

Transcript for Fostering Inclusive Learning Environments: The Synergy of Generative Artificial Intelligence and Universal Design for Learning
BCcampus FLO Lab workshop hosted on June 26, 2024
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Host: Helena Prins

AFSANEH SHARIF:

Welcome, everyone, to our session. I'm very excited to be here. My name is Afsaneh Sharif. I'm a Muslim and uninvited settler in Canada from Iran living in Canada for the past 27 years. I'm a racialized senior project manager faculty liaison at UBC, currently leading a campus-wide project called UDL Fellows Program. I am also serving on the B.C. Digital Learning Advisory Committee as the co-chair for the Ministry of Post-Secondary Education and Future Skills. Today, I'm very excited to be here to exchange my knowledge for making our community and teaching and learning environment more inclusive and accessible. I'm here with my colleague Lucas. I passed it on to him to introduce himself.

LUCAS WRIGHT:

Hey everyone. I'm Lucas Wright. I'm a senior educational consultant at the Centre for Teaching Learning and Technology at UBC, one of the areas I've had the fortune and privilege to work in is around generative AI in the past couple of years. I've been doing quite a bit of professional development and research in this area. As I do these sessions, I think the most exciting part is that I learn from everyone and I hope to share some of that learning with all of you today. UDL and generative AI is a really important space to me. As someone with very poor written output since I was a kid and ADHD as well, I've found that I've always struggled with writing and to have a tool that allows me to write an email without feeling embarrassed about it has been really powerful for me and I think that's part of the reason I'm so excited about this space. Glad to meet all of you.

AFSANEH:

I want to acknowledge that UBC has different sites. We are going to acknowledge two of our main campuses, UBC Vancouver, which is located on the traditional ancestral and unceded territory of Musqueam People in which you Lucas and I work. And also UBC Okanagan located on the traditional ancestral and unceded territory of the Sylix.

LUCAS:

Can I just add one thing to your land acknowledgment before you finish it, Afsaneh? Let me know when you're done.

AFSANEH:

Yes. I would also like to acknowledge the global crisis, which is impacting all of us in different ways. Pass it on to you, Lucas.

LUCAS:

Yeah. I just wanted to add on to that. I think as we think of generative AI, one of the challenges is what an extractive space that it can be. Researchers like David Gardner link it to neo colonialism and the extractive nature around Indigenous knowledge. I'm just going to share an article with you now that was released yesterday about data stewardship and extractivist AI.

HELENA PRINS:

Thank you so much, Lucas.

LUCAS:

What does extractivist mean? It means the idea of extracting knowledge without attribution without permission, and in the case of generative AI, it would mean repackaging it and selling it. A very simple example of this would be at UBC, we have quite a few Indigenous-developed and Indigenous-focus resources. Many of those we know have been caught up in the GenAI training data, and now you can repackage those, create worksheets with them, etc., whereas that doesn't really have permission around it. Someone else is profiting and using this knowledge and data that wasn't intended to be used in that way.

AFSANEH:

For today's session, we are hoping to cover the core principle of UDL and how you can apply it in your curriculum course programs, as well as your daily practices. Talk about GenAI and how GenAI can help us to achieve some of those goals that we set through UDL to become more inclusive and accessible. Articulate the value of integrating GenAI into UDL framework and at discussing two of the benefits of the GenAI and UDL integration. And also to be able to incorporate at least one GenAI tool in your lesson plan in one of your activities and assignments. We will have some hands-on activity throughout the workshop for you as well.

Since the title of our workshop today is about creating fostering inclusive learning environments, we wanted to just say what we mean by that. It's an "environment where all students feel that their differences are valued, respected. They have equitable access to learning, opportunity, resources, support, and the learning environments are designed to accommodate and celebrate diversity, ensuring that every student feels a sense of belonging." Which helps their mental health as well as their participation. That's what we wanted to share with you, and that's the perspective we are taking to move forward.

We would like to start with these two quotes. Since the session is about UDL and AI, we wanted to say that there are two things that we want to highlight. One is how as an educator, we focus on our students training their minds to think, and critical thinking is one of the key things for us to ensure that it's happening in the teaching and learning environment. This quote is from Albert Einstein. That's one thing. The other one is from Aristotle, which is "Educating the mind without educating the heart is no education at all." So that the second one was our approach to say that whatever we do is for the purpose of the impact. For us, the goal of integrating AI into

the UDL and actually using that is for more inclusion and accessibility causing more students to feel a sense of belonging, and that's our goal. That's how we look at the education, and we want to make sure that we are educating mind as well as educating heart.

With the introduction to UDL, we are going to start just briefly to talk about UDL, or what UDL is. Talk about the main principles, and then the order of the workshop is that I'll talk about one principle, some of the examples, and then Lucas will get you engaged with some of the tools and some of the strategies and UDL practices that can be done through AI. Starting with UDL, universal design for learning is an approach to curriculum design that can help teachers customize curriculum to serve all learners regardless of their ability, disability, age, gender, culture, or linguistic background. With UDL, the framework was conceived back in 1980 at the Center for Applied Science Technology. You will hear a lot of CAST, which is the Center for Applied Special Technology. I always look at CAST UDL Guidelines because they always keep up to date based on the new research and findings. The main framework was conceived back in 1980 as a result of three conceptual shifts. One was the advancement in architectural design, which was universal design. The other one was the development in educational technology. The third one was the discovery in brain research and about the brain networks.

So now, the question is why we started the UDL. Why even choose UDL? So looking at the UDL and getting into more details, is UDL talking about giving more options and flexibility to your learners, to your participants, and so on. And personally, I don't use it only at the curriculum level. I use it in daily practices. When I'm drafting an email, when I'm thinking and organizing a conference or a webinar. It can be actually some of those practices integrated in daily life and practices. Why UDL? First, it promotes inclusion and belonging. It's responsive to the diversity of learning needs. Back in 2021, there was a project called Beyond COVID at UBC, in which about 100 students, staff, and faculty from both campuses got together to go through a few questions, a few practices based on the lessons learned from COVID and to see and figure out what worked and what didn't, and moving forward, what we are going to do. Some of the things that came out were definitely accessibility, and one of the solutions was UDL. That got our attention first to pay more attention and promote intentionally this framework. It's aligned with our strategic plan, Indigenous strategic plan as well as inclusion action plan. Also at the same time, B.C. Digital Learning Strategy Report about two years ago, I was involved in the committee as well. One of the recommendations is, again, universal design for learning to promote accessibility and inclusion. The overall goal of UDL is that the needs, that we meet the needs of all learners and remove the systemic barriers.

The core principle of UDL, there are three principles. Multiple means of engagement, which is aligned with effective network in our brain. Multiple means of engagement. This principle, focus on the why of learning and emphasize the importance of providing multiple ways to motivate and engage your learners. Second one is providing multiple means of representation, which is about the "what" of learning. It's aligned with the recognition network. It involves presenting information and content in various ways to ensure all learners understand the

concept and your course material and process. The third principle is providing multiple means of action and expression, which emphasize giving your learners different opportunities to demonstrate their knowledge. It's aligned with a strategic network, and it's concerned with the "how" of learning.

Again, going back to what I mentioned earlier, is that the goal is to be able to identify the systemic barriers that may exist in our practices, in our approaches, in our courses, in our unit, department, university. What do we mean by systemic barriers? They are policies, procedures, practices that can prevent individuals from having equal access to a service or fully participate in a situation. An unclear learning outcome might be a systemic barrier, a difficult process for registration or having, you know, a high mark or limitation on an exam in order to pass the whole course such as you have to get 80% in order to pass the course. This can be a systemic barrier. Now, I want to turn it over to you.

If you want to use chat or use your mic to talk about what systemic variants might exist in your course, faculty, discipline, practice. It's just for sharing with the rest. You can use chat. You can use your mic, raise your hand, or if today is not your day, you can even email it to us if you want to continue this conversation. Sometimes when we offer OER, we know that expensive textbooks can be systemic barriers. Oh, I see that Shelly mentions it, "Expensive textbooks, performance requirements, language, assumption about learning happen, clarity, complexity of info presented, funder requirements for admission." Exactly. These are really good points. "Strict regulation, paid homework systems, learning centre tutoring in an open environment that disadvantages neurodivergent." "Face-to-face requirements, traditional assessment, access to technology." These are all great examples, all great examples. The list can go long really, and it's just for us to be able to be aware of this and to be able to see this that is happening and to be able to identify and to see that. What is one thing that I can do to actually remove this barrier and allow one more learner to participate? Thank you all for brainstorming.

A few examples of the systemic barriers here are unclear learning outcomes, one way assessment. Some of you mentioned about assessment, providing information in one way. Classroom events without wheelchair-accessible tables, expensive textbooks that some of you mentioned expensive field trips or the field trip or labs on their own, and lack of transparency and flexibility. Those are some of the examples. Now, with that, I'm going to pass it on to Lucas to talk about GenAI.

LUCAS:

Wonderful. I just see a question or a comment in the chat from David. "But if we remove something for accessibility, will we be disadvantaging students for the workplace?" I think that's one of the strengths of UDL that we can talk about a little bit. But sometimes when we change one thing, that can definitely impact other folks. One thing that I really like about UDL is it adds multiple different avenues for interaction, for representation, and that can help all users. So let's do a quick introduction to GenAI in the context of UDL. Before I jump into that, I'd like to

do a quick vote just to see where everyone's at currently thinking about generative AI? I don't want you to click Enter yet. But in a moment, what I'm going to ask you to do is put a 1 in the chat if you've hardly used generative AI, a 2 in the chat if you use it here and there, and a 3 in the chat if you use it regularly. Can I get you now to put your numbers in the chat? Wonderful. So we have a couple ones, a number of threes and some twos. I'm seeing this is a big change. I think when I first started doing these workshops, most people were a one. And within this introduction to generative AI, I'll try to touch on areas that will be applicable to everyone. If you did list yourself as a one, I'm going to share a worksheet with everyone in a moment. Follow along with the worksheet as well, rather than having to follow exactly along with me, you can play along with the worksheet.

It's wonderful, I see in the chat lots of names that I recognize. I won't call all of you now, but it's great to see.

I think one of the keys when we're thinking about generative AI and when we're working with generative AI is to play with it and is to have an opportunity to critically think about it, but also an opportunity to play with it. To make that easier, we've created a worksheet. And I've just put a link to the worksheet in the chat. You can also use the QR code to access the worksheet or put in the tiny URL there. What you'll find on the worksheet is all of the different prompts that we mention during the session, all of the session activities. When we do an activity, I encourage you to go to that section of the worksheet, try out the activity, as well as all of the resources we've discussed. So to make this workshop more interactive, I recommend that you. It's totally up to you, but you may want to have a tab open for the worksheet, and maybe another tab open with a tool like ChatGPT, MS Copilot, Google Gemini, or even Claude. I'm going to be doing most of my demonstrations with Claude. Sorry, with ChatGPT today. I said Claude because I've been playing with it a little bit recently. I encourage you to open up that and play along as well.

What is generative AI? Generative AI is artificial intelligence, as we know, artificial intelligence is not new. Things like Netflix recommendations, self-driving cars, we've had it for a long time. Generative AI is also not that new. However, I think in 2022, generative AI started developing in a way that really caught everyone's attention for its ability to produce natural language. A couple of things around generative AI. Generative AI uses training data from the internet. Some of this data has been collected in web archives like Common Crawl, which goes back about 13 years of select websites that were archived. It also uses Books database. ChatGPT-3.5 uses a database called Books3, which has 186,000 books in it. There's a lot of contention around that database because a lot of these books were actually copyrighted. So using this data, generative AI uses complex word prediction and vectors in order to predict a set of words. And it's a very complex word prediction. I think at the start when ChatGPT-3.5 came out, we're hearing terms like, this is just a stochastic parrot or a fancy auto complete, but anyone who's played with these tools understands that the language created by these tools can be quite sophisticated and human sounding. And by language, generative AI can generate text, it can generate images.

It can generate videos, which is a growing area in some cases. Here's an image on the slide that just gives us an idea of how the word prediction happens within a generative AI model. Before we go on and talk about generative AI, I think it's also worth locating where we are at with generative AI right now. I like to think of this as an MS-DOS stage for generative AI. Right now we see these very open chatbots. But very quickly, we're going to see generative AI integrated across multiple programs we use. I'm already using Gemini integrated within my Gmail. So when I get an email from someone, I can just click, Generate response and generate or reply to them. But we're going to see it integrated in Microsoft office products. We're already seen it integrated in tools like Facebook. We're also going to see a lot of custom software. So what I love about this space we're in right now is it's a space of exploration where we can play with the tools before the developers get to it too much and change it. But just keeping in mind that we're at this relatively early stage. And another point around the early stages, the researcher, Ethan Mollick. I'm not sure if you've read his recent book called "Co-Intelligence." He has a good quote that this is the worst generative AI you were ever going to see. We're also at an early stage in terms of capabilities.

Can I get a thumbs up using your reactions if you've seen this picture before? Use your reactions, give me a thumbs up if you've seen this picture. I see one or two. I see a couple of thumbs up here. That's great. And I see an X as well. This picture is an illustration called Théâtre D'opéra Spatial, and it's of note because in 2023, it won an art competition at a state fair in the US. Why this was interesting was it was created with generative AI, and another fascinating part of this is that in the United States, AI cannot receive copyright. It was not able to actually take the award for the competition, but it raised a lot of eyebrows in terms of AI art, what it could be, etc. But why I'm showing this image today is that in the article in the "New York Times," they talk about how this image was created. And the creators of the image said it took them almost two weeks of prompting to develop this image. The reason I'm sharing it is that when we use GenAI and we're trying to figure out what the capabilities of these tools are, prompting is really the magic sauce. Prompting makes a difference between a generic answer and a very sophisticated output from the tool. If you look at my virtual background, you'll see a picture of a place called Atlan, B.C. That's where I grew up incidentally. Maybe a thumbs up, if you've ever heard of Atlan before. I always like to see who's heard of Atlan. It's actually helped me connect with a couple of people from my hometown over the years. But what's interesting about prompting is I went up to Atlan last year, last summer paddleboarding, I really liked to paddleboard. And I asked ChatGPT to tell me where I could paddleboard on the lake. It told me to take my paddleboard and I should go across to the glacier. If you've ever been to Atlan, the lake is 70 miles long. It's the biggest natural lake in B.C. It's a glacial lake. It has lots of wind. That paddleboard trip would not have been successful. So you should basically never cross the lake directly on a paddleboard. Then I asked it to act as a guide with experience guiding an Atlan with an expertise in that area, and tell me how to get somewhere on Atlan Lake starting at First Island. I added some specificity to my prompt. I also got it to act as a role. ChatGPT responded, "You shouldn't go across the lake. If you want to do that, you're going to have to go

to the south side of the lake and cross there." I got a much more sophisticated response just by using prompting.

Part of one of our themes today or underlying themes is how we can use prompting to improve the output we get in these tools. The final thing I'll say about prompting before we go a little bit farther, it's a really fascinating skill right now because as new tools come out with generative AI, it seems that prompting is going to be less important. It's a very valuable skill today, but in one year's time, unless you're a developer, you may be accessing these tools without requiring prompting. However, for today's session, I'm sharing a model for GenAI prompting. This is a model that I've developed with researching other models, as well as getting generative AI to help me create the mnemonic here. This is the actor model for GenAI prompting. I encourage you as we go through some prompting activities around UDL to try this model out in your prompts. The first step is to assign a persona. What we found out with generative AI is that by assigning the model a persona, the output tends to be better. This can be anything from "act as an expert in web accessibility" to "act as a first-year student," and this will really change the output we get. Secondly, construct the output. So include the desired output format specifically. This can range from anything from "write something in three paragraphs," to "create a CSV file." So by helping it with the output, we can really nuance what we're getting. Number three, details in your prop. So by including more details, you're going to get a more accurate output. Offer examples, train the model with your own examples. I create a lot of learning objectives using generative AI. What I often do is put in four learning objectives and say, create a learning objective similar to this one. And finally reflect and refine. What research has found with generative AI is that by asking the models to show their work, to say things like, "What criteria did you use to get this output?" The output itself tends to get better. One of my favourite approaches or one of the approaches I find most effective is to go through refinement loops with these tools. What I'll do is I will get it to produce something, get ChatGPT to produce something, and then say, "Act as an associate dean, critique this email. What criteria did you use to critique it? Now rewrite it based on that criteria." By doing these loops, we can improve the output. Those were just a couple of things that I wanted to share related specifically to generative AI.

But with generative AI, I think with any other technology, while there's a lot of excitement, we're seeing these same systemic barriers and issues and barriers being reproduced with the development of these tools. A couple of barriers were seen right away. One is pay to pay inequities. Recently, actually, this morning, I downloaded and paid for the new version of Claude. And currently, what I'm reading is that's one of the most powerful generative AI tools, even more powerful in benchmarking than ChatGPT-4 Omega. It costs \$29 a month. How do we deal with equity when there seems to constantly be new models that come out that perform more accurately and are more sophisticated, but they're pay to play. Number two is accessible interface issues. So I had the experience of teaching a class recently and someone was using a screen reader, and they were finding ChatGPT was really difficult to use with the screen reader. We actually had to move to the mobile app. MS Copilot is also really problematic in terms of

visual accessibility. So we're seeing these barriers recreated. Number three, especially when we get into prompting, there's huge skill inequities being created. And when we think about our students, some students are going to be able to prompt these tools to make them sing. Other students will be using generic prompts, and that's totally going to determine the output we get. I was recently reading a Reddit thread, and students were talking about plagiarism and how challenging academic integrity was right now with so many students using generative AI. And some of the students said, Oh, it's easy to tell if it's used, and other students said, "No, no, no, I use you know this Lambda 3 that I've downloaded to my computer, and I've added these system prompts to it, so it sounds completely human." So different students are going to be able to submit more authentic-sounding work to us as well. And finally, we know that these models are biased. We know that they stereotype minority groups. We know that they erase certain groups, and we know that they tend, especially in the image generator to develop biased content. So again, with something new, we're coming across new barriers and new issues to deal with.

But I think along with that, in terms of UDL and in terms of accessibility, we also have a lot of opportunity here. And three of the opportunities I wanted to talk about, one of the main opportunities is personalization. Generative AI is a great way to personalize content and differentiate content for different learners. We can think about differentiating assignments and assessments, and we can also think of the idea of scalable tutoring for our students. The ability for each student to have a tutor that they can use, and we know that this can give them a more personalized learning experience.

We're also starting to see generative AI used in some very specific ways that promote accessibility and inclusivity. Can I get a thumbs up if you've seen this tool called Be My AI before? I'm just going to take a look in the chat here. While I'm on that point, I saw a comment from Dave about the environmental cost of generative AI. Absolutely, I think this is a new barrier: the cost of creating these servers, the cost of the water cost, the carbon cost of running these tools compared to a search engine. BE My AI is a tool that used to be done through crowd sourcing and it's for people who are visually impaired. They can go into a store, for example, if they saw a dress, take a picture of the dress and say, what colour is this dress? Previously, it was crowd sourced. People would jump online and tell them the colour of the dress. What generative AI now has allowed with Be My AI is that using computer vision, people who are visually impaired are able to get generative AI to visualize their environment for them. In this case, this is an image description generated by Be My AI. You'll see it very specifically goes through the image and it's able to explain what the person who's visually impaired would be able to see. A second example is GoblinTools. Again, I'll get a thumbs up if you've worked with GoblinTools before. I'm just going to take a look through the chat here. I see a couple of thumbs. GoblinTools was a tool that was made in the days of ChatGPT-3.5, and it was made by an independent developer. This tool was made for neuro, people who are neurodivergent. And particularly, it's helpful for people with ADHD and with autism. So for people with ADHD, it has something called a Magic ToDo list. What the Magic ToDo list does is it breaks down any task

into multiple other tasks, and you can kind of keep going down. So in this case, study for an exam, it breaks it into tasks. If I clicked on create a study schedule, that would give me another list of tasks, and I can kind of keep going more and more granularly within those tasks. By the way, if you go onto the worksheet, you'll see there's a link to GoblinTools. I encourage you to go in there and play with it as we're talking. Another tool within GoblinTools is the Judge. And what the judging tool does is it allows you to put an email into GoblinTools or a text passage, and it will tell you the tone of that email. So this can be particularly helpful for people with autism to help them gauge the tone of an email. This is something I actually do myself. When I'm emailing and I don't know if any of you have written an angry email before, or I should say writing an email when you're feeling angry. What I find happens to me when I'm doing that is that if I'm feeling angry and I write an email, even though I think the email is fine. After I send it, I go, that really seemed angry. I'll take my email now. I'll put it into generative AI and I'll say, How does this email sound? What is the tone? Generative AI is quite good at figuring out what the tone of a particular email is. Those are just a couple examples of what we're seeing in terms of tools, and I encourage you in the chat now. If you know of any other assessment tools, sorry, accessibility tools or UDL tools related to generative AI, please share those in the chat now for everyone and I can share the chat with you later.

As mentioned before, we're at an early stage of generative AI, and one area that's been growing quite quickly out of this is the ability to create custom chatbots. And custom chatbots are a way that we can create tools that can be used for UDL for accessibility, and we're able to create these ourselves without coding. So we put a link in the chat to a custom bot that we created for this workshop. I will mention that to access this bot, you are going to need to have a ChatGPT account. You don't need the 4 account, but you do need a ChatGPT account. I'm going to share a link to the chatbot in the chat here now, and I'm going to go to the chatbot and demonstrate it for you now.

So Afsaneh and I spent, I don't know, a few hours creating this chatbot, and in order to make this effective, we trained it using some materials from the CAST website, as well as from some UBC specific material. So I can ask it to question how can I make my course materials more accessible? Again, we've trained this chatbot with some specific prompts in order to help us do this. So you'll see that it's come up with some barriers, and now we've asked it to ask for some specific examples. So I'm going to say yes, specific examples. And now it's going to give us some specific examples, and we've actually fed it with some specific examples from UBC as well. So if you have a chance to take a look at the ChatGPT store, you'll find that there's lots of these custom bots being built. As a really interesting exercise for yourself to explore different areas of accessibility and UDL you may be interested in, I encourage you to give these bots a try, either try them out like our bot or try creating your own and giving it some particular data that might be helpful within your context. I'm just going to pause right now. Before we keep going. I'm just going to see if any questions have come up for you or comments that you want to add. This is a three-hour session, and really the goal is to hear from you and to hear your ideas. Any questions, any comments have come up around generative AI overall, around custom bots, or

around anything we've talked about so far. I'm just going to take a look through the chat and use this as a chance to slow us down a little bit. I see a question in the chat, "Do you need a paid account to create a bot?" Yes. The way the ChatGPT works right now is you do need a paid account to create a bot, but not to use a custom bot. Take a look for other questions here now. Yeah. Sabrina mentions, "I'm not clear what a bot is." What a bot is is it uses ChatGPT. It uses the large language model, but you can customize the prompts for that bot in the back end. What I can do is I can write some long prompts in it. And someone's actually asking me to share the prompt for the bot. Why don't I do that now to give you an idea of how these bots work and what they are. Thanks for the question.

I'm now I'll just go to our bot here, one moment. Here we are in the UDL-Pal. If I go, actually, I don't have access to the back end of that bot, I'm going to go to a different bot to show you the back end. This is a bot called UDL Assistant that I created. It was an early version of the bot. Let me just see if I can get in here now. Darn it. Oh, sorry, that's not my bot. One more bot. I'm going to go into. You know what I'm not going to go into the back end of the bot, but what I can do is share the prompt with you later for the particular bot. But just to let you know, it's a longer prompt that you have in the back end of the bot, and you can also add particular material to the bot, like you can upload content to the bot, you can share URLs to the bot. Then what the bot does is it uses the prompt that you added to it. It also accesses the large language database, and it accesses the custom material that you added to it. It's basically a way to tweak and customize ChatGPT so that it changes the user experience a little bit. Any other questions before we move on here? I see, hopefully that covered what a bot is. Wonderful. All right. Let's keep going now, and I want to go into a little bit more connecting UDL with generative AI

One way that we can start leveraging generative AI, within a UDL practice is to use it to create personas. Personas, we'll be getting them to them a little bit later within this workshop, but personas are a way that we can help identify barriers to learning in our classroom and different teaching and learning environments.

One thing generative AI is quite good at is to create these personas. Here's an example of one persona that I've created. In a moment, we're going to give you a chance to create a persona. This is a persona we ask ChatGPT to create for an instructor. Dr. Amina Patel is a 45-year-old associate professor of mathematics, teaching a second-year advanced calculus course. During a session on complex integrals, she integrates interactive software to visualize problems and assign group projects to encourage collaboration. Once a week, she uses videos from YouTube for classroom discussions. She also has in-class quizzes to test the understanding of the materials. These are weekly in time. What this persona can help us do is to think about potential barriers that are created within Amina's classroom, and you're going to have a chance to do that later in the session.

The second persona is more similar to a persona I'm going to get you to create in a moment. What we asked generative AI to do was to create a persona of a student. What this student

persona can do is to help us think about potential barriers within our own classroom, which may impact the students' learning. So Alex Martinez is a second-year university student majoring in mathematics. Alex is a first-generation college student. They have a visual impairment that makes it difficult to read small print and access course materials that are not screen reader friendly. Additionally, Alex experiences anxiety, especially in large interpersonal lecture halls, which hinders their ability to participate actively in class discussions and group projects. So this is a student persona that we could use to assess our own classroom.

So just to get you into generative AI and to start playing with these tools, what I would like you to do now is to go onto page two of the worksheet, and I've created a persona template for you right here. The persona template says, "Act as an expert in teaching and inclusive design and create a persona for a first-year university student. Make the persona detailed and concise and include learning preferences as well as barriers. The output should be a concise paragraph." You're going to have a chance later in the session to make your own persona. But what I'd like you to do now is to use that prompt. Put it into a generative AI tool such as ChatGPT-3.5 ChatGPT-4 Omega, Claude, if you would like to, and see the output of what you've got.

Once you get the output, I'd like you to reflect on what was the quality of the persona, and how could you change the prompt to improve the persona? I'm going to give you about four minutes to do that. Afterwards, I'd like folks to share with me what the results were of creating the persona.

Wonderful. And, you know, you're also welcome to share the output in the chat. I see someone shared their output right there. Patrick mentions, "Is there a concern about adding your material to the bot?" Lydia asks. Yeah, I think generally, we haven't talked about privacy during this session, but these tools are quite vulnerable right now in terms of privacy, both in terms of using them for training data. But also we've had examples where bots are leaky. We've also had examples where ChatGPT itself leaked user information. If anyone has seen the "poem forever" hack. A Google engineer asked ChatGPT to write the word "poem forever." Instead of writing the word "poem forever," it shared login information from its user database. We're at a very vulnerable stage with privacy. To add to Patrick's point, though, I think we're at a really fascinating stage with the internet. I hear a lot of concerns, will this tool be used, will my data be used to train the tool? At the same time, the whole internet right now is being used to train these tools. If you go on Reddit, if you go on Twitter, if you're on LinkedIn, so many of the tools we share with are being used for GenAI training data. Patrick mentioned you can toggle the privacy mode on if you don't want it to be trained. I've seen a couple coming up here now, which is great. Someone shared about Jordan Kim. Wonderful. Thanks for sharing these. Donna mentions, "Much better result when clear about concise output format. When I excluded that, GPTs response was a page long." Good point. And I find it really fascinating that when we put prompts in these tools, it's a unique response each time, and it's so hard to know. For example, I haven't put specific output limiters, but I haven't had it be too long. It's really various responses we get. Wonderful. Thanks. Lots of folks sharing their personas here. What I'd like

you to do now is anyone interested in hopping on the mic and sharing their experience, creating a persona, and maybe even mentioning how they might be able to use this persona in their teaching context. So please feel free to raise your virtual hand. It's always good to hear from folks from the group. I find it connects the session a little bit more. Yeah, Olivia. Go ahead.

OLIVIA:

I was just thinking if you had maybe four or five of these, you could just reflect on your activity you're doing in your class that day, and just seeing would these five personas be able to handle the activity? Would it work for them? Should I add something or take something away to make it more inclusive for the group? Yeah, I was just thinking that would be a good way to use these personas.

LUCAS:

Wonderful, and I love the idea of multiple personas and thinking about different students within our class. Other comments again on the up Yeah, Shannon, go ahead.

SHANNON:

Yeah, just to further that, I think of creating UDL, and I think about running personas to think about who my student population is to create activities that give them choices that maybe are more closely aligned with their persona.

LUCAS:

Wonderful. I like that. How would you add specific prompting around choice, do you think or just kind of see where it aligns?

SHANNON:

I think I would still give choice to get started just to trial it first. Yeah. But I think for each persona, having let's say, two or three choices as to how they could engage in the activity or assignment would just make it a better experience all the way around, right?

LUCAS:

Absolutely. Wonderful. And choice being, you know, a cornerstone of UDL. Roslyn. Roslyn, did you have something to add or I'm not sure if I pronounced your name right there. We'll just wait a second there. Does anyone else want to add either the quality of the output or how they might use personas? Oh, there. Welcome. ROSLYN: I couldn't mute.

LUCAS:

Least favourite moments when I'm.

ROSLYN:

I put in the ChatGPT, and I'm a faculty member with the Department of Accessible Learning Services, so I do a lot of universal design and help instructors do that. But what was interesting

in this little exercise is, I work at a trades college and finding, having the balance of lectures and that kind of material, a lot of students really struggle with that. I created a persona of a student who is typical of what I've seen. And what was really interesting in this is what it came up with. I specifically picked on a heavy duty mechanics course, where you have hands-on learning and I said that hands-on learning is not the problem that lectures and that are in. They gave me ten considerations, nine considerations for supporting the student, which I just find fascinating. It was quite interesting and that was just with a tiny three little lines. It's my first time playing with this and I could see how this could really help us support our instructors even.

LUCAS:

Wonderful. And thanks for sharing that. Did it come out with a nine? Did you prompt it to come out with a nine or did it do that automatically?

ROSLYN:

It did it on its own. I just said that I had a student that was taking a first level heavy duty mechanics course, was diagnosed with ADD and anxiety, works with my hands easily, but struggled with classroom learning. The instructor lectures and I have a hard time comprehending and staying focused. It was 19 things that they actually brought up. So it was really cool.

LUCAS:

Thanks for sharing that. And Judy, please go ahead. And then we're going to move on after Judy here.

JUDY:

The thing that stood out for me was the similarity. It's a pattern. And it looked like there's actually a really narrow diversity of personas.

LUCAS:

Interesting. And I would wonder if I saw your comments. I think that it's great looking for these I think you mentioned stereotypical. It's really important to look at them this way. I would wonder if changing the prompt would change the personas. I would also wonder about. I've been playing today with Claude, which is the Amazon GenAI, and it has quite a different output. I would wonder about playing with different models as well. But I think being attentive to those stereotypical or who's not included within these personas. Thanks very much for sharing. It's great to hear folks' voices.

We're going to jump in now, and I think I'm turning it over to Afsaneh at this point.

AFSANEH:

Thank you so much, Lucas. I think that it's 10:00. I want to make sure that everybody gets a break. What if we give you a 10 minute break, we'll see you at 10:10. Wonderful. Please use this time to stretch, get your water, tea, coffee, and we'll see you in 10 minutes.

It's 10:10. Welcome back, everyone. It's exciting. Working with GenAI, thinking about how you can use it for accessibility and inclusion. It's a really really exciting topic. We are going to talk in the next 2 hours about different principles of UDL and how GenAI can help us to use and amplify inclusivity, personalized and tailor learning experiences. In regards to the chatbot, the UDL chatbot. If you have any questions, please contact and email us later on. We will send you the instruction and some of the other activities that you need in order to create your own chatbot. But in order to make your own chatbot, you need to have the pay version. Just wanted to make that clear.

So the first principle that we are going to talk about is multiple means of representation. This principle leads to accessibility of our course material. It encourages educators presenting information and content in multiple ways in order to respond to the needs of different students, diverse students. This means that including offering content, through text, video, audio, images, graphs, and so on. So it encourages people. If you have any kind of activity, webinar, classroom program, think about how you want to present information more than text, more than a way, one way. That's multiple means of representation.

A few examples or seeing this principle in action would be like if you have videos and audios, make sure that you have captions or transcripts of those. If you have difficult, complex content that you're working and teaching, make sure that you have a glossary page or some translation or some way to support the students in order to understand the whole complex content. Providing translation, links to the multilingual glossaries might also be a good way and that would be another way to engage your students. Using concept maps to show the link between the ideas and topics are again another example of this principle, highlighting the key information in text, graphic, and diagram. Sometimes we say that if you have learning outcomes at the beginning of the course, it's good to repeat that throughout, particularly when you have activity to refer to that activity along with learning outcomes, too, which show the connection and it becomes more meaningful for your students. Provide the scaffolding that connects new information to prior knowledge. In the next few slides, I'm going to share with you just a few simple tips on how you can make your content more accessible using some of the UDL strategy.

In this one, in this example, you see an image and we're trying to mention how important it is to provide alternative text for your images. Most of you might be familiar with alternative text. I will just say it once more. Alternative text is what you want to deliver to your students, to your learners through that image. In other words it's that closing your eyes, explaining what the main goal is that you want your students to understand. That would be your alt text. In this

particular example, I'm showing you the difference between caption and alternative texts. The caption is seen in an online environment, but alt text is only read through assistive technology, or when the images cannot be loaded because of the internet problem or access. That's one way to make sure that you provide alternative text for your images.

Another one would be describing your links. In a sense, if you have some information you want to share with people, instead of saying, "Click here for more information," it's good to describe what is in the link. Like information about Teaching and Learning Fund at UBC is available online. If this link is broken, you will be able to Google it or ask someone to be able to find the information. It's always important rather than saying, "Click here," to say, describe your link so that people can access it if it's for some reason broken. Heading also is important. If you have Word document, PowerPoint, Any document that you are working on, it's good to use headings, heading two, heading one, and three. The reason is that for your students who use assistive technology, their tools would be able to show them the order of the reading. That's another tip that might be very easy for you to select in your slide, but it's going to make a huge difference for people to access it.

Another thing that we discussed particularly at UBC is the issue of colour deficiency. Sometimes I ask people to see how many of people see the number in the circle, or there are one in eight students who might have some kind of a colour deficiency. Particularly in male. And I'll give you one example on the right hand side, it shows how people with red and green colour deficiency would see the colour. So actually, recently, I was working with the UDL fellows at UBC, and one of the instructors mentioned about having her son was red and green colour blind. One thing that she mentioned is that he is much better than a normal person with patterns. He would see things that we may not be able to see and to be able to see the patterns that with the regular eye, we might not be able. Saying that we were talking about how we can make our lab more inclusive and filtre more inclusive. One way instead of saying that, see the red flag in order to get to the right campus, use the pattern symbols like a triangle or something else in order to lead people to where they need to go. This doesn't mean that you don't need to use colour in your material. This means do not use colour to convey information. What I mean by that is that rather than saying "Correct answers are in green," they may not be able to see green. You have to think about other forms. Either you bold it or other ways to distinguish that pattern.

Now, I pass it on to Lucas to give you a few examples with AI.

LUCAS:

Wonderful. Thank you. To note that there's lots of great interaction happening in the chat. Lots of resources shared as well as different points being brought up. I want to do two or three demos of how generative AI can help us think about multiple means of representation in our course. I'm going to toggle back and forth between the slides and the demos. After I do these three demos, I'll give you a few minutes to try these out yourself. The first demo I wanted to do was the idea of transforming text in a way that allows you to share it in multiple different ways

with your students. What I did is I took some text from the internet. It was from an article around very complex texts. I basically searched "What's the most difficult to read texts that you know of?" It gave me this article.

I'm going to go to ChatGPT now. And I'm going to transform that text in three different ways. In my prompt, I say, "Transform the text in the following ways. Explain it like I'm five," which is one of my favourite generative AI prompts right now for complex text. "Create a glossary of terms for it and translate it to Farsi." Let's give that a try. And so it's interesting. It always uses the favourite toy example. It's going to explain the text like I'm five. It's going to give me a glossary of terms from this text, and it's going to give a Farsi translation. Maybe I'll ask Afsaneh, how's the quality of the Farsi translation?

AFSANEH:

It's actually pretty good. When we tested it, we were like I looked at it and I was like, Wow, I can't even translate it like this. The content was really complex, and I think that the flow was good. Yeah.

LUCAS:

Wonderful. One way of thinking about multiple means of representation is just the ability to take text and transform it in different ways to share it with our learners. The second demo that I wanted to do was an alternative text demo. Before I do this demo, I will mention that depending on the tool that you use, there's going to be very different qualities for alternative text. In the past, I have had some tools that, for example, MS Copilot does not create good alternative text for me.

I'm going to say for this one, "Act as an expert in web accessibility. And create concise and meaningful alternative text for the following image. I'm using ChatGPT-4 Omega for this. I have the same image here and we'll see what that looks like. I think one of the keys here is whether it's able to tease out the different fields. So a comparison of two field sections, one with sparse and healthy crops labelled "starved for lack of plant food" and the other with healthy thriving crops labelled "nourished with phosphate and lime." It was able to get the meaning behind the text, as well as provide alternative text for this image. I know that for myself, I have been using generative AI now on most of the slides that I do for alt text, and it's been pretty good for that.

The third example I wanted to give you is a mind map. And we know that mind mapping can be a visual way for learners to interact with course content. For this prompt, I say, "Create a mind map of cell biology at a fourth year university level." I'm going to do something a little bit different here.

I'm going to go to a custom GPT. Again, these are available for free, and I'm going to go to this GPT called Diagrams and Show Me, and I'm going to paste in this prompt here. Let me just remove the tool link there. What Diagram and Show Me is able to do, should be able to,

assuming it works, is to create a diagram mind map for me that I can export somewhere else. If it doesn't work, which it looks like it's stalling right now. What I'm going to do instead is I'm going to go to ChatGPT. I'm going to ask it to create a mind map. What it's going to do now is instead of creating a full mind map, it's going to create different heading levels. And these heading levels, I can use that to create a mind map, or if I have it output as a CSV, I can upload it into different mind mapping programs. But again, there are programs that will enable you to create the mind map itself. Now it's breaking down cell biology, and if I had this create a CSV, I could create a mind map with this.

Over to you. It's a chance for you now to play with this for a few minutes. What I'd like you to do is to choose one of these three prompts. We're only going to have about four minutes to do this. So either take the text that I included and transform it in as many ways possible, or use your own text and see if you can transform it in different ways, or see if you can create alt text for an image, or see if you can create a mind map either with the mind mapping program or just using headlines.

The one thing I'll mention before you jump into this is I am getting questions about accuracy and acknowledging that these models right now are 100% confident and 70% accuracy. We always need a human in the loop. For example, the mind mapping of the cell, I'm not a biologist. I haven't studied biology since grade 12. I am not sure of the accuracy of that, and if I use that information, I would need to cross check it. I'm going to give you four minutes now. Try out one of these three prompts, think about the output quality, what approaches you use, and what are some potential usages for that. You can find that on page, one moment. On page four of the worksheet, and I'm going to stop sharing in a moment and I'll start my four-minute time for you. Again, choose one of the three prompts to try.

And David asked, "Could you do an additional prompt to check the accuracy of the info?" You could do that. I think the challenge is that we don't always know if the models are truthful. I could ask it to check its accuracy, and it may or may not give me an accurate response back. It's a bit of a conundrum. But what I could do and what some people have been doing is shifting response into different tools. They might have ChatGPT make one response, bring it into Claude, and ask it to analyze the response for accuracy, and you may be able to get better accuracy, but I think the most important thing there is always having a human in the loop. We are responsible for this content.

Leslie says, "If a student needs to check for accuracy, they need another resource that they can trust." Traditional academic source materials, absolutely. I think this is, I totally agree with you. Leslie, it's really important how we talk to students about usage. For students, something's coming up quite a bit is a subcategory of critical thinking called evaluative judgment. So how can we help our students evaluate the output of these tools? How do we help them understand that they do make errors and that they do need to cross check them, and they do need to figure this out, and they are responsible for the output that is created. Wonderful, and I've seen a

couple prompts put in there. I'm going to get folks to share their comments around the output quality or share their actual outputs now in the chat as we go. And we only have another two minutes left on this activity. Yeah.

So Jenna asks, "I'm new to ChatGPT. Is it safe to upload pictures? No distribution of uploaded pictures elsewhere. That's a really good question. If you uploaded straight to ChatGPT, those pictures could be used for training data. There's also potential in leaks. I don't expect the generative AI itself would reuse those pictures except for training. If you wanted to be safer, there's a privacy toggle on ChatGPT. You can make it private, which should be more protective. You could also use a specific GPT, or even download a local model. Many of these tools have local models that allow you to do this on the computer without being linked up to the internet. What I think we should do is to move on to chat about the next category, which Afsaneh is going to cover for you. And that is multiple means of engagement.

AFSANEH:

Thanks, Lucas. The second principle we are going to talk about is multiple means of engagement. We all know that our students and our learners get engaged differently. Some people love group activities, some don't. Some get really excited about new things. Some people do not like new things and they get intimidated by new things. So multiple means of engagement focus on engaging a student and maintaining their students in learning. I encourage us to think about creating a supportive learning environment where students have different options to be engaged with the material, with the instructor, as well as with their peers. It's giving different options for each activity. We are going to talk about some of those strategies in action or how we see UDL multiple means of engagement in practice or in action.

For example, if you have particular topics, one way to get students engaged, you may, if you have the option, you can invite guest speakers. Someone who is known, is on the news, and students can relate themselves, see their future, and enjoy that guest speaker in the discussion. Creating a detailed course schedule is also good for students. Creating rubric and community agreement for group work. Again, most of the group work, but sometimes having a community agreement, getting students to actually engage in the process to discuss and come up with that agreement would help. Building peer-to-peer feedback is another thing rather than having one way of student engagement and assessment. It's good to have some activity, get them engaged to work with their peers. Allowing multiple attempts on exams when and where it's possible. Sometimes you might think that what is the main purpose of this quiz that I'm having to build that outcome? Is it important to give them only one attempt or can I allow them more and let them achieve that goal? Depending on that, I want to emphasize UDL is not for making things easier, but it's making sure that you give students different options to achieve what they need. Ask follow-up questions after a lecture and presentation and providing feedback that is frequent, timely, and specific. These are some of the examples for multiple means of engagement. I'm sure that you have done much more in your practice. Sometimes when I talk and teach about UDL, through the discussion, you will find out that there are so many

educators who are actually using UDL in their practice without knowing. It's just thinking about your learners broadly and thinking about what other options I can do. Or if you have an activity to think about the activity and the impact and to see what is the main of this activity and how I can make sure that everyone can be engaged in this as much as possible? I'll pass it on to Lucas to talk about.

LUCAS:

Wonderful. I'm going to share some examples around multiple means of engagement in AI.

The first one is creating a rubric. Rubrics are something that generative AI can be fairly good at creating and can be a way that we can save a little bit of time when creating multiple means of engagement. You'll see the prompt I've used for this. I use a fairly complex prompt around the particular type of rubric that I would like to get. "Act as a communicating science instructor with a specialization in science communication, create a rubric to assess third-year student blog posts about a citizen science project." and then I've included the specific criteria. The rubric should include the following: a specific list of criteria, gradations of quality based on the degree. The gradations should include specific descriptions of what constitutes excellent, good, fair, needs improvement. Each gradation should provide descriptions for performance levels. What I found with rubrics is the range of quality can really vary, and it can take a lot of work to fix the particular rubric.

So let's give this one a try. And often it gives it to me and a table. Sometimes it won't. Let's see what the output is like on this rubric. So it's giving me a table. You'll see the different criteria within the rubric. There's a point scale at the top of the rubric. I could change this if I wanted to. They're giving me some really interesting focus, highly engaging, uses strategies to connect with the audience around communicating science. In the Microsoft "Future of Work" reports, they talk about potentially we're now moving from an era of search and create. To an era where we spend more time generating, evaluating, and revising. I find that my practice with things like rubrics now is more often generating a rubric, revising the rubric, comparing it to other rubrics, fixing its accuracy, and then using it from there.

I'm not going to go through this one, but we can also use generative AI as a way to provide feedback on certain areas. Thinking about students being able to use the tool to get feedback for themselves. For example, if they had a blog post now for communicating science, they've generated the rubric, they can put it in the blog post and ask it to provide suggestions. But generally, generative AI can be quite good at providing feedback for learners on work to help them refine it before submission.

So here's an example of the output that I got when I had generative AI assess a blog post. And again, this can give students more feedback and a way that they can take it further and make these revisions. So back over to you, what I'd like you to do now is to use generative AI to create a rubric for you based on one of your assignments. Before I do that, I did want to

mention a comment from Derek about the environmental impact of these tools. And I think what I took from that comment is that playing with these tools is good. But on the other hand, he says, "I get this icky feeling of knowing that each series of prompts is like pouring a bottle of water on the ground, burning a bunch of fossil fuels." I agree with you. I think the environmental challenge is big on these tools. For myself, my biggest concern is the use of them instead of search engines, which is something we always use. On the other hand, we use a lot of digital tools and using the internet also has an environmental intensity with it. I think generally it's something we need to think about whenever we use computing. I agree that generative AI is worse, but I think we're also. It's the first time actually since Bitcoin, which is a great one to look at, when we're really looking at the data use. I think when we go to Cloud Computing, when we use any intensive computer program, we do need to be intent about the environment. But personally, while generative AI is worse, I'm not sure it deserves to be the only tool that we focus on when we think about environmental challenges. Anyways, that's my. I wanted to throw that out there. I'm going to give you a couple minutes now to generate a rubric and to share the results of that. I have a question or a comment from Leslie. "I'm curious to know more about how we frame what is ethical for instructors to use GenAI in teaching and learning. I know most PSIs do not approve of using GenAI for grading, but how do we know the clear lines as to what is ethical, especially as it moves fast? Same goes for students, academic integrity conversations." I think this is a great point, Leslie, and I think one of the reasons I think these workshops are so important is that we can have these discussions and we can think about what's ethical. What comes out for me with grading right away is privacy. And that we know that putting student data into these tools right now, unless they're local, is an ethically and legally a privacy violation. I think there's also ethical questions around if we used a rubric without really checking what those categories were and making sure they align with our values and our approach to teaching and learning, then we're allowing things like AI bias into our teaching materials, and how do we account for that. But these are just a couple of the ethical concerns. Again, I think in having a critical conversation about these, it's very important that we have folks in the room talking about it.

And Teresa Bell mentions, "Lucas, I'd be interested in your thoughts on the other concern Derek raised regarding the use of AI with respect to stealing the work of content creators." And absolutely. To be honest, I think this is my hardest circle to square ethically with these tools is that these tools have scraped a lot of data on the internet. They've scraped it without attribution. There's a number of content creators now in active lawsuits on these tools because their books have been added to it. Our collective knowledge has been added to this as well. And it's a concern, and it's something that legally is going to be sorted out, but I have significant challenges with it. From my understanding, one of the main legal points on it is because it doesn't directly use the work, because it copies their style, there's questions around whether style can be copyrighted. So I have kind of two minds on it. On one hand, I'm very concerned about the lack of attribution and what's used, and part of me thinks we should start over and retrain these models ethically, and hopefully there will be more models. On the other side of it,

it is exciting to see open material and from an open education perspective, it's exciting to see people being able to use this material. But again, thanks for bringing up these points.

Thanks for creating a rubric. Now we're going to change gears a little bit. We talked about so far, we've talked about multiple means of representation. We've talked about multiple means of engagement. We've talked about some ways GenAI can be used for that. But previously we talked about personas. What we wanted to do now is do an activity around personas so that you have a chance to do a group activity and go deeper into the idea of personas. After we do that, we're going to go back and we're going to look at multiple means of action and expression. I'm going to turn it over to Afsaneh to introduce this activity for us now.

AFSANEH:

Thank you, Lucas. I am going to post in the chat the link to this persona activity. If you can click on it, you've been already introduced to Alex and Amina. We are going to send you to groups of four or five to breakout room. You have 15 minutes to explore three questions or three steps. Some of you already started when you started with creating persona. The main goal of this activity is for you to understand the barriers that might exist around and to be able to identify barriers that might exist in your course program, unit, and institution, or overall. With that activity, I would appreciate if you check on that link to make sure that you can make some edits. If you don't plan to go to the breakout, you are more than welcome to stay in the main room.

But the main purpose of this is to discuss these three steps and questions. One is that in your group, if you can adopt the persona Alex and Amina, and to see what kind of barriers might exist in Amina class for Alex, and what can you do in order to remove that? That's one of the questions. The second one would be working with more persona as you did earlier. You may just talk about your, briefly give a description of your classroom. There is a prompt in the worksheet that we created. You can ask to create a persona, which I can identify the barriers that might exist in your classroom, discuss those persona with your colleagues, and come up with some solution. Again, there are options. We'll leave it to you. You have 15 minutes to discuss which activity you want to do and how. Then once you are back, we'll give you two or three minutes to share some of those experiences. Remember, the main goal is for you to understand, to be able to identify some of the barriers that exist in the classroom environment in our teaching and learning environment. Any questions before we send you to the group? We will send you randomly to groups of four or five. So I'll ask Paula to send you to the breakout room. The instructions are all in the worksheet. Please use the slide to answer the questions as you go to your breakout room.

Thanks, everyone for brainstorming and engaging in this activity. Again, the slides, you have access to them. You can later on work on the other steps as well. I know that it's a long activity and some of them. I personally did spend a lot on step two talking about what I teach, what kind of barriers. I was changing the prompt based on my students and the needs that they have

or the question that I received. I see some of your points in the slides and I try to read a few of them. As a challenge for Alex, YouTube videos, we all get excited. We want to bring real events or cases to our classroom. And sometimes we just play it at the beginning of the class, ask students to get engaged. So ensuring that videos have closed captioning as well as share them with the students in advance, it makes a huge difference. Group projects providing alternative ways to complete the project, quizzes. Think about what other options you can give them one-on-one conversation. Not being able again to fully participate with the visualization tool, it might be another thing. Ability to understand the visualization is also and anxiety around discussion groups. There are so many other things that you share. I'm just wondering if you want to share your ideas or your discussion or experience using mic or chat, please, we have time for one or two if you want to share. What was the experience? Was it something that you were able to right away identify? Was it relevant to your own context? If you'd like to share those that would be great. If you're tired, it's two hours now, you need a break? We are going to. Okay, David. We discussed the point of a student taking initiative to go to the accessibility office. That's one of the points. With the program that we are actually offering at UBC, we are saying that we are hoping to reduce the number of people who go to the Centre for Accessibility. Like in one year, one term, we had about 4,000 students needing accommodation for exams. With some changes in the exam, we are hoping to reduce that need. But when it's like last minute, that would be the option. Send the students to the accessibility office. But what are the things that we can do to prevent this happening in the future? That's the steps that we need to take to see that in which area in my course, in my program, I'm sending a student to the accessibility office. Is there any way for me to make some adjustments in order to reduce that number? Then Shelly, "Our group discussed applying UDL framework to the challenges of teaching online asynchronous form versus in person." Great.

LUCAS:

Do you see Olivia has her hand up there? I'm not sure if you see that.

AFSANEH:

Oh, okay. Yes. And providing support and alternative assessment, Judy and Olivia, do you want to share?

JUDY:

When we were chatting, I just threw into ChatGPT Alex's description and asked what learning barriers Alex has. And even though it was written in the description, it broke it down into categories. And it pulled out some stuff that I didn't quite notice the first time I read that description about Alex, like, for example, the fact that he's a first-generation college student and how that would affect him as a learner. So it just broke things down a bit more and I don't know, made things a bit more visible than what was in that paragraph for me, which I thought was a little bit helpful to expand my understanding of Alex and maybe some of the barriers they're having.

AFSANEH:

That's a really good point. I always get to this point that I feel like ChatGPT gives me another lens to see things differently. No matter how deep I get into one concept, it gives me another hint to say, Oh, I never thought about this. Bringing that, it gives me think about more about the perspective that it's not seen. Sometimes what we offer or prompt actually gives the answers that you will see that you have overlooked or you didn't even see it through your own background or experience. That's a good point to be able to see things deeper. I really love to continue this conversation because it's very engaging and I'm very passionate about this topic, but I'm also mindful of the time, and I want to make sure that you get enough breaks. How about we get a five minute break and I'll see you back at 11:13, five minutes. Yes. That's my bad.

It's 11:15. Welcome back, everyone. Okay. Thanks, Olivia for sharing college resources. Yes. Lack of academic role models. That's one of two things. While you were away on break, there was a question about first generation, what challenges that might bring for Alex. We talked about how those who have parents or grandparents gone to a school would help them to navigate the school easier to show them the path, introduce them to the resources. Those are some of the challenges. Now, Lucas, can we start?

We need to move forward with the last principles that we have, which is multiple means of action and expression. This principle emphasizes allowing your participants to demonstrate their knowledge and participate in activity in different ways, and which enables them to choose the mode of expression that best suits their ability and preference. In some cases it might be difficult. Again, it depends on the learning goals that you have. In some cases, you feel like if you have a group activities, is it essential for them to actually learn how to do the team work? Or is it the main goal for them to understand the concept of the policy and other countries? If it's possible to do it individually or group work. Think about your contacts. Think about the options that you can give them to demonstrate their knowledge. Is it important for them to share their knowledge in the essay format, or can they interview someone or use podcasts or infographics to show you their knowledge? This principle focuses on providing different ways, giving students different options to share their knowledge.

LUCAS:

Wonderful. I can go through a couple of examples there or did you want to add more to that, Afsaneh?

AFSANEH:

I wanted to actually share a few examples of actions. One would be, again, provide an option for assignment requirements. Use multiple tools for construction and composition. Provide incentives to prompt a student to write self-reflection peer feedback, give them examples. Sometimes I've seen instructors actually share a good example of assignments or activities. Providing multi-part assignments to give them that scaffolding. Providing opportunity for

mentorship from different sources. Self-assessment activity with automatic feedback and providing alternative ways of participating in classroom activity. Again, these are a few examples of this principle in action. Now I passed it on to Lucas to share some of these strategies using GenAI.

LUCAS:

Wonderful. Thank you. Before I do that, a story that I heard. I was listening to a faculty member at UBC discussing using generative AI for a communicating science assignment, and she used to have students writing a particular topic about how they would communicate it. But she decided to allow students to use ChatGPT. At UBC, we have a privacy impact assessment done on it, so it's okay to use in the classroom. She allowed students to do anything they wanted. They could use ChatGPT and they could be as creative as they wanted. It was just amazing to hear her talk about the type of creativity that came out. She said some students were writing children's books to represent the scientific concept. Other students were writing podcasts. They used it to really enhance their creativity and ways of expression. I just wanted to share that. Then I want to share a couple examples of how we can engage students with different ways of action and expression using generative AI.

My first example is one of my favourite examples, and that's using generative AI for games and simulations. Again, this is at a really early stage right now. If you go into the GPT store, you'll see there's more and more GPTs that allow you to play games with them. But ChatGPT is quite powerful for creating games that you can play against it in the educational space. An example I used with my son.

I don't know if you've ever studied WHMIS before. No offense to those who teach WHMIS, but it has to be one of the more boring topics to learn about. So I created a WHMIS game for my son to play against ChatGPT to learn about WHMIS. But this game was written by a history professor in the US. I've linked to the blog post in the resources. But what he's done is he wanted his students to experience what it was like to be in Paris in 1348, and so he designed a prompt that creates a role play game for them, where they act as a quack apothecary. So please role play as an MPS, an educational history simulation game for university classes. Act as a quack apothecary, an aspiring alchemist in 1348. You must navigate a city in chaos due to the plague. He made sure the game was authentic, accurate, gritty feeling. You can only use medieval remedies. Winning is extremely difficult. Almost all choices lead to problems and shocking reversals. Here's some goals for the game, and he's also given it some specific commands. What I love about this game is that I enter this prompt and generative AI starts to play the game with me. You are an apothecary. Here's your commands, and if I put in one of the commands, so I'm going to do diagnosis. A child comes in. Here's my actions, and I can just go through now and I can play the game. This is just one example. But I think it opens up this idea of what sort of games can we create for our teaching and learning contexts. Knowing that games engage students in different ways, they can even bring joy to the teaching and learning environment and provide a space of automatic feedback.

The second example I wanted to share with you is using generative AI as a tutor, and we know that tutoring is an effective approach to teaching. In the Bloom's sigma 2 problem, he found that in his 1984 work, he found that students who were tutored achieved two standard deviations above students in a conventional classroom. We also know that tutoring is a way to differentiate and personalize learning. I wanted to show you an example of tutoring. But rather than just show you an example of using generative AI as a regular tutor, what I've done is I've used the voice capabilities of generative AI as well. And I prompted generative AI to act as an expert in political philosophy and have a Socratic dialogue with me about the state of nature. I used the ChatGPT app to do this, and I was quite surprised at how good of a conversation it was able to have with me, as well as the naturalness of its voice. Keep in mind, hallucinations and inaccuracies still do occur. I used political philosophy because I studied it in my undergrad. So I might have some ideas where it was going wrong. So I'm just going to play you a couple minutes of this now. I won't do the whole video, but we've linked to it.

[Video starts]

LUCAS:

I'd like you to have a Socratic dialogue with me about the state of nature. Make sure to ask me a lot of questions to gauge my understanding.

ChatGPT:

Certainly. Let's have a Socratic dialogue about the state of nature. What do you understand by the term state of nature?

LUCAS:

Isn't it a philosophical construct?

ChatGPT: Yes, you're right. The state of nature is indeed a philosophical concept. Can you elaborate on what that concept entails and how it's often discussed in philosophy?

LUCAS:

Isn't it related to governance? I'm not really sure.

ChatGPT: You're on the right track. The state of nature is often discussed in relation to governance and political philosophy. In this context, it's used to explore what human life might be like without organized government or societal rules. Do you think in a state of nature, people would have absolute freedom to do whatever they want, or would there be some limitations on their actions?

LUCAS:

I still don't really understand what a state of nature is.

ChatGPT: I see. Let's delve a bit deeper.
[Video ends]

LUCAS:

I'm going to stop there. But again, it gives this idea of what does it mean to have the ability to have every student have a tutor. This is just using a prompt, but we're already seen lots of tools come out like the Khanmingo tool developed by Sal Khan, which creates tutoring availability for any student, again, as long as they cross check with it. My son is 14 now, and when he comes home with notes and he needs to study for an exam. What I do is I take a picture of his notes. I upload them into ChatGPT, and I ask ChatGPT to tutor him. And help him study for the exam. He can spend almost an hour doing that to prepare for the exam. Yeah. Question, David.

DAVID:

Yeah, Lucas, those are great. I'm just wondering about exporting these, like the game and then the tutoring that you're showing outside of the ChatGPT. So I see you put this in YouTube, but what about the games? Because if we wanted to say put those into a course, an online course, is that possible?

LUCAS:

You would have to give students the prompt, and they would have to prompt the tool themselves at this point. Like that history prompt, that history professor gave his students the prompt and said, go into a generative AI tool, play this game, using that prompt. However, this is such an early stage. What I'm already seeing in the GPT store is custom GPTs that just play games. I would expect, in a year or two, we're going to have engines that we can pull into our course that will play educational games with students in different areas, rather than having to use the chatbots as we're doing now.

DAVID: Okay. Thanks.

LUCAS:

So over to you, and this is going to be our last activity. We're going to do a reflection activity at the end. What I'd like you to do is try to create a small game for your topic area. Nothing as complex as the game that I showed you. You could do things like play 20 questions with ChatGPT. Play some sort of a game in your topic area and just use it as a way to think about the potentials. The other one is to have the model act as a tutor and I put a sample prompt in there to act as a tutor. These can get a little tricky when prompting it. Generative AI likes to share. If it acts as a tutor, it likes to give you 20 questions instead of one at a time. I like to put things in my prompt like, "Ask me one question at a time." Start with the first question or in a game, your turn first. Again, these can be different ways, different actions that students can have within our classroom and different potentials for generative AI. I'm going to give you five minutes to play with the game prompt. You will find this in the worksheet. Let me just find the

page for you here. So if you go to page eight of the worksheet, you'll find the game prompt. You may even just want to paste in that game prompt and try to play the game with yourself. You'll also find the tutoring prompt as well there. So give it a try now. I'm just going to share a link to a GPT. Again, you need to be logged into ChatGPT to access this called Tutor Me. This was developed by the Khan Academy. It's like a mini version of Khanmingo if you want to try out some of the tutoring capabilities of these tools. I think someone shared this before, but I'm also going to share AI Tutor Pro, which is a tutor application developed by Contact North in Ontario, which again is another way to play with these tools as a tutor. Right now, these tutor prompts are quite powerful, but I think where we're going is more customized tutorial tools that in this case, they vetted more of the information that's used within the system for tutoring. Just one more minute left and then I'm going to get folks to share their experience creating games. Shelly mentions, "Tried my same prompt in Copilot, not as good as Claude. It would only do the gaming creative mode. I have to say I hope the Microsoft people don't hear me on this one, but I have no idea what Microsoft managed to do to make their tool output so poor compared to ChatGPT when they're using the same large language model. But I've had much less quality results when I'm using Copilot. The unfortunate part of that is that the first tool that got a PIA at UBC. For many K-12 institutions, Copilot is their tool of choice, but something Microsoft did with the middleware means that the output hasn't been as accurate.

All right. Thanks for sharing. I had some folks share in chat. Because we're getting towards the end of the session or almost there, I'm wondering if a couple folks would mind jumping on the mic and sharing what their experience was, creating games or creating a tutorial or what their thoughts are in this area. Veronica, please go ahead. Forgive me. I have no shame, No shame in this room. It's all good. Thank you.

VERONICA:

This was very exciting for me because I am teaching graduate students on an extremely accelerated timeline. They have to complete these courses in six weeks and there's a ton of content to get through. Often, I will struggle in getting students to understand the different functions or purposes of behaviour that we'll often test for when we're doing assessments to understand problem behaviour. I didn't think that a large language model tool could do it. I just said, let's try to figure out the functions of behaviour. Not only did it already have a tool and a number of scenarios available to present to me in a very quiz-like fashion, but I could ask for an expansion on that. I don't understand. Tell me more examples of sensory maintained behaviour. The initial return that it gave me was really inadequate for my needs because it was very focused on a developmentally different group. It seemed very focused on stemming behaviours that we might see in autistic clients. So I asked, "But can you give me some examples in an allistic client rather than autistic?" It gave me really fantastic examples, and it felt very intuitive. So I think I'm going to use this with my students.

LUCAS:

Wow. Thanks for sharing. What I heard there is it was pulling on data or it was using data you weren't expecting, it was able to call on, is that right?

VERONICA:

Well, it was reacting to what not only did it give me very good scenarios that were analyzable. A bit rudimentary. I think it made some assumptions, but very analyzable and testable hypotheses. But when I asked for clarification and additional examples to create a concept, it was able to produce some really compelling ones.

LUCAS:

Wonderful, thanks for sharing that. Did anyone else want to share their experience? Just going to take a look at the chat as well. I see some people are using Perplexity, Helena created a mock role play. Yeah, Shelly, go ahead.

SHELLY:

I'll share with you the parenting style one I did. I really like the Claude did the back and forth. So it started with a scenario and then asked me which parenting style did it most closely resemble? I even liked its language, unlike the other that just said, which one is it? This one recognized most closely, right, that it may not be a perfect example of and then I answered and it explained why my answer was correct. But then what it did was flip the scenario and says, "Now, you create me a scenario, and I'll try to identify the parenting." Which was really fun. I wrote one in, I wrote a simple one. I said, Claude and his brother are found in the bathroom with paint all over their faces and clothes. The dad walks in, laughs at their antics, tells them they're so creative. He then tells them to remove their clothes, go off and play, and he'll clean everything up. And it came back and it did a great job. It identified, I was trying to describe permissive, but then it actually gave me five different indicators using the scenario of how it fits the key characteristics of that parenting style, and it did really well, low demandingness. The father doesn't set any consequences or rules about using paint unsupervised or making a mess. Few rules or limits. There's no indication that the children weren't supposed to be using the paint or that there were any consequences for them anyways. It goes on. It was really well done. Anything that style with Copilot. It was very simplistic. They didn't even name the child in the scenario. They're just like the child.

LUCAS:

I've been playing with Claude as of today, and I'm using the pro version, but I'm finding the outputs are quite interesting and quite powerful. A couple of notes in the chat. I think both of them were kind of around diversity. Derek asked, whether the extent of diversity on historical figures. It's a good question. I mean, a lot of the space right now is experimenting to see what sort of diversity we get. Rebecca also found that when she had to create a role play, it uses the same name, Alex Martinez, which we had in our example, which does suggest some challenges around bias and diversity, which is showing up in the research in these tools. Thank you for

sharing that. To wrap us up or take us home, I think, what we've tried to do today, I'm just going to share my slides.

What we've tried to do today is touch on principles of UDL, which Afsaneh was able to clearly outline and bring in her expertise of UDL. Then we tried to align and connect these with generative AI and ways that generative AI might help us meet our UDL goals, meet our accessibility goals. I think something that I really like that came out from you, as participants was not only the teaching and learning examples you shared and the specificity, as well as the sense of play, which is always wonderful, but also the critical lens, Derek brought up the environment. We brought up diversity. And I think it's in these critical conversations, and it's in this play that faculty, staff, and students can have a voice in this space. Rather than having the discussion just happen in Silicon Valley or wherever development is happening, I think these conversations are really important. As a last activity, what I'd like us to do together is to do a reflection activity on a Padlet. This Padlet it's a secret link I'm using. What that means is you can't Google it and find it. But what I'll do is in a couple days, I'll delete the Padlet and I'll share the PDF of what you wrote with Helena to protect your privacy. At the bottom of the Padlet, you'll see a link. To make it easier, it's <https://bit.ly/FLOUDL>, all caps. And I'll share the link in the chat in a sec. What I'd like you to do is there's three columns on the Padlet. Share one way you could use GenAI to make your practice more inclusive. One challenge you anticipate in using GenAI in this context, it could be a challenge, it could be a critique, and one support that could help you do this. I'm going to take this down now. I put all the questions on the Padlet itself. And I will share the Padlet. So as a final piece, we can share our reflections together. So I'll just give you a moment to get into the Padlet,

Wonderful. The idea of personas to pick up areas in the course that we may not have identified, the idea of using it for mind maps or visuals, different activities. Yeah, point brought up around trust. How are we going to trust the results of this tool? How are we going to judge the results? And do I need to pay to play if I want trustworthy results? Offer students more options for evidencing and sharing their learning instead of essays. I mean, this is an interesting time, I think, not only do we have a tool that can help us move away from essays. I think we also have an academic integrity challenge right now that's happening with essays when generative AI, one of its strengths is the ability to write essays in different genres. Personas and tutor training. I love the mind maps. Create some game role play prompts on course concepts and use to do a fun deeper dive, and I like that we have a gif representing fun there. I think that's SpongeBob shooting across there. Concept map, sample content for business or professional communication. Some of the issues we're seeing, creating alternatives for students who don't want to use AI. That's a great point. I've had a number of workshops now with students in them who will not touch AI. They will not use it. And there are concerns around that range from environmental concerns to copyright concerns. Some of the strongest anti-AI students I've run into were prospective art teachers at the UBC, and many of the art teachers are really frustrated how generative AI is impacting creators and they would not use the tools. Having alternatives for the students is great. Getting students to buy in, many students report being

too busy to try new tools. Absolutely. Trust and ethics, a lot of accuracy of information and related to how do we have time to reflect critically on the output? As we have Bing Copilot at our institution, I feel that this is the one we should be working with but..., and that's a great point. The one thing I like about Bing is that its inaccuracies give us a really good space for productive learning. Getting students to generate output and then evaluate that output for errors can be a really good way to engage students around learning and evaluative judgment and help them learn those skills. Live tutoring may become obsolete. Wonderful. How does GenAI and UDL together limit or support Indigenous students and Indigenous learning given both the program and theory is entrenched in colonial institutions and structures? Absolutely. AI is moving so fast, it's difficult to keep up with. Yes. I think a huge problem with that is along with this speed, comes our inability to become part of the critical conversation on it when it's always changing. One support that you could use. More guidance for students from institutions, so it's not all on individual instructions. Institutional guidance. I love this hands-on session, which I haven't seen enough discussing generative AI. More examples, time. I mean, time is the big one. I like that you've bolded that point. Cross-institutional PIAs, more practise, more courses like this one, a way to keep track of different GenAI options, institutional leadership and vision. Absolutely. Need to spend time testing things out and plan and how to use it ethically. Ethical framework for using it. Wonderful. So That brings us to the end of this activity. Again, what we can do after today's session is share back with you the Padlet. I'm going to save the chat. I can share back some of the links in the chat. And before we open it up for questions, Afsaneh, what would you like to add?

AFSANEH:

I just want to thank everyone for joining us and just to mention that knowing about different principles and the tasks that you want to do, there are lots of things, lots of changes that you feel you need to do. I want to emphasize that you don't need to get overwhelmed by the changes that you need to make. Every one small step that you make to make your course more inclusive and accessible, takes you to the right path for making our community more inclusive. For being here, it shows your commitment for inclusion and accessibility and I really appreciate all your time and for joining us today. If you have any question for us again, or you want to explore some of those tools, the chatbot or even any conversation around UDL and GenAI, Lucas and I will be more than happy. You can send us an email and we will follow up with you. Again, thank you for being here.

LUCAS:

Great, and I want to thank BCcampus, who's always innovative and leading the innovative conversations and providing the space. So thanks Helena and thanks Paula for running this session and inviting us.