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Adapting to COVID-19: Using Universal Design for Learning (UDL)  
to Remove Barriers for All Learners

08.12.2020

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## Adapting to COVID-19: Using Universal Design for Learning (UDL) to Remove Barriers for All Learners

Thursday, August 13, 2020

Transcriber: CF

Dr. Seanna Takacs: Hi everyone. Thank you for being here. It will be our pleasure to present some ideas on the Universal Design for Learning as a means for removing barriers for learners as we adapt to COVID-19. I'm Dr. Seanna Takus. I'm so excited to present with my colleagues.

Next slide?

Before we get started, we would like to have our territorial acknowledgment. We are at the KPU, on the unceded and traditional lands of the Kwantlen, Musqueam, Katzie, Semiahmoo, Tsawwassen, Qayqayt, and Kwikwetlem people. We have 4 learning objectives today. We will look at recognizing barriers in the online classroom. We will look at how design thinking can be used in online classes. We will look at ways to mediate barriers using the UDL framework.

There will be many concrete ideas you can come away from this webinar with. There will be a lot of time for Q&A as well. Next slide, please.

First, we will talk about what UDL is. Jun will take us through design thinking which is important to UDL. We will talk to online barriers. Next? We will talk about UDL for online learning to mitigate some barriers is some things to try. You will have a chance at the end to hear about these concrete ideas, ask questions, and this is where Arley Cruthers will jump in. She's tried a ton of these ideas this semester. She's tired but fresh in her thinking on UDL after this semester.

We're appreciative she's here to share our experiences today. Next slide, please.

Let's talk first about what UDL is. UDL is first and foremost a curriculum design framework. It is a curriculum design framework for addressing a diversity of learners in our classroom. When we talk through UDL, we will talk about how to orient ourselves through the diversity of learners in our classroom. You are experiencing this today in having the TypeWell transcription to make this maximally helped by folks with captioning.

As a designer for your classes, the idea is that you develop maximally accessible curriculums that you and the student interact with. One flavor that Jun and I like to bring to our UDL work, and Arley as well, is to think of the classroom as an ecology. Students and instructors are interacting equally with the curriculum design. UDL is a curriculum design approach to remove barriers. The systemic piece can be key.

That approach includes clarifying learning goals and provides a flexible instructional environment. The flexibility is achieved by focusing on the diversity instead of individual learners. We'll get into that in a little bit more detail later, next slide.

There are a number of UDL priorities. The first UDL priority is teaching to the margins. By that, we mean that before we even start designing and teaching, we have ways of imagining what that diversity will look like in the classroom. There may be students who may not be able to access the classroom or instruction for some reason. In teaching for the margins, we move beyond a margin of disability.

Especially with COVID, and this rapid shift to online learners, we look at who barriers pop up for. I think we've all seen how surprising that can be. Next slide, please.

Another priority in the UDL framework is being proactive versus reactive. What are we likely to see? What barriers might there be? We plan for that instead of reactive after the first. The third priority is are remove barriers and provide access for as many students as possible. Next?

The 5th priority in the UDL framework is to clarify expectations. That has come to the front during COVID time. You're having clear goals and expectations. Have a clear syllabus, course presentation, etc. Help students understand what expectations look like in terms of engage in the class. What do expectations look like in terms of success? Also have students be given the opportunity to express their own expectations.

Understand how those expectations look in terms of having a system or ecology in the classroom. Another part is providing flexibility and options. We will get into more detail about that. UDL prioritizes varied assessments. You're moving beyond the idea of having a paper, midterm and final. Are there other assessments, formative assessments, we could use? What beliefs to students bring to the classroom environment?

This is crucial during COVID and the rapid pivot to online. Understand how students are meeting the instructional frame and the assumptions they bring to the class. You will show how you have flexibility and options, what the options will look like, etc. A key priority to creating expert learners. Expert learners can understand their sense of engagement and understand.

You can really see the expert learners at the end of the class. They may say, "I didn't do well. I didn't work hard enough or ask for enough help." You can have non-expert learners do well. You can contribute that to luck, or you may like them. Expert learners are aware of how they're learning, managing their expectations and engagement, and they can reflect in a metacognitive sense. We'll get into that more. That's key in the UDL framework. Next slide, please.

Junsong Zhang: Let's talk about design thinking a bit. We're talking about design thinking because Universal Design for Learning is actually user centered. UDL came from architecture not education. You can access the buildings easily.

As an educator, we are expanding it. We are working as architectures and thinking about how to build our courses and curriculums so that more people can access it. The key is the users. Who are the users for this course?

Like Seanna said, we think of this as ecology. It's your students and yourself, who are teaching the class. You both use the design of the course. You continuously improve and collect

feedback. That includes student feedback and yourself.

Design thinking is a framework for thinking about how to design human centered learning and learning experiences. There are five steps in design thinking according to Stanford University. The first step is to empathize. You need to understand how your users think, yourself and your students, how they think, and feel. You develop knowledge about their motivation and experience needs.

Sometimes we develop a user persona to describe the user motivation experience, the needs of your students, etc. Sometimes you can do an interview, look at history, or just talk to the students observed.

The second step is to define. You're analyzing your findings and synthesizing them into an easily understandable framework so you can define the problems. You might be able to identify multiple problems in this define stage.

Since we have limited time and resources, and to be more practice, it's important to identify the problem you want to talk about. I'm sure Arley will talk about this more. The next question is to ideate. You brainstorm solutions. How do you address the problems through the design phase? It's easier when working with a team so you have different ideas.

If you're working with yourself, you can do some visualizing or do a simple sketch to communicate with this your colleagues or yourself. It helps you identify the idea you're having. Then you have a prototype. This means you make your ideas more tactical. You build or try something. The education learning design would be to build something on the system, write a document, etc. Try something simple and low cost. Prototype doesn't require you to build a high fatality or whole test.

You then do some testing. You gather ideas how you feel about this. This design phase is iterative. Once you are done with testing, you go back to empathize. This is how my students feel, think and effect. That is the gist of it. It works out to do an activity to design a wallet. For this workshop, we can only give it to you at a very high level. If you're interested, Seanna and I can answer questions later. Next slide?

Dr. Seanna Takacs: You may have noticed this yourself. Typically, barriers to online learning tend to cluster around two locations. First, there's mapping the online environment. This has to do with actually developing a cognitive map of what the online environment is going to look like. What kinds of projects am I going to have? What will the exams look like?

A huge one is where to locate the content. What's key is structuring the content. One of the things is where we're locating the content, how to access it, if we can refer to it easily, can we get back, will the video close the window if I go to it, etc.? You then have the due dates, when the due dates are, how that looks according to the calendar and that kind of thing.

We know the mapping of the online environment has to do with people's spatial ability. Working with the online environment, you are helping students gain a spatial sense using

graphing, colors, etc. Arley has experimented with this quite a bit so she can talk about it. That's one of the largest barriers to the online learning. The second barrier is feelings of isolation.

Again, you're understanding the classroom as ecology. Those feelings of isolation count for students and teachers. There's less knowing how to engage. There's less, if any, nonverbal social feedback. Lots of students aren't even sure how to ask questions in an online environment. Am I bugging my instructor by sending so many messages and emails? The instructor can feel remote and unavailable. There's the lack of attachment and feeling that the instructor is out there in the mist.

We get lots of feedback from instructors who feel the same way. Students also feel remote and unavailable. I think that's why there's an emphasis on keeping cameras on, staying in touch, etc. There's a huge emphasis on engagement right now on this. I think this is where the UDL framework is helpful. We want to stay in reach of each other and emphasize that today. Next slide?

One of the ideas is that many barriers emerge because of LMS. Be careful of how the learning management system works. It can supplement human agency. We bow to the LMS and what it will allow us to do. We want to be careful, generally speaking, about how we're making pedagogical decisions. Are they made in the confines of the LMS? Canvas will or will not let me do this. Moodle lets me do grading this way and not that way.

Are we being constrained by the LMS or allowing human agency for ourselves, the instructors, etc. and making discussions based on pedagogical practice instead of what the LMS will or will not let us do? Next slide? Jun, do you want to take this piece?

Junsong Zhang: Before we go into the framework of UDL, we want to be clear of our mission, why we're talking about this, and why we're having this decision today. We want to provide this framework for your students. How can we be more explicit about how to engage students through authentic design? Of course, the course content can be text based. It doesn't connect to students. Students may not connect because of the content or the instruction.

It's important to think about how to do that. With UDL, we can think about how we do that. In the special time of the pandemic, we want to engage in the ethic of care. We talk about how to take care of ourselves and our students. Next slide?

I'll briefly talk about the UDL framework. UDL framework is not a problem yourself. It doesn't solve problems for you. It's a design framework where you can take a look to see where your design can start. It offers a lot of insights and principles so you can have a fresh look at your curriculum or course.

UDL is divided into three categories or aspects. The first is the why of learning or the engagement. In this aspect, we talk about how to engage our students. We have to understand that students have different motivations and feel things differently. There's a lot of diversity around how students are motivated. They have different experiences from learning. They have

different knowledge. Some students are good at language and geography. Others are good at math.

They have different goals. Some want to get a job, or advance their career through academic credentials, etc. They have different hobbies. We want to offer multiple ways to engage them. Offering choices for engagement is a key aspect. We'll give you concrete ideas slightly later.

The other aspect of the UDL framework is the what of learning, or the representation. Think about the presentation. We have more videos with online learning. We are concentrated on text. That's how we have expressed meaning for thousands of years. There's a lot more about representation. You can use symbols, shapes, different language, different graphic organizers, etc. to include more students.

For example, today, we're using closed captioning so it's not just text and voice. You have something to look at. It helps students learn what you are trying to teach. It's important for us to think of the alternatives for different modalities. Sorry for using the word "modality." Sometimes we use modality to mean different ways to learn or present information.

We could use speech, graphs, etc. How do you present your information so students can learn easily? We can then look at how of learning, the action or expression. They try to synthesize and demonstrate information. How you demonstrate it is often decided by you. You say this is an assignment where you write a 2,000 word paper. Sometimes you say you want to make a video presentation. It's decided by you already.

When talking about expression, we want to expand the options available to your students without changing your learning outcomes. It's something we have to think about. Sometimes we have existing outlines from the framework or syllabus. This is a good way to get students to self-regulate, think about the tools they need to use, how to reach from 1 to B, etc.

At the same time, you get to see different assignments which is exciting. As an instructor, don't you feel like it's boring to read 20 papers for this assignment? Wouldn't it be more exciting for you to see a video or graphing design without changing the learning outcomes? That's the gist of the UDL framework. It's how you look at designing your classrooms or courses. You better engage, help your students become better learners, etc. Next?

This is the part where I want to speak briefly. You can find this online. If you look at the UDL framework or principles, it will give you the information you need. I won't repeat myself to that extent. For UDL, from an engagement standpoint, you want to think about how to recruit interest. Students have different interests. How do you keep them interested in the course? How do you sustain that throughout the course? Halfway through, how do you keep them from deciding they've had enough and don't want to take the course anymore.

You want to teach them self-regulation. From a representation standpoint of view, there are three properties. You want them to perceive and learn new information. You can think about voice over, graphics, and text. Providing options is a big thing so they can learn better.

Second, there's the choice of language and symbols. How do they present their ideas? Have you thought about the student being part of the presentation on how to represent their ideas? There's learning of multiple means for comprehension. You use multiple modalities so they can learn the information.

Dr. Seanna Takacs: Can I hop in? I want to tie this fact to the idea of thinking in terms of design. It's really key with the UDL framework to involve students in the process. Sometimes, when instructors first hear about the framework, and providing options, it feels like we'll blow the doors open and allow students to do what they feel like, everything they want, etc. Then you're marking 5 different videos, 2 different interpretive dances, 3 essays, etc.

It's like, "my goodness, how will my assessment look?" When we talk about providing options, those options lie in having conversations with students. They rely on canvassing students for what would be most meaningful for them. Some students may say this is the kind of information they feel like showing in terms of an essay or video.

You will find the options are quite limited. You can work on that with students. You move beyond you blowing the doors open and saying do what you want, and beyond saying do this or this. Make it a conversation with the students in the classroom. Ask what will make sense. What are the available options? How can this be more meaningful for you?

That's what brings along the engagement, representation, and options for engagement and interaction. Thank you.

Junsong Zhang: No problem. Next slide?

The last one is about action and expression again. When we try to get students to finish their assignments, what are the options for them to act on it? It is something they can interview someone on? Can they write something? Does it require bodily activities or just intellectual activities? What are the options among the choices you can have?

Like Seanna said, we want to engage the students. What makes sense for you to communicate? I think it's important they have the autonomy around how they research and express. Research shows if students feel they have more control of learning, they learn better.

The last one is to let them set goals, planning, managing their workload, etc. We'll talk about practices you can take. To do the assignments you want them to do, it's important to help them understand how to break down the assignments. In lots of courses we design, we talk about goal setting. If you're in the middle and end of the term, how do you help your student plan it?

For big assignments, instead of waiting for the last week, how can you scaffold pieces where they provide a template, you provide some feedback, and they don't feel overwhelmed at the end of the course. Do you want to add something here?

Dr. Seanna Takacs: I think we can move along.

Junsong Zhang: These are some ideas we have already tried.

UDL is a framework that includes everything. It can feel like a lot. We want to remind you that you can start somewhere small. Starting with engagement is perfect. Start with 1 or 2 things. Create clear goals for yourself or your students. Think about how your students grow, learn and continue to develop their skills. Think about the alternatives and options.

We mentioned design thinking because it's not a onetime thing. You don't just design this course, it's perfect, and you're done. You have to gather feedback repeatedly. Next?

This is where we have conversations. Seanna and Arley, feel free to jump in. This is the practice I do in instructional design. I give students the opportunity to provide input on how their tasks are designed. That's a good opportunity for feedback. We have a discussion thread where it's a discussion box. Students can go in any time to provide feedback on how to design this better.

What are some choices to you, Seanna and Arley?

Dr. Seanna Takacs: I think this ties into number 2 as well. Another piece of UDL is having meaningful tasks that are authentic. Having students think about real audiences, having a purpose to assignments, a purpose to analysis, and to all of it, why are we doing this? Have a clear rationale. I know Arley has experimented with this quite a bit.

Arley, do you want to chime in here?

Arley Cruthers: In my courses, I experimented on this in a number of ways. Maybe I'll refer to my blogging project because that's freshest in my mind. I wanted to have students blog because I teach applied communications, a business course. Oftentimes, students don't have a lot of business experience.

I was looking for ways to connect. They have to address audience needs, connect visuals, etc. How can students do this in meaningful ways to this? This a pandemic. I want everything to be meaningful and have an authentic audience if they choose. The blogging project was nice because students could blog about something they cared about. That can look many ways.

I had some students thinking about a video cooking blog. You may have tried a recipe online and it's incomplete. Maybe it says, "make a dough." You don't know how to put water into the dough, the texture it should be, etc. because you've not made a dough before. The students made the decision about what visuals to include, links to put in, etc.

It was great for me because I could read so maybe blogs. There were blogs on cooking, Black Lives Matter, capturing their lives, different mental illness things they've experienced, beauty blogs, etc. I learned I should have thrown my mascara away 5 years ago. I was cooking recipes that students posted.



Blogging let students make that learning piece their own. Before they started, I had a proposal activity. They came up with a grading activity for their blog. They reflected on what success looks like for me. My makeup blog that's a video will not look the same as your meditation on your life during COVID-19, your blog on gardening about the inner lives of plants, etc.

Students reflected on why they were doing this, the success they wanted, the feedback they wanted, etc. Seanna and I will have discussions about how I'm going to add more scaffolding next semester when I do this. The real take away was having an audience, having goals, etc. Hopefully this made the course more interesting to them and to me. It was a lot. I've done it before. I've marked 25 of the same papers on the same topic. It's better to learn about different things.

Maybe I'll learn about making chicken adobo in this batch, someone's poetry, etc.

Dr. Seanna Takacs: I have a point about number 5. You're constructing linked tasks. That's theoretically what it is. Arley is constructing linked tasks with varying degrees of difficulty.

When we think about changing our design, we equate diversity with making things simpler or easier. That's not actually the case. Often, students crave things being made more difficult and meaningful. I use the UDL framework where with my faculty members. Maybe students crave a level of difficulty that's not offered. They want to work this in ways that are more meaningful. They want it to be tougher.

They want to take the content in the course and extrapolate to a bigger challenge, something they feel is really a problem that they'd like to work on, etc. A key to engagement is being mindful that there are degrees of difficulty you can work into your course design. That's often hugely engage for students. You're bringing in prior knowledge and experience. Then you ask where you want to go from there.

This is where designing for feedback and degrees of difficulty works a good mesh to student learning. If we want to talk about this more in the Q&A, this is a good site for talking about engagement. Maybe we can go to the next slide and talk about representation a bit.

Junsong Zhang: Perfect.

Dr. Seanna Takacs: Representation is one of my favorite parts of the UDL framework. Maybe I'll take the reins here. [Laughing.]

When talking about options for representation, we want to talk about how content is being represented. Is it just represented in print, hugely verbal, visual, etc.? What modality are we using? Are we having students build, create or construct? Arley will be great to chime in on this. We want students to focus on specific vocabulary terms that will connect to prior knowledge.

I think a lot of folks are using animations, videos, etc. There's a session on HIP [verify] if you want to look at this kind of information. You can provide transcripts. We're highlighting

relationships between different components and concepts. Have students create concept maps, even large ones, that grow throughout the course.

These are the keys on representation. My background is in cognitive science around reading comprehension. There's a lot of stuff about how we create mind maps, representation information, and how nuanced and variable that is. It's an online process. We're really attending to the idea that as we're learning, we may need different types of information in different modalities. Let students have those options and express what they need next.

Do I need to watch more videos, engage in an aspect of the content more, is there something I need to work on more, etc.? That's where providing options for representation come in.

Arley Cruthers: One thing I noticed, with the pivot to online, the ways I did representation pre-COVID, I've talked online before. Students said they liked my video work and said they helped them understand the concepts.

Now I'm teaching a lot of students who are international students and don't have reliable internet actions. I did a lot of video grading because students liked to hear my tone. This semester, I gave students a choice. If I gave them video feedback of their work, they may not be able to view it. I had students do a pre-survey so I knew their technology needs.

The way I taught the course in the past is not the same with COVID. I designed it to be done with pen and paper. If someone has limited access to the internet and a device, they can still do it and participate.

Junsong Zhang: That's a good example. We often face situations where we need to simulate situations for law enforcement people. Paramedics learn by going to a classroom, acting out a scenario, etc. They master the correct steps to do certain things. It's important to think about choices.

As an instructor, do you representation information from a book? Do you use the book so you can read about it? Is it necessary to watch a video or have the instructor demonstrate this themselves? Is it important to have an actor or actress come in so they feel the chaos and like they can't manage it? It goes back to engagement. You don't always need to provide simple, easy ones.

The different levels of engagement are also quite important to representation.

Dr. Seanna Takacs: Go to the next slide?

Shall I take this one? [Laughing]

When we talk about providing options for action and expression, we think about building opportunities so that learners can express their knowledge a variety of appropriate, relevant and meaningful ways. You reach a point where students want to demonstrate their knowledge in ways that might be unexpected.

You can throw that open to students and say, "this is my idea and what I want to do. These are my thoughts on this kind of assignment. If you have other ideas or an alternative, you can have a class consensus on that as well." We will provide other examples of that. There are also other ways of addressing problems or issues. There's the idea that there's not just one way to skin a cat.

We can look at problem solving, the challenges, the alternatives, etc. We can do that in the classroom environment. It's also a good opportunity to give feedback in different formats. It's also a good way to help students organize course content. Action and expression have to do with that state so key to the UDL framework and learning, goal setting. If I'm trying to get to point A to B, what makes the most sense?

In a typical classroom instruction, the instructor may say here's point A. Here's point B. Here's how I'll get you there and what we'll test on at point B. For UDL, we also look at goals on learning, organizing the course content, and how we will demonstrate that we understand the course content.

It's giving stints more agency in the course process. If you look at point 5, that gives us the opportunity to pose questions to learners. It monitors them not just on the content, but how they come to it. What process have they used to get to that content? In a bunch of statistics courses, I've had a lot of professors who have said you got to the answer or did, but let's look at the process. Let's look at how you got there to see if we can change the process not just the outcome.

That has a huge change on the assessment. The student assesses themselves in addition to us. You also have peer assessment. Arley, I think you probably have some thoughts on this.

Arley Cruthers: When it comes to assessment and getting students to reflect, a lot of what I do involves a piece of ungrading, my ungrading. My background is in creative writing. I want students to move beyond writing, doing some revision, and turning it in. If I want students to try new things, I had to change what I was grading and how.

A lot of what I grade, for example, in one of my courses, we do a big report on design thinking. Students come together and write a report. Their final task is to take what we learned and teach it to someone else in a new way. It doesn't have to be in English. I've had posters, videos, comic strips, and a whole range of things. It's not a video or painting class. It's a communication class.

I'm grading them on a memo saying what they had to do, if they ran into obstacles, how do they address them, and what would they do differently? Someone can take a risk. If I want to do a cartoon and it didn't come out quite the way I wanted because I'm still learning how to make cartoons, they can still get a good grade.

I'm trying to get students to try a process not just get a right answer. If I'm grading them in a traditional format, they will do things they're comfortable with and won't take risks. Many

students, if they get a bad grade in the class, it could jeopardize their grade, pathway to citizenship, goals, etc. It gives students more control over their learning. It gives them the reflection piece where they're graded on their reflection.

Dr. Seanna Takacs: I know I'm not supposed to look in the chat. Daryn looked like he posted a cool tool. Concept maps are a great idea around both representation, along with action and expression.

Arley Cruthers: Seanna and I just worked on a project creating a big mind map for students. It was the missing piece in the project. Students make connections to the different elements of the course and the different modules.

To answer the question that popped up in the chat, because I teach communication, I am grading them on their ability to write a memo. That's a learning outcome of the course. I grade them on the parts of the memo. I'm okay with higher marks. I would love to give everyone As if that shows that students mastered the learning outcomes.

I grade them for a small piece on whether they used the memo format discussed in class, specific examples, etc. Mostly, I'm grading them on completeness. How thoroughly did they answer the question? Did you use examples from your own work or reflect on the process?

One of the challenges is that there are some institutional challenges about whether or not you have to grade on a curve. It's hard in that particular context. Some ways I've done it, and that I'm doing it this semester, students will come up with creative content. I'll say I want to focus on source use, storytelling and organization. Within that framework, I can assign traditional grades in that way. That might be a way to get around it.

If you can't focus on the process in that way, you can give them some control over the categories you are expressing.

Junsong Zhang: We have a few minutes. I think we've already started answering questions. Feel free to jump in and ask questions. We will answer them in the next few minutes. I will send a link where you can read more about the recent workbook that I helped write if you want more details, if this is too broad for you.

Arley Cruthers: The question was whether I encourage students to keep their cameras on. I don't do a lot of synchronous. I do that for students who want that structure. I have designed my course to be asynchronous. I don't require them to keep their camera on. Some have bandwidth issues. Some don't want to show their house. Others have kids walking around. I noticed that most students prefer to communicate in the chat. I can give you a packet on the framework to answer Maddie's question.

Junsong Zhang: If you have any questions, you can put it in the chat or unmute and ask.

Duane Seibel: There's a question from Gabrielle. What templates are available for getting students to help fill in on the course content?

Junsong Zhang: Can I jump in? You can design the templates specifically for your course. If you're talking about the assignment template, you can draw from previous classes, who did well, or you can write something that is easy for a student to answer.

If you're just looking for student feedback, you don't have to use a template. You can get student feedback. Since we're doing online learning, I would encourage students to have a debriefing section at the beginning and end to discuss things.

Duane Seibel: There was also a question about helping students with dyslexia. [Can't understand]

Dr. Seanna Takacs: UDL grew directly out of research on students with dyslexia. I won't go into detail even though it's very interesting. That's an aspect of variability we would like to take into account. For students with reading disorders, that's the term now, that's where in option for action and expression, and representation is important. For students with reading disorders, coming into content by videos and listening is key.

You can also highlight specific vocabulary terms, have different way of accessing written language, etc. That's important. It's a great example. That's exactly what UDL grew out of. It was the 10% of kids with reading disorders who were able to come to all of the content, had all of the interest and background knowledge, but had that specific barrier to access around print.

In that sense, with the pivot to online, as Jun indicated, so much is print. The print load has really expanded in a lot of classes. That can cause a moderate barrier to become an enormous barrier to some students. Does that answer the question? Then, Laura Lee in the chat has ideas on text to speech apps. Text to speech becomes absolutely crucial here.

Duane Seibel: We're at the end of our time. I want to thank the facilitators today for spending time with us and sharing this information. I would like to thank each of you for participating. You will receive a transcript of this session with materials afterwards if you signed up for it. You can also go back and look at all past and future webinars at the link provided on this slide.

I encourage you to go to the BCcampus website and sign up for newsletters. I want to provide a shoutout to Kelsey for providing our tech support in the background. We also had TypeWell for the first time. Thank you Christine, I don't know if you watched but wow can she type.

Junsong Zhang: Thank you.

Dr. Seanna Takacs: Thank you everyone for coming.

Duane Seibel: We will allow people to leave the room at this point and have a quick meeting.

[Transcriber released]