

Transcript for OER Production Series: UDL and Open Educational Resources (May 31, 2023)
BCcampus session hosted on May 31, 2023
Host: Josie Gray

JOSIE GRAY:

Okay, let's get started. Hi everyone. Thank you for taking the time out of your day to attend the session on how we can apply universal design for learning, or UDL, to open educational resources or, or. First, I would like to point out our event code of conduct, which you would have agreed to when registering for the webinar. If you'd like to review the event code of conduct, my colleague who's helping me moderate the chat today will post a link there. Next, I would like to highlight that I've posted a link to the folder where you can download all of the resources related to this session on the slide. This link is bit.ly/beyondaccessibility If you go to this link, you will find the PowerPoint file for these slides, which are accessible to anyone who is using a screen reader and includes my full speaking notes. You'll also see a PDF version of the slides and a list of links to all the resources that I'll be highlighting during this session. All the links that are going into the chat that my colleague is putting into the chat, you'll find those links there as well. My hope is that this will allow you to easily refer back to the slides, adapt them for your own purpose, because they are an open educational resource. And engage with the content in a way and at a time that works best for you. While I speak, I will be reading out the content on my slides, as well as describing any visuals that are there for anyone who can't see the screen. In addition, we have enabled automatic captioning in Zoom, which you can turn on for yourself, and the recording will be properly captioned and then emailed to everyone following the session. These are some examples of ways that we're trying to incorporate accessibility and universal design for learning into our presentation practices, which we'll be digging more into in this session.

Before we get into the main topic of today, I would like to take some time to introduce and situate myself in relation to the lands that I live on. As well as the topic of accessibility and universal design for learning in OER. My name is Josie Gray, and I use she/her pronouns. For those who can't see me, I'm a thin white woman in my late 20s. My hair in a ponytail, I've got blonde hair, glasses, and a septum piercing. I'm joining you today on Moh'kins'tsis on Treaty 7 lands, which includes the territories of the Blackfoot Confederacy, (which includes the Siksika, Piikani, and Kainai Nations) Tsuut'ina Nation, and the Stoney Nakoda (including the Chiniki, Bearspaw, and Wesley Nations) also home Métis Nation of Alberta, Region 3. I have moved a few times through my life, so I'd also like to acknowledge the Tsimshian First Nation, the nations who are a part of Treaty 6 territory, as well as the Lkwungen and WSANEC Peoples as I've had the opportunities to spend time and learn on all of their lands throughout my life. As a settler, I have a responsibility to learn about Canada's colonial and genocidal history and the enduring inequities and injustices that this country has done. And support the work of Indigenous Peoples across the country who are continuing to fight for truth, justice, equity, safety, and rights to their own lands. I work for BCcampus, which is an organization in British Columbia, Canada, and supports all of the public post-secondary institutions in the province in

the areas of open education, learning and teaching, and other special projects. Specifically, I work on the Open Education team as the manager of production and publishing. In this role, I oversee the production and publication of OER projects that BCcampus funds. I also support faculty in creating OER that are well designed and accessible. I also manage the B.C. Open Collection, which is a collection of over 300 open textbooks and open courses. And you can view that collection at collection.bccampus.ca I have been working in the area of digital accessibility in open textbook publishing for nearly seven years. In that time, my understanding of accessibility has evolved from a very specific focus on web accessibility guidelines and accessibility checklists, to a more complicated understanding informed by universal design for learning and the social model of disability. All of which we will explore in this webinar. In 2021, I graduated with a Masters of Design and Inclusive Design from Oakhead University. That degree has also informed how I approach and understand this topic as well. The things I will be sharing today come from my experience in making open educational resources more accessible to disabled students and all that I've learned along the way. My hope is that I'll be able to share concrete things that you can do to make your resources accessible and flexible for all students. As well as concepts that may help you think more critically about accessibility and disability. However, it's important to recognize that I am not a disabled person. And also that disability is a huge category and there's a huge amount of diversity, even among people with similar disabilities. I say this because I do not know everything of what it is to make something accessible to all people. What may work for one person, may not work for another person. I want to really encourage you to dig into all of the things we're going to talk about today. And then seek out and listen to the voices of disabled people and disabled students in particular, especially the ones on your own campuses and in your classes. Lived experience is really valuable, and I've learned a lot from people with lived experience. So with that, let's get into this session.

This will be a rough structure of our webinar today. I'm going to start with a short review of technical accessibility, the session that we hosted a few weeks ago. Then I will introduce two concepts that will help us think beyond technical accessibility and conformance, so this includes the social model of disability and universal design for learning or UDL. Then we will move into how we can apply all of this to open educational resources by thinking about things like multimodality and multiple formats, accessible math, image descriptions, and more. We will go through lots of different examples.

To start, let's review the previous webinar on technical accessibility. If you were not able to attend or would like a refresher, my colleague can drop a link to where you can find the recordings of all of our past webinars. In this webinar, we covered a few common assistive technologies that may be used by students to access their course materials like screen readers, text-to-speech, and ZoomText. We also introduced web content accessibility guidelines, which are the minimum technical requirements that will allow students with disabilities to access all of the information in a digital resource. So WCAG is an international digital accessibility

standard that is developed and maintained by the W3C Web Accessibility Initiative. It is made up of four principles, and they are that digital content be perceivable, operable, understandable, and robust. Then finally, we went into more detail about accessibility guidelines that are most relevant when creating educational materials. Things like how to use headings, how to create accessible tables, use of colour, links, etc. So that's a brief summary of that last webinar.

At the end of the previous session, we discussed the strengths and weaknesses of accessibility checklists. And that's where I want to pick up our conversation today. The previous webinar focused on accessibility considerations that can be checked off. So for example, Do your images have alt text? Check. Does the link text describe the destination of the link? Check. Do your videos have captions? Those kinds of things. These checklist items are a great place to start because they are concrete and easily actionable. In addition, these items make up the very important minimum technical considerations to make sure students with disabilities can access their educational materials. However, a checklist approach to accessibility has a number of weaknesses. It makes accessibility seem like something that can be fixed later, which is often a lot more work. It does not ensure good design. It does not account for the multiple formats of OER. And it does not address the wide ranging challenges that students experience. And it doesn't ensure equal access to learning. In the session today, rather than being, rather than focusing on those technical requirements, we're going to discuss strategies that support designing for flexibility and choice.

Another thing that will help frame our webinar today is defining how we're going to think about disability. So I wanted to explore two different ways of thinking about disability. One is the medical model and then there's the social model. These are not the only frameworks for understanding disability, but I find that they provide helpful distinctions when considering how we can best support disabled students in post-secondary environments. The medical model of disability understands disability as an individual problem, affliction, or a deficit that needs a cure or accommodation. It sees disability as grounded in the individual, and this is the model that is used in medical settings. And it is also used at universities and colleges where students need to have a diagnosed disability to be eligible for an accommodation. In contrast, the social model of disability sees disability as emerging when there is a mismatch between a person and their environment. With this view, disability becomes more of a spectrum that can affect different people in different ways depending on their context, their environment, and the tools that they have access to. It's also a product of history and culture. For example, someone who has no vision and uses a screen reader to access digital content will not be able to interpret an infographic without asking for help. With the medical model of disability, it puts the onus on that student to ask for an accommodation. While with the social model of disability, it puts the onus on the person who created and shared that infographic to provide that information in an alternative format from the very beginning before it is asked for. The social model of disability points out that many of the barriers that currently exist, do not need to be barriers. Another example is a restaurant that only has steps to be able to access that restaurant. Those steps

could be a ramp and that barrier would totally disappear for someone who's using a wheelchair. That's a different way of thinking about access and disability.

What is the result of these different models in the context of post-secondary? As I mentioned with the medical model, the onus is on the student to request accommodations. To do this, they need a diagnosed disability, and they need to be registered with the accessibility services office at that institution. Generally, this is a process that requires a lot of self-advocacy and a lot of doctors' appointments, and just generally, a lot of work to do. And even then, students might not get all of the support they need to be successful. In addition, this model does not guarantee that instructors change their practices going forward and also only the students that request the accommodation receive the accommodation. It's not something that's made available for everyone. With the social model, responsibility shifts from the student to the person who is designing that learning experience. It's their responsibility then to reduce or eliminate barriers from the beginning. Rather than assuming all students are the same, it's assumed that students are different, and they have a variety of access needs and preferences based on their bodies, minds, and context. The diversity of students is not something to be ignored or downplayed, but rather something to be designed for. There still may be cases where students need accommodations, but then that information is used to improve the learning design going forward.

What is accessibility? Accessibility is what happens when we design and create resources, experiences, tools, and spaces that make space for and support the diversity of our bodies and minds and centres the needs of people with disabilities to ensure that they can engage in ways that work best for them. As noted in this definition, accessibility affects all sorts of things, both physical and digital. And for the workshop today, we are focusing on digital educational resources.

Something to keep in mind is that students face all sorts of barriers, even if they don't have a diagnosed disability. And that there's not really such thing as an average student. In an article by Jan Wilson, she argues that the classroom, "far from neutral, is constructed for a mythical able-bodied, neurotypical norm that neither reflects nor accommodates the wide range of diverse learners within it, regardless of whether these learners have been diagnosed with a disability." What she is getting at here is this problem that comes up when we design for what we think is normal or what we think is average. The reality is that there's no such thing as normal or average students. Students vary greatly in their interests, their family situation, their culture, background, experiences, strengths and weaknesses. And all students benefit when educational materials are designed to be accessible and inclusive.

All sorts of things affect the accessibility of a resource. And these things can be very context dependent, and they can vary from student to student. As an example, a student's day-to-day life can affect their access to education. For example, a student who spends an hour on a crowded bus every day commuting to school, and spends long days on campus studying. For this student, a heavy print textbook would likely be really annoying, and they might decide to

leave it at home rather than lug it to school. That might be an example of a barrier. Another example is differences in digital literacy among students. Many OER are primarily online resources. And for those of us who work on a computer all day, take for granted our comfort and experience when working with digital content. Even young college students who grew up with smartphones and easy access to the internet may not know how to search a PDF or understand how to take advantage of different features in Pressbooks. Or know that an EPUB file is something that they can access on their phone. And if your students are returning to school later in life, again, digital literacy and their comfort using digital materials is something that's important to consider, because a student can't learn well from a resource that they don't know how to use or they don't like using. Another example is access to technology. Not every student has access to their own computer. If materials are only available online, then those students will likely struggle to access them. So day-to-day life, digital literacy, access to technology, all of these things are very individualized and context dependent. And these are things where OER in particular has the potential to really make a difference. Everyone has a preference in how they would like to access their learning materials. And open educational resources that are available in multiple formats make it possible for students to pick the format that they are most comfortable with and will work best for them.

Let's now talk about universal design for learning, or UDL. UDL is a framework that can support flexible learning design and designing for student variability. UDL encourages designing teaching and learning environments and materials so that they provide choice and flexibility for students. UDL has three principles. They are multiple means of engagement, multiple means of representation, and multiple means of action and expression. Engagement is the why of learning. It's looking at designing learning experiences that provide options that motivate students to learn. Representation is the what of learning. It looks at how content is being presented to students and aims to create content that gives students options in how they engage with that content. Then action and expression is the how of learning. It looks at options students have for demonstrating and managing their knowledge and learning.

Now, since we are talking about open educational resources, I want us in this session to focus on the idea of providing multiple means of representation. That is the guideline that is most applicable to designing educational materials. For this principle, universal design for learning provides three guidelines. They are perception, language and symbols, and comprehension. And we'll go through each of these guidelines in a bit more detail. And then after each guideline, I'm going to provide a few examples of how you could apply that guideline to open educational resources.

The first guideline is perception, which has to do with providing options for students to interact with content that doesn't rely on a single sense, like sight, hearing, movement, or touch. Many of these things are closely related to web accessibility guidelines that we talked about in the previous webinar. However, a key aspect of the perception guideline is user choice and the ability to customize. This includes offering ways of customizing the display of information. Being able to change the size and spacing of images and text, change colours and increase colour

contrast, adjusting the speed of audio in recordings, or text-to-speech tools, and changing font. All of that digital customization of display. The next is to provide alternative auditory information. This can include providing transcripts and captions for video and audio, but it can also include American Sign Language, visual representations like sheet music or emojis, or visual or tactile experiences for sound effects like vibrations. Finally, offer alternatives for visual information. This can include text descriptions for images, audio versions of text, tactile graphics, and 3-D representation. Providing multiple ways that someone can engage with content. Let's go through some examples.

One example of what this could look like is making a resource available in multiple formats. For example, if you are creating your own readings or assignment descriptions, you might share them as a PDF file and as a Word file. The PDF file is easier to download and open, but Word has built-in accessibility tools like text-to-speech, as well as the ability to customize the display of text. So by providing both you're giving students some options in how they're going to engage with that content. If you're creating OER in Pressbooks, which is a self-publishing tool often used for creating open textbooks, you can easily produce OER in multiple formats, including a webbook, PDF and EPUB. Each of these formats have different strengths and weaknesses and are useful in different situations. PDFs are good for printing and annotating. The EPUB is great for offline reading on a mobile device as well as customizing the display of text. The webbook can be accessed in any browser, anytime, any device. And it'll also include all of the multimedia content and work with browser text-to-speech tools. There are advantages for each format depending on what someone is looking to do.

Another way to support this perception guideline is to provide content in multiple modalities by combining text, images, video, audio, and interactivity to give students multiple ways to engage with content. For example, using text-to-speech tools, having audiobook versions, having videos that convey different concepts as well as H5P activities, which we'll have more examples of in a bit.

This example shows a text-to-speech tool that is available by default in Firefox called reader view. It allows you to customize the display of text on a web page as well as read that text out loud. In this example, I have enabled reader view in an open textbook published in Pressbooks. We're looking at a chapter in the webbook. I'm just going to play a short demo so you can see what it looks like. [AUDIO STARTS] Linear measurement can be defined as a measure of length. The length of the table, the length of a piece of pipe, and the length of a football field are all examples of linear measurement. We might also refer to it as distance. Linear measurements represent. [AUDIO ENDS]

JOSIE:

So other browsers have similar tools, so you can look at different, like Google Chrome, lots of different plugins, so you can explore different plugins that might have different voices. The example that I just showed you, you are able to customize which voice it uses as well as the speed of the voice. So if you wanted to slow it down, if you wanted to change the voice that is

being used, you can. But these are computerized voices, so you're not going to sound like a person speaking. They do generally have a more computerized way of speaking. For people that use those audio, digital computerized voices, you get used to it and you also are able to listen to them generally at a much higher rate. Because the speech is more predictable. So for students that use screen readers and are used to using screen readers, they can generally listen to that speech at an extremely high rate and often prefer computerized voices to natural voices. There are some pros and cons, and you have to experiment with yourself.

Okay, here is an example of an audio version of a *Math for Trades* open textbook. The authors wrote the textbook and then narrated each chapter. And those recordings were compiled in a playlist in a video-hosting platform called Kaltura, where they can be listened to directly. So just show you an example.

[AUDIO STARTS]

Linear measurement can be defined as a measure of length. The length of a table, the length of a piece of pipe, and the length of a football field are all examples of linear measurement.

[AUDIO ENDS]

JOSIE:

Then those recordings were embedded directly in an open textbook.

[AUDIO STARTS] Linear measurement can be defined as a measure of length. The length of a table, the length of a piece of pipe, and the length of a football field are all examples of linear measurement.

[AUDIO ENDS]

With that example, an instructor recorded their own voice, so it's more of a natural voice. And then they embedded the audio clips directly in the textbook so students could listen as they read the content.

Here is an example of math content in Pressbooks that is written using the LaTeX markup language and then rendered with MathJax. One of the features of MathJax is it allows users to customize the display of math content. One of the ways that this works is that you can right click on any of the math equations, select "Math Settings," go down to "Scale all math," and then enter a percentage value for what you'd like all the math to be scaled to. In this case, I change 100% to 200% and all of the equations double in size. To change it back, right click "Math Settings," go down to "Scale all math" and change 200% back to 100%. You can also set the zoom so that only select equations. zoom. So again, right click, Go to "Math Settings" and then "Zoom Trigger." Here's where you can select what you want to cause an equation to zoom. Right now it is set to no zoom, but you can change that to hover, click, or double click. I'm going to select click now. When I click an equation, it enlarges based on the Zoom factor, which is also something that can be customized in math settings.

The second guideline is around the use of language and symbols to establish a shared understanding of the topics being discussed. This includes clarifying vocabulary and symbols by providing definition lists or symbol legends with alternative text descriptions. Clarifying syntax and structure. Supporting the decoding of text, mathematical notation, and symbols, such as through text-to-speech, which we'll talk more about. Promoting understanding across languages. For example, by providing definition to key terms in students' first languages. And then illustrating through multiple media. For example, represent a concept in two different ways, like a text explanation and then a video demonstration. Let's go through some examples of applying this to OER.

Here is a screenshot of a chapter in an open textbook published in Pressbooks. The author of this book used the Pressbooks glossary tool to provide definitions to key terms in the text. Terms that are glossary terms appear bold, dark red with this dotted underline. When students select the term, the definition for the term pops up. In this screenshot, the terms voltage, current, and resistance are all marked as glossary terms. And then the definition of voltage is displaying in this pop-up box. In addition a full list of glossary terms and their definitions are provided in the back of the book.

Then this is an example of a video tutorial that a VIU instructor made to demonstrate different hairstyling techniques. The videos don't have sound, but it shows the instructor demoing different hair colouring and bleaching techniques on a mannequin. This is an example of something that would be very difficult to demonstrate with just images and text. So by providing a video demo like this, students can watch exactly how the technique should be done as many times as they want.

Here's another example of how MathJax can make math equations more accessible. This video shows content in a math textbook that was written in LaTeX and rendered with MathJax. MathJax translates the equation into MathML, which can be read by my NVDA screen reader. This video shows how the NVDA screen reader interprets the equations. So get ready for more computerized voice.

[AUDIO STARTS]

What you do here is take the number of cubic inches you have and divide it by the number of cubic inches there are in one cubic foot. In three lines, line 1 foot cubed equals the fraction with numerator in cubed and denominator in cubed divided by ft cubed. Line 2 feet cubed equals the fraction with numerator 2,652 in cubed and denominator 1,728 in divided by ft cubed. Line 3. [...]

[AUDIO ENDS]

JOSIE:

That shows you an example of how the screen reader is interpreting those math equations. The final guideline is around comprehension to support students in constructing meaning and generating new understandings. This includes providing background information in context and

supporting students and bringing in their own knowledge. Also highlighting patterns, critical features, big ideas, and relationships. Guiding information processing and visualization. And then maximizing transfer and generalization. Let's go through some examples.

How information is organized and structured in an educational resource plays an important role in comprehension. That means thinking critically when you're designing your resource about how you will scaffold new knowledge. Consider how people will navigate the resource and find information. Pay attention to the number of chapters, the titles, and the use of sections and subsections. Use clear language and structure it so people can easily find what they're looking for. This could also look like establishing numbering systems for headings, figures, tables. This is useful if you have a lot of tables, and you want to be able to refer to specific parts of that book, so students can find something specific really easily. Then ensuring chapters have consistent elements and structure. What this looks like will vary from book to book depending on your subject and how much content you have. But the more intentional you are about thinking about structure, organization, and navigation, the more useful and powerful your resource will be, which on its own, will increase access.

Over the next few slides, I'll be showing some examples of different H5P activities that instructors have created to support students in comprehending different subjects. H5P is a tool that allows you to create web-based interactive activities and formative assessments. H5P is enabled in tools like Pressbooks and also a number of LMSs depending on your institution. It will allow you to build these activities or reuse activities created by others. You can do that directly in Pressbooks and then embed them in your webbook. For more information, you can visit the H5P website at h5p.org. You can also check out the H5P Pressbooks kitchen at kitchen.opened.ca. This is a site created by Alan Levine. It was used to support people who had received grants from BCcampus to create H5P activities for existing open textbooks. The project is done now, but the site has many great resources, so definitely one to check out.

Here is one activity taken from a writing open textbook. It asks students to identify all of the sentence fragments in the following 10 options. In this screenshot, I have selected all of the ones I think are sentence fragments. And then I can click the "Check" button, and the activity will let me know which ones I got right and which ones I got wrong. This allows students to self-assess their understanding of sentence fragments directly in the resource that they're reading.

Here's another example from a Vital Signs Measurement, open textbook. This shows an interactive video activity, which is demonstrating hand washing. For this activity, students watch the video and then the video pauses at different points to ask questions about what the video has covered so far or to provide more information.

Then the final activity I will show is image hotspots, which allows you to directly label an image. In this example, which appears in a business writing textbook, the sample document is provided to illustrate how to write clear documents. Different parts of the document are labelled, like the title, headings, topic and transition sentences, and bulleted lists. When someone clicks one

of those hot spots, more information about each of those items pops up, and information about how they should be used is provided. Another way to support comprehension is the intentional use of textboxes, which can be a great way to draw attention to key information that supports the main body of a text. For example, they can highlight the most important ideas of a section. They could walk through key processes or procedures, and provide concrete examples or case studies to support main ideas. In the screenshot on the slide, there's a purple textbox that contains an example of translating a ratio into higher terms. Textboxes are these visual cues that can help students identify important information and those kinds of things.

If you want to dig into universal design for learning in more detail, explore the other principles, look for more examples of the guidelines, I would recommend starting at the website located at udlguidelines.cast.org. There you will be able to explore all of the principles, read about the guidelines and checkpoints, which provide more detail about each principle and has lots of concrete examples. Definitely check that out to learn to learn more.

So far we've talked a lot about digital. We've looked at tools that allow you to have content read aloud, different ways of customizing the display of text, as well as using video, audio, and interactivity. But what about students who prefer or require a print version? I've got a bit of an activity for us. In zoom, if you scroll, there is an annotate button, I believe, at the top of the screen, which will allow you to type directly on this slide.

My question for you all is, why might someone want a print copy? You're also welcome to use the chat if annotate isn't working for you. But if you can use annotate, that means your responses will pop up on the slide. Why might someone want to print copy? Bad internet connection. Absolutely. Headaches. Reading is easier for some people. Yes, some people really prefer to read on a print copy. No personal computer. Can refer back to later. Absolutely. A break from the computer. Yes. To read offline. Absolutely. Refer to it later. To take notes on. Yeah. Being able to write, write in the margins as often. Visual processing. Absolutely. International students having a print copy to make notes, read where they can come back to it later. Yes. Someone shared that some profs don't allow computer devices in class, so being able to have a print copy with you. Personal preference. Absolutely, for sure. I'm trying to see if I had any other ideas. Some people are unable to read on digital screens. Sometimes screens cause migraines for people or visual processing issues. Being able to print it is often an accessibility need. Some people are not comfortable with computers, don't like to read on a computer, for sure, which other people have shared. Some people feel like they retain information better when they're reading print rather than digital. Absolutely. Lots of different really valid reasons why people would prefer print. Kelsey, would you clear our annotations please? And we'll go to the next. Thank you everyone.

Let's talk about some design considerations. If you think students are going to be printing your resource. When we're talking about creating resources that follow accessibility guidelines and incorporate UDL principles, it can be challenging to ensure that it's still possible to print the resource and that students using the print version are still going to be able to access all of the

same content. For example, with print, you have to pay attention to text size because once you've printed it, you cannot adjust that text size. You want to ensure everything that might be printed is at least a minimum size 12 font, if not bigger, and even consider providing larger print options for printing. In addition, you'll need to consider how students using a print version will access links while still ensuring the digital version uses descriptive link text. Those things are a little bit incompatible. But one way that you can do this really easily is by providing the URL of that link in a footnote or at the end of the resource, so students using that print copy can find that URL and be able to access it on their devices. Another consideration is how to ensure students can access the multimedia and interactive content. One way that Pressbooks supports this is by providing direct links to all H5P activities, as well as any audio or video that is embedded. So that students can go to those links and it will take them directly to those activities and so they can access the content that way. Another thing to consider is providing principle alternatives. For example, with H5P, you might have multiple-choice questions. It's fairly straightforward to provide a print version of that H5P multiple-choice question, so that is something to consider. Another way to make multimedia content available offline is to have a principle transcript of an audio recording so that there's still that option to print and everyone can get the same content.

The last part of this session, today is going to be just some time to practice describing images. Because describing images is something that takes practice, can feel really, really difficult and requires a lot of judgement making to figure out what to describe. Having some time to practice can be really helpful. I'm going to go through some tips for writing image descriptions, and then I'm going to have a few examples to give you the opportunity to practise yourself. For those who aren't familiar, image descriptions are text equivalents for an image that is provided for anyone who can't see that image. They are important in all sorts of contexts from describing images used in PowerPoint slides to images included in textbooks or images on social media like Twitter or Instagram. By providing text descriptions, you're making those images accessible to anyone who can't see them for whatever reason. Whether that's because they are blind or often if someone has a poor internet connection, their images might not load. Instead that text description would show up. There's multiple reasons to provide these descriptions.

In the last webinar, we provided some tips for writing image descriptions that I want to review. In terms of what to describe when you're working with an image, focus on the purpose of the image. What is the image trying to convey? What information would be lost if that image was removed? And this will depend on your audience and depend on the context. In terms of how to describe, you want to try to be objective. Avoid putting your own evaluations on the image. You want to be concise, as short as you can. And if the image is complex, start by providing the general overview of the image before getting more specific.

To give you an example of how context can shape a description. On the slide, I have a famous painting *Starry Night* by Vincent van Gogh. There are three different ways you might approach describing this painting depending on the context. You could just provide the name and the artist, which is what I've just done. It's a well-known painting, so that might be enough if the

content of the painting isn't important to the context. Alternatively, you could provide a description of what is shown in the painting, if that's what's important. Or you could provide a description of the brush strokes, which might be important in an art, in an art subject. There's different ways that you might approach describing this one image. What you focus on will depend on why you've included that image in your resource, and what you want students to take away from it.

There are a few different places where you can describe an image. Alt text is the short text alternative for an image that those using a screen reader can access. The alt text is what will also be displayed if someone has a poor internet connection where images aren't loading. Depending on the tool that you're using to create your OER, you will be able to add alt text when you upload the image or when you edit the image. You can also use the surrounding text or a caption to describe an image. This makes the image available to everyone regardless of whether they're using a screen reader or not. If you have a complex image, you can create a long description of the image and link to it somewhere else in the text.

I want to spend a bit of time talking about writing descriptions for complex images, such as charts, graphs, diagrams, and maps, because they generally require longer descriptions than what can fit in the alt text field. In these cases, you have to create a long description for the image that students who can't see the image can access. For some images, you might be able to describe them in a few sentences or a paragraph. But over the next few slides, I want to highlight two different strategies for describing different types of complex images that might be more effective and manageable. These guidelines are based on work shared by Supada Amornchat in a resource called Complex Images for All Learners. It's a really incredible resource, and my colleague has put a link to it in the chat. The first is using lists to structure your descriptions rather than just a paragraph. With lists, you can use a bulleted list or a numbered list to represent information that is presented in pie charts, in bar graphs, line graphs, and flow charts. This can make the information easier to digest and navigate rather than a long paragraph. You can also use data tables to represent information found in complex tables, pie charts, bar charts, and line graphs. This can support someone in navigating through complex information and data and being able to show relationships between ideas.

Let's think through some examples. I have an image on the screen of a map of Canada that shows the 11 numbered treaties that were signed between Indigenous Peoples and the Crown. Now the text on the image is quite small, so we will share a link to the original image in the chat so you can look at it on your own screen. What I want you to do is just consider how you would approach describing this image. You don't have to try to write a description. Think about what things you would include. What information is this map trying to convey? What information would you want to include in a description? And how might what information you include change depending on the context. How would you structure that information? Like I said, don't try to write out a description. You're not going to have enough time. But just try to think through, jot down some ideas about how you would translate this image into text. A way of thinking about this that might be helpful is imagine you're on the phone with someone else and

you have to describe this image to them. So I will give you two minutes. If you like, you're welcome to share ideas in the chat, but not at all required to. Then once time is up, I will talk through some considerations that I came up with.

So here are some of the things I would think about when trying to determine how to describe this image. First of all, this image is conveying a lot of information. It lists all of the numbered treaties and the dates they were signed. It also shows spatially what lands were subject to what treaties and what lands were not subject to any treaties. First, you'd want to consider the context. That means looking at what information is already provided in the surrounding text. In this case that wasn't given to you. But if it was in a textbook, that's what you'd be looking at. What information is conveyed only in the image? And then considering what you want students to take away from that image. For this example, students who can't see the image may not know how much land is covered by each treaty or the exact location. If I think this is important information for students to know, rather than listing the treaties based on the date they were signed, I could maybe list them by location. I could say number treaties listed from southeast to northwest or by size. Numbered treaties listed from biggest to smallest. Something like that. Another thing to consider is how much detail you want to include. For example, you could look up how much area is covered by each treaty or list what borders each treaty. There's lots of different... You could really get really into it if you wanted to. There's lots of things you could describe. The important thing is trying to identify the information your students need to get from the image. What's the most important thing? Why are you including this image? I forgot to go through my next points.

Okay, let's go through one more example. This is another complex image to try describing. Again, don't try to write out the description, but just think about how you might structure the information and what information you'd want to include. I'll give you two minutes. Again, you're welcome to share ideas in the chat or just think through it on your own, and then we'll share a link to where you can get this image in the chat. It's in a big PDF document, so you have to go to page 13 to actually find this image.

Okay. Let's go through some examples. I have two different possibilities of how I might approach describing this image. So the first one is using a bulleted list. In this example, I've started by providing a sentence that gives an overview of the chart. It reads: "A flow chart describing the poverty rates of different groups of children in Canada based on 2006 census data. This gives a high-level summary of what the chart provides before going into more detail, so someone can be orientated to what's being discussed. Underneath is a bulleted list with three items. The first bullet describes the top level of the flow chart, which is the poverty rate for all children in Canada. The next two bullets describe the two branches of the flow chart, which is the poverty rates for Indigenous and non-Indigenous children in Canada. And then underneath those last two bullets are sub points where the poverty rates of Indigenous and non-Indigenous children is broken down into further groups. This example uses a lot of text, but by using bullets with two list levels gives it structure that loosely replicates the structure of the original chart.

Let's show you another example of how this information could be structured. This one is the same data, same information, but set up as a table. In this example, again, there's a sentence provided to give context for the table. It reads: "A flow chart describing the poverty rates of different groups of children in Canada based on 2006 census data. The data is provided in the table below." And then underneath is a table with four columns. The column headings are "Group," which group of children? "Total children," "Total in poverty," and then "Poverty rate." This example is much less text heavy and makes it easier for students to review and compare the data points since they can move between the rows and columns of the table. However, it is more difficult to see how some of the groups are subgroups of others. For example, Status First Nation children is a subgroup of all Indigenous children. But that's not super clear from the way the table is structured. There's a downside to each method. I personally can't say which description is better. They both have their strengths and weaknesses. But I just wanted to demonstrate different ways of structuring the same information and to show you how tables and how lists can be used for complex images.

So if you're looking for resources around describing images, a really useful website that I would recommend is the POET Training Tool located at poet.diagramcenter.org It has information about when to describe images, how to describe images, as well as opportunities to practice describing different images. It's very education focused and there's lots of great examples there. So I would really recommend it if you're looking for more practice.

That brings us to the end of our session. Just to recap what we covered today. We talked about the social model of disability, and how that model puts the onus on educators to design for accessibility from the very beginning rather than requiring students to request accommodations. We talked about universal design for learning, specifically the principle of multiple means of representation, which looks at how to describe flexible educational materials that support learning and comprehension. We covered three guidelines within that principle. We talked about perception, options for students to interact with content that doesn't rely on a single sense, like sight, hearing, movement, or touch. We talked about language and symbols, so illustrating and defining concepts. Then we talked about comprehension, supporting students in constructing meaning and making connections. Then we ended with a more in-depth look at image descriptions.

Thank you so much for your attention and participation in this session. This webinar was the last webinar in our five-part OER Production Series. If you missed any of the previous webinars, you can access the recordings on the BCcampus events page. You might just have to move back in the dates in the calendar. All of the webinars were hosted over the month of May, so just navigate to the calendar and you should be able to find those events and find the recordings there. My colleague also put a direct link to where those recordings are all embedded on one page. That's another useful one to check out.

Okay, let's open it up for questions. I did see some come into the chat that I haven't been able to address yet. If you still want to go back and download the slides or the list of links, you can do that at bit.ly/beyond-accessibility. And let's get to questions. I saw a question just recently. For the table, is it possible to indent the subsections? With table structures generally for accessibility in tables, it's recommended that you keep your table as simple as possible, so to avoid merging or splitting cells, which would be one way to show relationships. But generally, that's not recommended because once you try to navigate a table with a screen reader, as soon as you start adding merged or split cells, it becomes very difficult to understand where you are in the table. It would work if you were just doing it for a visual audience, but it would not be a good choice for people using screen readers. One thing you could maybe do is add more of an explanation to convey the relationships before the table. You could add another sentence showing that some of these things are subgroups of another thing. That might be a way to handle it. Harper, are there questions in the chat that I can answer?

HARPER:

I didn't see any that either I didn't answer or were not already covered either by you or... Okay. If people have more questions, please put them in the chat. You're also welcome to unmute if you'd prefer to just verbalize your question.

DEB:

Josie, Deb Carter here. It was a great presentation. Thank you so very much. When you mentioned about subheadings or changing the table, is that for numbering as well? Would that be more difficult than the way that you have it? Like if you said level one, level two, level three.

JOSIE:

Like to use headings within a table?

DEB: Yeah.

JOSIE:

I'm not sure what the user experience would be like for that. I probably wouldn't recommend it. You could, if you weren't using a table, you could use headings. Bulleted lists kind of give you a similar effect that headings do of showing relationships between ideas. So if you weren't using a table, you could perhaps use headings to break up the different categories of information, similar to the bulleted list strategy. But generally, I wouldn't use headings within a table. Okay.

DEB:

And then in bulleted, is it better with... Should it be bullets rather than numbers?

JOSIE:

It depends on what you're trying to convey. I would use numbers if it were a flow chart, so trying to show order. If order or steps is important or like priority, anything like that, use a numbered list. If order or priority isn't important, then use a bulleted list.

DEB:

Okay. Perfect. Thank you so very much.

JOSIE:

Question: Do you have resources for developing materials for students with specific types of learning differences, such as dyslexia? Not specifically, but there is lots out there. So unfortunately, no, not right away. A number of the things that I talked about today though would be applicable and would be helpful for people who are neurodiverse or have different learning disabilities. Often being able to listen to something while someone reads is a regular accommodation. Those things of being able to provide students choice will often benefit students with disabilities. So they can choose what's going to work best for them, having those multiple modalities, having captions to go with your videos, having transcripts to go with your audio. Having different ways to have text read aloud is definitely a thing that can be very helpful.

BRENDAN:

Hi, Josie. This is Brendan D'Souza here. I'm the one with a question on the Pressbooks. I was just wondering, probably is similar to a question that was asked by someone else just now. Is there a list? I'm going to get a book together for an OER textbook on Pressbooks. And I was just wondering is there a listing of things that need to be considered when putting together a textbook? A whole list with different things with maybe links as well to information just to make life a bit easier? This webinar was helpful as well as the previous one that was done, but I was just wondering if there's some list of items that need to be considered just to make life easier. Yeah, I don't know if I do have... I do have an accessibility checklist, which is more focused on the technical accessibility webinar that I can share with you. If you're looking for something that's more like over the whole, everything you need to know to create a textbook, is that what you're asking?

BRENDAN: Yes, sorry.

JOSIE:

That's okay. I don't have a really short checklist, but we do have this resource called *The Getting Started Guide*. And it provides a high-level overview with links to where you can get more information when you need it. It might be a bit more useful than trying to go back to the webinars and find what you need. It's got sections on diversity and inclusion in OER. It's got a section on Pressbooks, section on accessibility in UDL, licenses and permissions, citation and attribution. It tries to be a bit more succinct with links to where you can get more. So that might be helpful.

BRENDAN:

Thing is, as you'd probably agree, I get started and then realize, oh, I should have done this work back, so I just want to be informed at the start so I get into doing it with that lens. For sure.

JOSIE:

I would definitely recommend just skimming through the main topics in that because that will help with that. Also, the first chapter has a workflow and responsibilities. So it goes through like the cycle of a general creation, so that might help, so you might know what could be coming or what you might want to plan for.

BRENDAN:

Okay. Okay. Right. Okay. Thanks so much. Yeah.

JOSIE:

Yeah. You're welcome. Any other questions? Okay. Well, thank you so much everyone for your attention and your engagement through the session. I really appreciate your time. The recording, once it is captioned and ready to go, will be sent out via email for everyone who registered, so that you can expect that in the next week or so. But thank you very much. Have a good rest of your day.