchronous or how I'm going to engage these large classes.

Let us say it's not just 100 (one-hundred), 200 (two-hundred) or 300 (three-hundred) students, maybe there are more than that, so how would I effectively engage them, keep them focused on the class and make sure they are following along with the lesson. Because we will be teaching online, I don't whether students are actually still in my class and are listening to and engaging with the lecture. Do they feel that their class is interesting and are actively listening and they love the class? All these are some of the things that we will encounter when we teach in an online format.

So, one way is to engage our students, because if they can connect, think and feel excitement for the classes, then they can learn the material. Another way to keep them in a class is actually using classroom response systems and a classroom response system. If you search for some, you'll find there are numerous systems and it becomes confusing when deciding the right one to use. The popular ones that are in the University of Guelph's repository include iClicker, Top Hat and even publishers of many textbooks we use have their own systems. So which one are you going to pick? Which one is the best for me? Is it iClicker? Is it Top Hat? The point is that this decision will depend on what features you do or do not want to use inside your class.

For example I used iClicker for almost four years and in Waterloo University and when I came to Guelph University I started using Top Hat. With iClicker, if you are thinking of using iClicker... and by the way, I conducted two studies related to iClicker, one of them as an observational study and the other one as an experiment related to the experience of the students and how effectively the software engaged them in an online course delivery and how their grades were presented along with their learning process. Now what we got from all these studies was that engaging the students using this tool proved effective and it showed that it was not only going to help them learn the material, but was also going to help them to feel that this class is interesting and that is going to affect their grades at the end.

Dr. Nagham Mohammad: So, which one will you pick among the options? Am I going to pick iClicker? Am I going to pick Top Hat? With I clicker I used a remote, but we have some of the issues with that. Some of the issues are related to the students and them forgetting to bring their remote to the class. Sometimes they patrol off and sometimes we have an issue as an instructor, you can find or you can see that some of the students bring another remote, and these are some of the issues that we had. Some of the problems that we had related to using the iClicker were the remote, then we would also use iClicker cloud, which is not- what is that going to be? An app they can download in the future? Could they download it on their cell phone or tablet or whatever? Now that's also helped the students not to forget to bring their remotes and all that stuff.

When I use Top Hat, the features that Top Hat has is actually more than iClicker. With Top Hat, you can assign some of the questions to students, even if they are in a different time zone, so it's not that you are necessarily teaching at the same time, but you can accomplish your task and the students can answer the question whether it is multiple-choice, true/false or a written question. You can assign these questions at different times, and what I mean by that is you can assign the questions to appear at different times, namely when you are talking and asking the students a question at the same time which is going to help a considerable amount. I believe that iClicker does not have this feature, so that's why I said if you're going to pick one of these tools, make sure it's going to actually work nicely with your course and lecture format.

Now, from my previous two studies the students actually love using these systems and the same applies with Top Hat. When I use it, I found the feedback from the students to be very positive. They loved it, but the most important part about these systems is that all of them are anonymous, so the students will not feel embarrassed to answer a question if that question was wrong. They love that feature with this type of system and they also love that they can follow the material in an organic way, so they will be able to answer your questions easily.

I recommend that if you are looking to use any of these options for huge classes or even multiple sections, make sure that you are the only one setting up the questions or the other faculty are using the same number of questions in each class. For example, if I'm going to teach a class and I'm going to give the students two questions, the other instructors should do the same so that it is consistent so that the students cannot complain later that one of the sections are giving them more questions and another is giving them less. This is one of the issues that you are going to face. Now I try not to give them long answer questions with more calculations I try to actually give some concepts and questions that the students will have difficulty to understand.

UNIVERSITY of GUELPH

OFFICE of TEACHING AND LEARNING

otl.uoguelph.ca
otl@uoguelph.ca
Day Hall, 99 Trent Ln, Guelph, ON N1G 1Y4

Dr. Nagham Mohammad: In this situation, you understand whether your students are following you and whether your students understand that concept or not. Now one of the things that I really recommend is actually giving some marks for these questions. Not just for participation, as the students will not care to follow up with the materials. What I've done is given the students 5%. I'd give them a small percentage like so and with these marks, what I've done is given them two points for each question - one point for participation and one point for the correct answer. I've done it this way because I had previously given marks just for participation and I noticed that when the question was available right away that students would pick any answer, so they actually don't care whether it is correct or not, but when you're going give them one point for the correct answer, then the students are thinking and they start following up with the materials so they can get that one correct.

Also, what I've done is not account for all their questions at the end when I calculate the 5%, so what I actually account for is only 75% of their best answers. This way you don't have to worry about one of the students missing a class and as result, one of the iClicker sessions. There is no accommodation for missing some of these clicker questions and you should be very clear with that at the beginning of the class. So you would tell them: "okay guys, I'm not going include all your clicker questions in the final weighting, I'm only going to count 75% of your question, whether they have a response or not. So if you miss any of these questions, do not worry. This is going to be part of the 25% that you can miss, so you don't need to accommodate anything related to missing some of these questions.

Now, if you find that students are picking the wrong answer specifically - if you find more than 30% of the students pick the wrong answer, try to give them more of an explanation of why this is the wrong answer. Also, try to explain to them why this is wrong. It's not enough to tell them this is wrong and move on, try to explain to them why this is the wrong one why you shouldn't pick that one and this way they will understand the concepts more.

So for me, now I'm done. Thank you guys.

UNIVERSITY of GUELPH

OFFICE of
TEACHING AND LEARNING

otl.uoguelph.ca
otl@uoguelph.ca
Day Hall, 99 Trent Ln, Guelph, ON N1G 1Y4