Webinar: 6985 ‑ 8. BLH Training: Best Practice for Writing Alternative Text for Complex Images
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>> Johan Rempel: Good afternoon, everyone. This is Johan Rempel from CIDI. Thank you for sitting in on this training. Much appreciated. Best practice for writing alt text for complex images. We have the honor of hearing Valerie Morrison present again. We talk a lot about alternative text as being more of an art than a science and that certainly will be the case of what you will learn today. There's a lot of creativity and it's not a black and white issue. Hopefully you'll get a lot out of today's presentation. Next slide.

So, once again, big thank you to Heather. She's captioning this so we can practice what we preach from an accessible standpoint. There's two ways to access the live captions. One of them is the StreamText link that Heather has already placed in the chat. And you can also click the closed captioning button on the Zoom control at the bottom where the big red arrow is pointing to. Next slide.

And if you've sat in on any of the previous presentation, you're familiar with who and what we are here at CIDI, center for inclusive design and innovation. We are housed at Georgia Tech under the College of Design. Everything we do is focused on disability awareness and accessibility on one level or another. Next slide.

With that I will pass it on to Valerie Morrison.

>> Valerie Morrison: Thank you so much, John. It's so nice to be here. Thank you everybody for participating today. This is I think the 5th time that I've talked to y'all's group. So you're probably familiar with who I am. Those of you who are just attending this standalone webinar on complex alt text description, my back ground I got my doctorate in English literature and worked for 10 years as an instructor at UGA teaching English, writing and literature and it really has served me well because a lot of what we do in e‑text and in accessibility work involves writing and describing images.

So using my editing skills, my grammar skills, learning how to analyze either a piece of literature or a piece of art really does serve me in my current position.

So now I work at CIDI and I have worked here for about 9 and a half years. My team and I are often transforming print work into accessible digital files. So a person may need a digital version of their text book. So we're often doing a lot of file conversion and accessibility work to remediate files.

So the goals today are simple. First, review the basics of writing effective alternative text description. We've covered that. We had another webinar previous to this one a few weeks ago.

>> It's still doing it.

>> Valerie Morrison: The basics of writing alt text. I'm going to launch right into an over view of that and talk about how to approach more complex image description. Second, learning editing strategies. When you start to describe a complex image, you can just add more and more and more detail and that can overwhelm the listener. We're going to talk about how to go for clarity and precision with your writing.

And the bulk of the presentation will be looking at different examples. I won't really talk too much or give you too much description of those images, but I want them to function as leave behinds. So all of the PowerPoints that we have put together for these webinars will be given to you. So you can look at a lot of these examples after the fact if you ever have ‑‑ for instance, if you ever have to describe, you know, a complex infographic or a timeline or a world history map, then you can look at the examples that I'll be going through in the end of today's presentation. And then the last goal is I just want to touch on the really, really hard part of alt text description. Some people think the STEM content is the hardest thing to describe. I would say the hardest thing is describing works of art and images that are going to appear on a test. So those are things I get asked very frequently by educators or people who are putting together resources for quizzes or online interactive experiences where you want to describe the image but you don't want to give away an answer. So those are the hardest and I want to leave those for the very end.

As we go through these examples, keep in mind that I've been doing this for almost 10 years and I don't know all the answers. I don't have all the right answers. This is very subjective. It's an art more than a science. It's very subjective. I'll be including a couple of examples where I ask my team members to describe images and they came up with a different description. So everyone's going to have a different approach to writing image descriptions.

I'm going to show a few examples of how we the experts do it and also keep in mind that we all have our own approaches.

So starting off with the first goal of how do we write alt text? This is a check list we had on our previous training on writing basic alt text. I wanted to have this slide in this presentation in case some of us missed that first training.

So general tips: You always want to work from general to specific. And that is going to give someone an overview of what the image contains and that helps provide a framework for the listener. It also makes sure that if you have a very long description that could possibly be cut off then you're really putting that important information at the beginning.

People who have different technology, they might have a different screen reader, they may have adjusted their settings so they only hear brief alt text description. It might cut off after the first 100 characters. You don't know what someone's settings are. So you want to make sure to get to the point quickly and provide all the pertinent information ‑‑ that overview is your first sentence of alt text description.

You want to remember to use proper grammar, spelling and punctuation. Do not include any hardline breaks in your description. Don't hit enter, enter to create a new paragraph. Write in one paragraph, and use proper grammar, spelling and punctuation because screen reader technology does pronounce capital letters and pauses for punctuation.

Provide information in multiple modalities if possible. So I'm a big advocate for if you have a complex image adding a caption before the image and that describes it not only for someone using assistive technology but for people who are not ‑‑ people reading the print version or people who are sighted who are not accessing the alt text. So a caption for a figure or a table provides that extra bit of context that you need that what you want people to focus on in the image or in the table.

If you have a figure caption, it allows you to write less in your alt text which is always a benefit.

You also want to reduce redundancy when possible. The worst is if you have a definition or a complete description of the figure in the paragraph next to it and the alt text directly repeats it. Often when I'm training people on how to write alt text ‑‑ when I have students here at Georgia Tech who want to learn how to do this, they might take a few shortcuts because they're smart and copy the text describing the image and use that but that's terrible because then the person listening has to hear it twice with their assistive technology.

So if it's described in a figure caption, you can do less in the alt text description. Your alt text description can focus on the visual impact or what is missing from the caption.

And then the last tip that I have that really is very important is making sure that you always edit your alt text thoroughly. If possible, enlist another person to QC your work if possible. The reason I say that is because your brain is so busy translating the visual information into language to try and describe it for someone who can't see the image. That translation ‑‑ it's like learning a foreign language. A lot of your language skills ‑‑ your brain is very busy. So your grammar goes out the window. I was 10 years as an English major and I still get someone or multiple someone’s to edit for me so I know I have another person looking at who will fill in the blank to see if I'm missing anything.

So here's an example of a very complex infographic. So it is very beautiful to me because it has all kinds of dinosaurs and I love dinosaurs. The brief image description for this infographic I've written in the lower left corner. An infographic of the evolution of dinosaurs that includes a timeline of different eras, a phylogenetic tree, and illustrations of each dinosaur. In that one sentence I have the entire mass of information that this infographic is trying to convey. I have talked about the illustrations of the dinosaurs, that there's a genetic tree happening, there's a timeline. That's the precise way that you should approach any kind of image description, especially in the STEM fields because it gets complex. I'm sure as you can imagine with scientific diagrams.

So this one sentence gives a great overview of what the image contains and depending on my context, and audience I can go into more detail if needed.

So I've begun with an overview sentence. I've worked from general to specific, I've kept my description neutral and informative. I didn't tell you which one was my favorite dinosaur or which is the cutest. I used proper grammar, spelling and punctuation.

Another thing to think about especially with STEM diagrams and complex images is focusing on meaning instead of focusing on appearance. So you'll find that this example of a chemical equation there are symbols, there are circles with pluses and minuses and arrows and squiggly arrows. There's a Greek letter Y which is... a gamma ray. And there's an explosion in the center. If you are new to describing images, you're going to want to ‑‑ your goal is to first think about what this represents and describe the meaning and not focus too much on what you're seeing. I know that's hard to imagine because most people want to say there's red arrows and blue arrows and a yellow explosion, there's circles and pluses and minuses. In this example you want to instead of describing a ball labeled with a plus sign, you could call it a positron which is much more clear, concise, easy for someone listening to understand the importance of it.

Instead of saying a squiggly arrow or a squiggly red arrow with a weird Y which was actual alt text written by someone on my team, you would call it a gamma ray. I had to read a little bit in the book to figure that out. When you don't get caught up in the colors or symbols like on a map, instead of saying little stars in order to represent battles, you don't have to talk about what kind of symbol it is or an explosion symbol. You can say battles are represented on the map and it's much more clear because you're focusing on the meaning instead of the appearance.

So here is a very complex infographic that I like to use when I talk about cognitive load. Always keep in mind cognitive load is also referred to as auditory fatigue. It's something coming into the [indistinct speech] when people are describing images. It's not just something people are talking about or thinking about in accessibility but they're also talking about it in the classroom. You want to present information in a way that's not going to overwhelm someone's working memory. The average person can remember about 7 items at a time. Any more than that and that information starts to drop off and does not make it into the long‑term memory banks. So when you are describing an image ‑‑ when someone is reading your description of an image, if you have more than 7 items, chances are they're not going to retain all of that information.

So simplifying and reducing alt text length is going to reduce auditory fatigue and move closer to the opportunity of someone being able to understand and retain the information.

So, if I were to briefly describe this infographic, I would describe it as a complex infographic titled: Universe infographic elements. With the following sections: Temperature on planets, milky way galaxy structures, moon expeditions... and then I would list the sections in bright yellow.

If depending on my context, purpose, audience I need to provide more details of any of these sections I might include it as a table below the image or a separate paragraph describing it. I would not try and write a dissertation in that little alt text field. It would really do a disservice to the person listening because they would have to listen to so much information and they might not retain it all and it's causing a lot more work for you as well.

General approach to writing alt text, you want to create the basic overview sentence and work from general to specific.

So writing alt text takes some time and takes practice and before I get started, especially on a complex image like we just went through with that universe infographic, I will sit and think about that image for a good minute or two before I even start writing because I want to approach it in a way that is systematic and I want to approach it in a that I can finish it without tearing my hair out. So I'm really going to sit and think before I start writing.

Once I've written my alt text, I want to take some time between when I've written it and when are I start to edit it. So I'm in a very lucky position here at CIDI that I work with a team of expert alt text writers. So I can ask someone from my team to check my work and make sure that I've described all my images adequately.

But if you don't have a colleague or a team of experts at your disposal, you can wait several hours or a day and go back to edit your alt text. And this editing is really key because you'll find that you made grammar and spelling mistakes and you will also find there may be ways that you can clear up some confusion or reorganize some of the things you've written to make it easier to comprehend.

I think we've all have had the experience of writing a paper or having a crunch deadline presented to you and you go back and reread what you have written and you don't even know what you were going for. I don't know where my brain was. So if you can take time between when you wrote it and edit it will allow you to see your writing from a fresh perspective.

So here are as former English instructor, here are my pieces of advice, my approach to editing the alt text that you've written.

One approach is to use clear and concise syntax. Edit for clarity. Go back and see if you can simplify the word choice. Use plain language instead of jargon.

Make sure to use parallel structure in your sentences. In that confusing infographic with all of the universe elements, I wanted to create a list ‑‑ an infographic with the following elements and then list the titles of each one. I wouldn't want to say, an infographic with a pie graph and there's also a line graph and a bar graph that does this. I want my sentences to be very regular and not dynamic. Not different and exciting. This is not creative writing. You want it to be very easy for someone to understand it. Always make sure to spell out acronyms or symbols. In the mode of using very clear or concise syntax, if you have an acronym ‑‑ if you have U.S. instead of United States, different screen readers might pronounce that differently. So I always advocate that people write out United States just so they're sure it's always going to be read correctly by a screen reader. Another editing tip is how you organize information. Work general to specific.

That works how our brain works. We want to see the big picture first and then fill in the details to understand things. You want to be able to give someone that general idea and then they can fill in the gaps. Grouping like items and describing relationships is another way to help someone process information. If you have a diagram comparing two trees and you want ‑‑ you first say it's a diagram of two trees and then say how those two trees are different. It's easier for someone to understand that as opposed to saying a diagram, the first tree is shaped like this and it's this kind of tree and this color. The second tree is ‑‑ you know it's harder to understand.

So describing images by their similarities first, differences are second. And organizing information in predictable ways and that echoes that parallel sentence structure. That someone understand how this information is coming to them. There's no surprises along the way because that can make them forget what came before.

Okay. Third editing technique. Another editing approach is to go back and edit your writing and take out any redundancy, repetitiveness. If you're repeating words it's to help clarify information. Try not to repeat ‑‑ directly repeat what is in a caption or surrounding text. Your alt text doesn't have to be brand new information but if you are directly repeating what's in the text, then you're just wasting the person's time.

So I would advocate if there's no visual information that you need to convey ‑‑ it's fully described by the surrounding text or the caption ahead of it, we often leave images blank if there's nothing else to say.

But most of the time there's something to say. If the caption describes the meaning or the importance of the visual but you could describe what someone who's not sighted would need to know about the visual appearance.

Edit your description if you become wordy or you use the same phrase over and over again. You can cut it out and reorganize things and create a list.

Integrate symbols or language into your description. Meaning describe the function of symbols, not the appearance of them. So cut out wordiness. You don't need to say the red squiggly arrow. You can just describe what it represents.

And then finally, the results. The goal of all this editing. If you apply these different approaches to editing or think about them, hopefully you're going to reduce the mental tasks that the person has to perform in their working memory and they'll be able to focus on what you're describing and move these concepts from working memory into long‑term memory. You'll also try to eliminate misunderstandings. Decrease the time and energy needed for them to focus on what image you're trying to describe. You'll help them with understanding and integrate new concepts.

Getting into the heart of our presentation today I want to look at several different examples of complex images and STEM content. There's a lot of different examples that I included and hopefully this will be a take home leave behind resource for you that you will be able to look at. I'm not going to go too in‑depth with each one because I wanted to cover a wide range, but once you get the PowerPoint you can right click on all of these images and see the alt text that we typed in. Here's an example of a very jam-packed informational timeline.

So, if I were asked to describe this image which I was, I would be ‑‑ first I would wonder what the context and my purpose is. Whether it be student or customer wants a brief description or a long description. This timeline was extended across two pages in the textbook. So using our approach that we've talked about previously, you're going to want to have that first sentence of your alt text description give an overview. So first I'm going to name what type of image it is. If there's a title. And then my general informative sentence about what's contained in the image. So if I give you a one sentence over view of this image I would say a timeline ‑‑ no, let's revise this. I'm editing in the moment. A black history timeline from ‑‑ and list the dates. 300AD to it says 1200AD on the right. This is a confusing ‑‑ I'm sighted and I'm having confusion. I would have to sit down and think about this for a while. The alt text I wrote was timeline titles the black history timeline from years 380AD‑1200AD with pictures of important black history figures and events along the timeline. That was my very brief overview sentence of image description.

Now, if the person needs all of this information, we would perform optical character recognition in order to capture this essay at the beginning in the black and white text on the left, and all of the paragraphs describing the different figures and the events. We would go ahead and do OCR in order to capture that text so at least they would have all the text information and it would make describing the images easier because the text we would capture and provide it separately.

Another way to think about approaching a timeline is to just convert it into a list. So, you could have it as a list below. Not in the alt text. The alt text could still be a brief sentence. Below the image you could provide this information in an alternative modality. So you have it as a big infographic, the timeline as an image and below it you could have a list of dates and events. Or a list of the important figures all in one row.

I think that would even be better for me and I do not have a print related disability.

But looking at this the text is so tiny. The images are not giving me great information. The fact that it's organized in such small font with so much jam packed with really ‑‑ I think it feels like they're trying to make it inaccessible. I know they're trying to design it to make it visually interesting but it would be easier for me to input this information into my brain if it was a brain list of events but that's my take.

So that's how my brain works and how I approach describing a timeline.

Here's an example of a supply demand curve. There's alt text in the PowerPoint if you're interested. You're going to begin by describing the X and Y axis. Then describe the positively sloped curves, then the negatively sloped curve. And then note where these lines intersect. I've had a lot of trainings where people ask me about supply demand curves so I wanted to include this. You can name the points or the lines. Write P1, P2, Q1, Q2. The color does not matter. The dotted lines verses the solid lines does not matter. You're talking about price and quantity and how the lines interact with one another and where they intersect. For math and chemistry equations you can imagine how complex these can get. Working with medical information, there's probably a lot of chemical and math equations that are in your websites and your literature there are brief approaches ‑‑ we have brief and complex examples on the left. We have a complex math equation and the brief way to describe that is an equation. A complex way to describe that ‑‑ a far more involved ‑‑ we have an example here. I'm not going to read it out and make our captionist have to type all of that out for you but this complex description on the bottom left of the slide really goes into detail and we've used verbose math speak guidelines. On the right-hand side we have a chemistry equation. And in my brief description example I described it as a chemical equation. My complex description down below we have ‑‑ for both of these we use the ‑‑ I can't think of the word I'm thinking of. We use ‑‑ we usually approach this by saying begin equation and end equation and then we put the description of the equation between those. We do that to make things clear for someone listening with assistive technology. When you have one equation, you usually have several. So having that begin equation and end equation will clarify the start and finish of each unique specific equation.

So here in this example we have begun equation, gaseous upper‑N2 plus 3... [Reading]. I apologize to our captionist for going through that one.

This is based on chemistrian guidelines we developed in house.

There are many tools that are being developed now that promise to automatically describe math, and chemistry equations. There are many out on the market. Some of them cost money. Some of them are free. All of the ones we tested so far none of them really work well on advanced math or science equations. They might work on grade school, but as soon as you get to algebra or advanced linear algebra or calculus, you really need a subject matter expert to describe the equations.

So we have an example of a map. This is a complex image where I will sit and think a good full minute before I even start typing because my approach is just to start typing. That's my go‑to. Just get something on the page. That's a habit that I work hard to ‑‑ I resist. I resist starting typing because thinking this through and figuring out what is the main point of this map is going to help reduce the amount of information, I force my listener to sit through. Again, the color and shape and appearance, symbols don't matter. It doesn't matter the arrows are in red. It doesn't matter what color the land is. The information in this map that is important is that there are trade routes for different explorers. I use the information around this map in the textbook to come up with one sentence that briefly incapsulated what is going on in this map. I say one sentence but I think I see 3 sentences here. I'm going to read this briefly. Please notice that I do not list all the countries. I do not list even everything in bold or in large font. What I am really concentrated on is the main information about the oceanic route.

[Reading].

So I had described these both independently but then I went back and thought, you know what, these routes are almost identical except for when you get to the cape of good hope, one ends and the other continues.

So I could even simplify this alt text that I've written further by saying that both routes take this initial trajectory down the western coast of Africa, and then one ends at the cape of good hope and de Gama's route continues upward. Using that similarities rule.

So here is another example of an even more complicated map. A map ‑‑ my brief alt text is as followed: A map of Europe titled areas of industrial concentration from 1870 to 1914... [Reading].

So that is my one or two sentence overview of what the map contains. I also focused on the inset. The inset is usually helping guide your focus on what's most important to pay attention to. I did not talk about color or traded diagonal lines, I did not list the countries, I didn't even list all the highlighted cities. I just focused on what the inset is guiding me towards in this image. I also included a much longer description that goes very in‑depth the first two sentences are identical but then it goes into detail about the different areas of industrial concentration that are indicated on the map.

So depending on your audience and focus, you could go into more depth.

Here we have another example of a STEM diagram. This is from an ecology text book. This is how we would briefly describe it or a longer description. Most individuals who are accessing alt text they prefer to have a brief description. So that's why I'm including both brief and long. I would say there's maybe 3‑5% of our orders that we get throughout the year are for long description of images. That's for people who are maybe accessing this information in a testing situation. They need that long description of their anatomy and physiology information.

So brief will make it baseline accessible. And then depending on the purpose you can go into more detail. So my excerpt of soil is a diagram showing a cutout of soil formation in three stages: Immature, young and mature. A lot of these STEM images that I used as examples I grabbed them from different presentations I've given or different projects I've worked on. I have this habit of creating a lot of lists. In that complex infographic I showed you and in this one here I said in three stages: And then list them. That makes it easier for someone to understand. This image contains the following pieces or segments or phases or graphs or elements and then you list them. And it creates this very regular structure for someone to process and understand. It also makes it easier for me to break down the image and describe it. And then if you're interested in a long description of this image I have it here and you can visit that in the PowerPoint.

Here we have a very complex image that is an Hertzsprung‑Russell diagram. We had a Georgia Tech student work on this who was specializing and had taken classes in this. They described the heck out of this if you look at this long description that takes up this entire slide here. If I were to describe this in a brief way, I would describe it as a graph. I would say the luminosity relative to L subscript sun is on the vertical axis. Surface temperature in K is on the horizontal surface. Then I would list the different things pointed out on the graph. The white dwarf, the main sequence, the horizontal branch, the asymptotic giant branch. So you can describe this as a regular line graph or if you're a subject matter expert you can provide a longer in‑depth description. As you can see there's a huge range of amount of detail you can include, I recommend brief over long. In an educational context or depending on what your audiences is expecting and how in‑depth you want to get you can get very long with your alt text description. In a case like this if we were providing alt text that was this long on a regular basis, I would advocate that we take this out of the alt text and create a long caption for each image. That way everyone has access to this information and the actual alt text that we write can be a lot more brief. So here's another complex STEM infographic about genetic coding. This information is difficult to parse even for sighted individuals. So I went ahead and converted this into a table. With specific column headers that would make this more accessible.

So in the next slide I'm going to show you if I've taken all of this beautiful ‑‑ it's nice in the circular format. If I took this out and put it in a table, it might be a little bit easier for someone to understand. Especially if they're accessing this with a screen reader. If I were to try and describe this image in words, I don't know where I would start. A big circle with a lot of letters. And then I might list all the letters. I can't describe this adequately without putting it into a table.

So it's a lot of data in that graph. So converting a graphic into table form it makes all of that information ‑‑ splits it up into different categories. So we have column headers here for amino acid ‑‑ it's not genetic information. Well, it is genetic information. So amino acid and the symbol and the DNA codons. So someone can tab through and get each information from each cell and revisit it if they want.

Creating a table title and caption before that would help someone know before they entered into the table whether or not they need to hear all this data. It could give a brief ‑‑ like a figure caption. A table caption will help describe that table for someone using assistive technology in a very helpful way. All right. For the last portion ‑‑ I want to thank you all for making it through those tough examples of different STEM images. I want to turn to some art examples because it gives you an idea of ‑‑ even if you're not describing art work on a daily basis on your job, it gives you an idea of some of the consideration you need to take. Your purpose, your audience, how to describe something so subjective as art. And the same goes for test questions because you have to think about the purpose. What is your alt text doing? What should your alt text not do? How many are you holding back? These are examples of art alt text description where you really have to pause before you begin to think about your purpose. So here's one of my favorite art works. It's Botticelli's Primavera. I focused on the name, the date, where the painting is and how it came to be. So my brief description is... [Reading].

I remember when I fell in love with this painting, we were standing in front of it and our tour guide spoke for about an hour of what each figure represented. On the left you have [indistinct speech] who has flowers blowing out of her mouth. He took us on a journey. Here is another brief description that is a moderate description that someone on my team created. It goes into more depth. This was written by James. James decided to focus not so much on a general brief description but looking at the visual impact. What is going on visually in the painting. Neither of us talked about color or style or what kind of painting style this is. I think I mentioned it was a tempera painting. James did go into more depth about the figures and what they're doing, how they're interacting with one another. That Cupid is overhead. That certain characters are holding hands. Mercury on the left is stirring the clouds with his wand. So James was to describe the visual impact. Again they left out color, style and that's a big part of visual impact too. So when you are describing art, I just have a slide here where I listed out some things to think about. What do you want your alt text to do? What do you want your audience to get out of the alt text that you're writing? Because there's always something that gets left out. Especially with art. Especially with ‑‑ we're going to look at examples of anatomy and physiology and scientific diagrams. So think about your context and audience whenever describing images. Think about what do you want to focus your description on. In this example you could focus on the artist style, color and composition, the allegorical meaning, the artist's influence or the historical context. All of those were left out of our brief description. I'm not telling you this so you think we did a terrible job with our alt text. I'm telling you this because it's helpful to think about what is your end result. What is your goal? So when you are writing alt text for an image, you want to think about how long do I want this alt text to be and you want to think what is my intention for people to get out of this? Is this for an art history exam? So I need to talk about the stylistics and Botticelli’s influence. Or do I want someone to understand the metaphoric meaning. So considering your audience is key.

All right. Moving on to some more science-based examples. Here is a diagram of a human skull shaded different colors to represent the different bones of the skull with lots of blank labels. Up above in the left it says check your understanding, label the following figures. So this is a test example of a skull and the instructor is asking someone to label the parts of the skull.

This would be very difficult for someone as a test if they were blind or low vision because they can't access the image. So some alternative ways of asking for this information or providing this information ‑‑ instead of presenting a diagram where someone fills in the blank, you could ask someone to list the bones of the skull from top to bottom or left to right or clock wise or by region or by quadrant. List the bones of the lower skull et cetera.

You can also have a list where a person matches each bone to its description or function. So a matching exam would work.

You could rewrite this question itself into an essay question and have the student describe the bones of the skull and have them talk about how they're inner connected and proximity to one another.

Another way of accessing how someone understand information is to provide a tactile graphic. Our braille team has a thermoform machine which allows them to reproduce an image with a raised touch so someone can touch it. Or you can have a 3D skeleton model.

So this is an example. These are examples that we're getting into with the artwork and the testing where sometimes alt text isn't enough. Sometimes alt text can't fully describe or get you all of that information that you want to convey. So you want to think about alternative ways of providing that information.

Provide it as a table, provide it as a list, create a paragraph or essay about the image instead of asking someone to identify parts of the image.

Here's another example of a figure with a caption ‑‑ a pretty healthy caption too. The caption here is in two parts because there are two diagrams here. I'm going to read this aloud. It says figure A, the trachea... [Reading].

I'm sorry I had to read all that. We have a very robust caption for this two‑part image in a science textbook. And then here is the description that I would write to fill in the blanks. To fill in the blanks to go beyond what the caption is described. Two images, A and B... [Reading].

I just list all of the labeled elements in the image. Now, I point this out ‑‑ what I like to point out about my description is that I do not talk about the physical appearance of this tissue because I don't know how. I don't know how to talk about ‑‑ it's pink. It's red. It looks like tissue. So describing things in anatomy and physiology textbooks is difficult. You're always going to lose something. The habit people have when write STEM alt text is, they want to type out all of the text and name all of the tables. So in this example ‑‑ I want to make sure we have time for questions at the end. I've listed the different labeled elements in the arm and shoulder I mentioned how their deep veins and superficial veins are identified on the diagram. What's missing is I don't talk about the spatial relations of these veins to one another. The size of the veins, where in the body they occur or how they're connected to one another. These are things to think about depending on your purpose, depending on your context or audience. Does my audience need to know more about the size of the veins? I would say the color or the symbols and the appearance is not so important but how they function, is that important? So think for a while about ‑‑ you don't want to just rely on the labels. You want to think do I need to go into more details depending on the purpose.

And here we have one of our last examples of two human skulls. The first is shaded different colors. And the one below has a more photo realistic tint to it. Regular bone colored. These two images contain a lot of visual information. So, describing them you would really want to first think about what is the context, what do you want to get out of it? The initial approach would be to say figure 8.4 the anterior view of the skull, in illustration format and photograph format. The next sentence I would be tempted to list all of those labels if I had to go into more detail, however, depending on the context or the purpose, maybe I should talk about the ‑‑ not just the names of the structure but the appearance of the shapes of the structures, the location of each bone on the skull, how they're next to one another. I could describe them in a clockwise formation. So thinking about what information do I want my audience to get out of this and also if this is educational, this is for a testing situation what information would I want to withhold so I'm not giving away the answer to someone.

All right. So the last example this is an example that I would find impossible because I do not have a good spatial memory. All of my brain power is in language. So this would be the hardest test for me. This is an example of a diagram that has many, many different countries silhouettes. The test is to identify each country by their silhouette. So an alternative to this would be to answer questions about the size or location of a country. To provide essay questions about the country's GDP or imports or exports. Or rely on tactile graphics or thermoforms that students can feel and identify. This would be hard to describe. If I had to describe this, I would say a chart with 30 country's silhouettes and beyond that I have no idea how to describe the boarders of each country adequately in order for someone to identify it. One looks like a dragon. One looks like a sea dragon. They all look like land masses to me. So, these are examples that I want to include when we're talking about really describing complex images. Sometimes alt text isn't enough. You need to provide different information. Provide that data in an alternative format like in a table or figure caption or describe this briefly and then maybe giving alternative ways of assessment afterwards.

Ending on the most complex: Does anyone have any questions for me today? And I want to thank you all for hanging in there. I don't see any questions in the chat. Please feel free to take yourself off mute if you would like to ask a question live or you can type in the chat.

>> Johan Rempel: While waiting for questions, Valerie, I want to thank you for the detail you put into this. Some of these slides were completely new to me as well. So Valerie really put a lot of time and effort into this. Keep in mind this is being recorded and will be archived. Just like the previous ones this will be sent over to Allie and you can review this at your leisure. If there's specific points that resonate with you and you want to review those, you'll also have the PowerPoint saved as an accessible PowerPoint, as well as a transcript if you want to do a quick word search on anything that Valerie mentioned. That's another way to access this content.

Valerie, we have a question: You mentioned something called verbose math guidelines, could you share a link?

>> Valerie Morrison: I might send that ‑‑ I have several links for math resources that I'll provide to John that he could send out to you all after the presentation. Or if you want me to ‑‑ John, will you send this to everyone?

>> Johan Rempel: I'll send this to Allie. If you want to drop in a couple resources into a word doc and save as a PDF, I will include that to the resources I provide to Allie.

>> Valerie Morrison: I will do that right after this. We have the math speak guidelines that we rely on and other sources. We also developed our own. Carolyn asked about how many words do most screen readers read of alt text? We talked a little bit about that in our previous training on writing alt text. The default cut off for JAWS screen reader is 250 characters. And that is why I usually advocate for brief alt text rather than long because the default for a lot of people is that 250 character cut off.

>> Johan Rempel: Molly responded especially for describing charts and graphs that is useful. Thanks for another prez, CIDI. Molly, thank you all. I believe you all had a long weekend with MLK yesterday. So I know it's hard getting back to a full inbox but we value and appreciate you attending today. Thank you.

>> Valerie Morrison: Thank you, John. And thank you for everybody participating. I know it was a lot of information but I wanted to provide a wide range of examples because I learn best by seeing or by experiencing. I learn by doing. So seeing the example and trying it myself gives me a template. So I wanted to cover a wide range of things. How we approach different types of images and talk about what doesn't work and when you can go beyond alt text description. Especially when things get very complex. So sometimes you have to think out of the box. Thank you, everybody.