

3Play Webinars | How To Deliver an Accessible Presentation

REBECCA Hi, everyone, and thank you for joining us today for the session, How to Deliver an Accessible Online
KLEIN: Presentation. I'm Rebecca Klein, and I'm a content marketing manager at 3Play Media. And I'll be moderating today. And I'm joined by Dr. Sheryl Burgstahler from the University of Washington and Dr. Raja Kushalnagar.

RAJA Hello. My name is Raja Kushalnagar. I don't know how to say my own name. But just say it how you spell it
KUSHALNAGAR: because the first symbol is just written just the way it is.

REBECCA Thank you, Raja. And they're both here today to share the challenges that people with disabilities face in
KLEIN: delivering or participating in online presentations and also tips for making a presentation and its accompanying materials accessible. And with that, I'll hand it off to Sheryl and Raja, who have a wonderful presentation prepared.

SHERYL Well, thank you for joining us today. Raja and I have worked together on a project called AccessComputing,
BURGSTAHLER: which is a National Science Foundation Award, number CNS-2137312. And our URL for that project is uw.edu/accesscomputing, all one word.

So I'm speaking that out because one of the tips we're going to give you on giving a presentation is to assume that not everyone can see the screen. It could be because a person is blind. It could be because they're just accessing the audio on a presentation. And so you want them to be able to follow along what you're doing.

So we're going to talk about delivering a presentation from the presenter's point of view. So there are a lot of technical details that go into some of this, like captioning and so forth. And that would depend on what conferencing system you're using. We're using Zoom today, which is a highly accessible conferencing program. And so we definitely recommend it.

Our institution at the University of Washington was instrumental in helping Zoom make their product more accessible. When it first came out in the market, it was terribly inaccessible. But now because of our efforts and other institutions around the country, it's very accessible.

I think it's helpful to look at ability on a continuum and to make sure that we are always aware that it's not always related to a disability. So everyone has an ability in a certain area but not necessarily a disability. So we have a double-edged arrow here from the left of not able to the right on able and various abilities listed, like the ability to understand English or to understand social norms.

Someone might rate themselves low in either one of these categories because they have a learning disability, or they might be on the autism spectrum. And so social norms, understanding English could be difficult to them. And so it could be because of a disability. But also it could be because they grew up in a different culture. English is not their first language, whatever. And really, when you think about it, what we need to know maybe is what someone's ability is but not necessarily that they technically have a disability or not. So we assume that people with a broad range of abilities are going to be at any of our presentations.

The ability to see a screen, I already mentioned that in that we don't know if any of you are unable to view the screen today. But we're just assuming that there is someone that can't view the screen. So we're just going to imagine, throughout the presentation, that one of you might be calling in by phone, listening by phone, and don't have access to the screen. So it's very easy. Rather than asking ahead of time who has a disability, we just prepare for having a person with that type of ability or limitation for some other reason in the audience.

And then the ability to hear or to read print, to quickly enter text, to communicate verbally, tune out distractions, to learn, to manage physical and mental health, and so on. And so we could all rate ourselves in this session today on these different abilities. And my guess is there wouldn't be two people in this audience that would have the same exact rating for every one of those abilities. And so we can just assume diversity.

It's also important to keep in mind that most disabilities are not obvious to other people. So you can't tell by their appearance on a Zoom screen or even in an on-site presentation whether they have a disability or not. And that most people, even if they're invited to do so, will not necessarily disclose their disability and request accommodations.

They might not think they need them. They don't want to be a bother. They think it's private information and shouldn't have to be shared. But it's a very personal decision. So we can't assume we know if people with disabilities are in the presentation.

So I'm thinking what we need is a paradigm shift, where we go from a reactive to a proactive design of products and environments. So rather than waiting till someone asks for something, we anticipate that they'll be in the presentation. We don't have to reach perfection. We still would allow people to have special accommodations. But we should have to provide routine accommodations, such as reading the content presented on the screen, including that that's presented in images.

And then we need to move from a design for the average person to design for everyone. And so that's where we're going with this today. Now, once upon a time, we already did this in a different area, of course, and that is the sidewalk curb cut. In the image on the screen right now is from the front page of the *UW Daily*, which is a student newspaper at the University of Washington. And there's a picture. It shows a young man in a wheelchair.

And the back of his chair has a sign on it, all in capital letters, so we know he's shouting, RAMP THE CURBS. GET ME OFF THE STREET. And so there was a protest there, at least one person here at the University of Washington. But there are many others around the country that were really pushing for curb cuts in sidewalks. This was back in 1970. And universities like our own were pushing back on that because people would ask, how many people do we have in wheelchairs anyway? And do you realize how much it would cost to go back and put curb cuts in all these sidewalks?

Well, we know that it wouldn't be much more expensive to put them in if you put them in while the sidewalk is being created, but it is a lot of work to do it after the fact. But fast forward to today. Curb cuts in sidewalks is just the best practice in designing curb cuts-- I mean sidewalks.

And so that's what we like to be on presentations, on online instruction, on websites and whatever, that people just accept that you should make things inclusive. And who uses those curb cuts now? Well, mainly people with delivery carts and baby strollers and maybe skateboarders and people with wheelchairs and walkers.

So the whole idea is that the umbrella term for that is universal design, the design for products and environments to be usable by all people to the greatest extent possible without the need for accommodations. And so we want to just minimize accommodations but still provide them when necessary beyond what we do. But we shouldn't just wait to have to provide accommodations.

So today, we're talking about, how do you apply that universal design to a presentation? Well, to get started, be sure to invite participants to request disability accommodations. Like I said, you still should have people request them. For one thing, they may not know what you're going to do in your presentation. They might not know whether you're going to have captions or not.

So put that notice on your flyers or on your website so that they can contact you and ask you what provision that is being made for universal design. But then also, they might have to request something if it's not standard practice. And then proactively design the presentation to be accessible to people with a wide range of abilities. So you just try to do this ahead of time.

As a universal design, it's an attitude. It's a framework. It's a goal. It's a process. There's a lot of literature. You can read about it. But some of the characteristics is it values diversity, equity, and inclusion. It promotes best practices and does not lower standards.

It's proactive and can be implemented incrementally. You don't have to do everything. If you do one thing, then that's one less thing someone might need an accommodation for. Serves to benefit everyone, and minimizes the need for accommodations. Those are the characteristics of a universally designed product or environment.

Sometimes it's helpful to think about real people. And so here are four people that are in the DO-IT program or in our accessible technology services team at the University of Washington here in Seattle. And my guess is if you make your presentation accessible to them, it will be accessible to many other people as well.

So the first person on here is Zayn. Zayn is deaf. And so captioning videos or your presentation on Zoom, in this case, would be the thing to do for Zayn. But you also can just include captions. Make it possible for everyone because there are many people that benefit from captions besides people that are deaf. I like to look at the transcript of a presentation because sometimes I might not be paying enough attention, and I lose the train of thought. That's not necessarily a good thing, but it happens.

And others as well, including English language learners, who can benefit from seeing the words as well as hearing them. Anthony has multiple disabilities, physical disabilities, and does not have a usable voice. He can benefit from chat if you make sure your chat room is open because he does have technology that allows him to type in responses.

If you're going to create a website or something to go with your materials, particularly if you're promoting them, though, it's helpful for you to know that this technology he has, as for other people with physical disabilities, you can count on it fully emulating the keyboard but not necessarily the mouse. And so in your promotional materials, if you have a website and you have to have a pulldown menu, make sure that you can operate that using the arrow keys on the keyboard or some other way on the keyboard in addition to being able to use the mouse.

Then there's Jesse. Jesse has multiple disabilities. She's someone that-- learning disabilities in this case. She benefits from material that's well-organized, not too much content on the screen, like a lot of people do, like me. So that's important.

But then if you're going to distribute the materials afterwards, to make sure that you distribute them in a text format. So if she chooses to, can use her text-to-speech software to read the materials to her. This is also important in the materials as supplementary to your presentation because she can read things much faster with greater comprehension if she can see the words and hear the words as well.

Hadi, our last person here, is blind. And he also needs access to the text format in any materials that you're going to distribute with your presentation. But he needs a little bit more than Jesse because Jesse can see the screen, and so she can see-- or the material, so she can see headings and subheadings and so forth, where Hadi cannot. And so he has a screen reader that has a lot of capabilities, including being able to skim through the document and read the headings and subheadings and what level there are.

So he can look through a long document and know that, oh, this is heading 1, and this is heading 2, and this is heading 3. And so he can see the structure of the document just as other people who can't see the document are able to do. And then also formatting lists. And so he's warned. A screen reader will warn him that what is following is a list of seven items, for example. And so he knows he's not just in the middle of the paragraph. And then alternative text to describe images and even the destination of hyperlinks.

So preparation for the presentation. As I mentioned, being familiar with the accessibility features of your online system is important. Sharing relevant accessibility information with the participants, like saying that there will be captions. In promotional materials, tell how to request accommodations. Distribute accessibly designed slides and materials.

And so we've already covered some of these things. So that's how you can prepare. As you're getting your PowerPoints together, even though you might just think of how you're presenting them, make sure that they also have alternative text and other accessibility features, particularly if you're going to distribute them to all the presenters or all the people in the group, like is happening today. But even if someone asks for those as an accommodation, you want to make sure they're in an accessible format.

Physical spaces. You might think, well, why physical spaces, and we're doing online presentations? Well, sometimes online presentations are delivered within a physical space. So we can't forget that we need to have wheelchair accessible locations, wide, clear aisles, multiple places for wheelchair users to sit so they don't always have to congregate in the back of the room or along the side.

Leave some open spots in the middle and in the front as well. And offer microphones for the audience if they're going to be-- or there will be a question and answer period. Otherwise, have the facilitator repeat the questions so that people can hear them.

And then the slide itself, individual slides here, use a high contrast color scheme, large sans serif fonts, plenty of white space. Keep the text brief and the graphics simple. We, at the DO-IT Center have a collection of line drawings-- there's one on this screen right now-- that are really consistent with what you're talking about. But they're not too distracting, and they also are quite decorative.

And so we make these line drawings-- I don't know how many we have, 50, quite a few-- available to people who would like to use them in their presentations or in their publications. And we prefer if you give credit to the source. But you can find them at the DO-IT website, which is uw.edu/doit. And it'll tell you on that, when you look at our resources and line drawings, it will tell you how to download them but also what credit, if you're going to use them in a publication or something, that you should give the DO-IT Center.

So do not require participants to distinguish between colors. So this is not about disability, but it is about people who are colorblind, which is not considered a disability. And for instance, red and green are very difficult to distinguish for some people with colorblindness. But there are also a lot of other combinations.

So you can just avoid them, or just make sure that you don't have-- that anything you're asking people to distinguish between, there's something else that can distinguish, for instance, a triangle with red, filled in with red, and a square filled in with green. And so they can recognize the image shape as well as the color.

Do not require participants to distinguish between colors. Use the caption videos. And use simple, non-moving backgrounds. That can be very distracting for all of us. They're pretty cute, but that's best not to use them. And then consider recording the presentation so people can go back and revisit the presentation.

Then when it comes to the delivery, present the content in multiple ways, if you can, with an image, with text and so forth, and of course, with your voice, so telling about the content as well. Let participants engage in multiple ways, particularly if it's a longer presentation. It's hard in a presentation like this. We don't have much time together and a lot of people here.

But we do have chat open, so you can send questions there or send comments to add to this presentation, some other tip that we didn't think of when we put this one together. Using polls, having people go off into small groups can be effective if you have a large group. And I've found it to be effective to use a Google Doc that the whole group can have access to. And that's where they can put their comments that maybe would be in chat. That way, they're recorded.

And I leave that Google Doc open for a few weeks. And so they go back and add to it or at least make a note of some of the things that were included in that presentation. So that makes it something you can keep beyond the presentation rather than the chat, which is pretty much gone after the presentation is over.

To speak all the critical content on the slides, including the images. And that's a personal choice if it's critical or not. This particular image on here today, which shows someone with a physical disability using a computer, I normally would not describe that because I don't think it's critical to what I'm saying. But other people might feel differently about that.

Use plain English. Spell out acronyms. Explain jargon. I use low-hanging fruit a lot, I realized. And so in my writing or in a class that I teach, I say, if you're not familiar with that phrase, this is what I mean by it. That's important because people might come from different cultures, different countries where that isn't really a very commonly used expression or maybe from a different generation where they don't use that anymore. But all you have to do is describe it briefly.

Turn on the captions in the conferencing software, or ask your technical leaders or facilitators today to do that. And then use captured videos if you're showing videos. And then what about the follow-up? Well, provide accessibly designed slides, handouts, web resources. That's a different topic not covered in this talk. But make sure you apply accessibility practices to your Word documents and PDFs and their web pages that you're referring to and so forth.

And then in the evaluation, if you're giving an evaluation, ask for disability status of the person doing the survey, anonymous, of course. And ask for feedback about accessibility, and see if you can get some feedback in that regard. So now we're going to move on to special issues for participants or presenters who are deaf or hard of hearing. So Raja, can you take it from here?

RAJA Hello. And so I want to discuss how to meet diversity experience for the deaf and hard of hearing. The **KUSHALNAGAR**:interpreter, you could stop signing. I have one interpreter speaking and one signing.

OK. So same thing. Other people who have disabilities have difference between identity and functional. Individuals identify as deaf and hard of hearing. But how they prefer can be a variety or how they determine.

And it depends on the person. And once somebody sets one up-- so usually, for example, we can't caption before. With Zoom, we would use the Zoom software. It wasn't accessible in many different ways.

There were issues and differences of visual and audio accessibility, which I will discuss later. But because of that, we have to be careful on thinking about, what is best practice and best policy to provide auditory and visual accessibility for the deaf and hard of hearing?

It doesn't just mean one or one is better than the other. It means both. Next slide, please.

Now, here, we're going to talk about aural perception and visual perception. So first, most people who speak know about the sound bubble. And in that sound bubble, it expands.

Another issue within listening [INAUDIBLE], you can hear double-- you can hear double the distance. And it can become hard to hear and assume things that are-- things are part of it. So from a distance, from afar, it can be hard to hear.

But reverse it for individuals who need visual and auditory from anywhere. That can cause some limitations, of course. And it really depends on the environment itself. So the design for auditory communication is different than the design for visual communication.

Now, most platforms are designed for both speaking and visual, but when one increases the other. So we have to think about how to change the design for that. And so I'm going to touch on that and discuss about that and accessibility choices for Zoom and other platforms, the same issues of language representation, how you speak and how the captions pick it up or how you sign.

Like I said before, I don't know how to speak my name. But I cherish how you spell my name because your first language is reading English, and captioning is very easy. So I follow that. But know that captioning is not always going to connect-- going to capture all of the communication.

It's very up and down. Well, and that's another story. So one thing about auditory is there is no distance of importance for listening. And there's more means of receiving that information. So I'm going to actually go to the next slide to discuss about visual perspective.

OK. So now let's talk about visual perception. It has very different characteristics than hearing perspective. So for example, directly and split in slices for a visual perspective, you can't see all around you. You have to swivel your head to see the vision that you want to-- or the look that you want to see.

You have to follow with your eyes. And that causes very-- it provides limitation. So there are two things that are good for individuals, to let you know, that can read from far. And it decreases the linear distance. So say for an individual, there's two deaf signers who are signing from far away from each other, say, across the street.

It's hard to speak to you across the street. There's positives and negatives of both of them. But it's often a better approach is to have both individuals standing together. And this way, you can have slides and speaking in comparison, so you can see both and be able to expand on what is being spoken.

Now, say you're translating speech to visual and auditory functions for perspective. What is the difference and similarities between the two perspectives? So now, we need to set up our knowledge-- now that we know that the setting of those two perspectives, it will help design your final presentation and have a successful presentation.

So for example, when you have captioning and slides, you can give time for the individual to read the captions because they're watching-- their visual is focused on the captioning, but they're also looking at the slide. And if you have a teleprompter, for example, the problem is even worse because you're reading so fast, and then you have to read slide by slide or line by line.

And so that's why a lot of people prefer captionings over having that transcript. And say, for example, for hard of hearing individuals, it depends on their ability to hear audio. Sometimes they can prefer a transcript because they like to listen and then look at the transcript so in case they miss information, so they don't have any confusion.

And they can look at the history to go back. And I've justified that through research and studying previously. And sometimes it depends. Again, people have different preferences. Some may prefer the transcript. Some prefer captioning.

Some prefer sign. It just depends on their life experiences and their preference. Also, behind that, what's really an issue connected with visual and audio perspective? We're going to talk about that. Next slide, please.

I believe this is a video. Oh, here we go. OK. So you can see here in this section, in a hard of hearing person who is listening to a story, for example, sometimes individuals have an accent or have a different impression on what they hear to match what actually is being said.

And so you're very familiar with stories. I'm sure most of you are very familiar with the story "Little Red Riding Hood." Now you know the story. Read this passage, and do you understand it? And could you click the next button?

This is saying, what is going on in a hard of hearing experience. Go ahead and hit next for the next option to come. Now, this right here, compare the difference. This is maybe what's a hard of hearing individual is experiencing in the first paragraph listening versus what is actually being said in the second paragraph. So they are letting you know that the language is being translated differently in the auditory way.

It just depends on whether they hear well or if a person has an accent or impression. And here, many people internationally, deaf and hard of hearing benefit a lot from the transcript or from captioning. For example, captioning was first developed for deaf people. But 90% of people who use captioning are not deaf.

Often, international individuals or others like to have captioning on with their presentation, whether it's TV, worldwide. And studies show that both within the US and the UK, over 20% of all TV watchers regularly use captions, have it turned on at all times.

So that is just one example where universal design is so important, not only on the TV, but also with communication and Zoom and other things like that. And when it's available, now, I understand language, it's not perfected within the technology.

Accents happen. And un-understandable auditory does happen. Really, again, it depends on the human viewer and having the ability to fix those problems. Captioning is not always an acceptable solution.

For 24/7 situations, that's a very important topic, such as the newsroom. We have to have accessibility to that information. There's no fixing something or fixing a situation right away. But it's important for humans to stay in the loop and to be able to have full accessibility of the captioner and be able to review the captioning at all times for all information.

Same thing with airplanes and autopilot. It's safe to fly, but imagine if there's a problem. You have to have a human take over. So putting that concept in perspective.

So that is the ability between-- or the spectrum on listening to audio perspective and visual perspective. And the younger generations, as they grow, more and more of the younger generation is getting used to captioning and transcripts. Already, 60% of social media likes the use of captioning, that it's already available to watch. It's fast. They can read it faster.

And it's the difference between auditory and visual perspective to show what is favored, whether people like to read, like text and exchange of listening to a message, or chat on the phone. So that explains your perspective, listening to a phone versus listening to a phone message. Next slide, please.

OK. So to summarize, it is important to provide an informed communication and improve communication to the fullest when we're bringing together audio visual presentations and allowing the individual themselves to choose what to watch, just like a signer, video, and Zoom.

It allows me to enlarge the interpreter, see the interpreter, and see the visual part of it. Flipping it around, the old way in Zoom is everything was box by box, and it didn't allow me to control the size. So it was hard for me to understand the signer. And there were so many people on the screen.

So now, with my control, I can change the setting of the interpreter, and others can do it, can change it as well based on their need. And it's dependent upon the software.

So improving this optimization for individuals, again, going back to the same example of captioning. It used to be the host had to turn on the captioning. And now the user themselves can turn on the captioning on their own, which means universal design has changed. It has influenced the ability for individuals to use it.

And so it's important to keep those policies in mind and think about all users through software. It allows people to fit their own preference.

So now I want to show you an example of how visual accessibility-- so auditorial perspective is the same and also different and is really a challenge. And I'd also like to discuss how visual accessibility captioning is different from visual signing. So I'm going to ask the person, can you click on the video to start it?

Now you have the explanation. I want you to understand what it said recently. So this is an example of a person who is watching a slide with a transcript. This text transcript is automatic. And it has no language method, which means there's no periods. There's no punctuation, those types of things, which is fine.

So now, as well, you have an eye tracking device. See the lines? It helps you read each of the words. And that shows you what viewers are experiencing with any type of sound. So you'll recognize here that a lot of the time spent on this transcript and reading is spent on reading and is a hard split visual attention.

So next time a person is reading and going back and forth, such as the deaf and hard of hearing audience, it'll remind you to give them time to process the information on the screen. So I'm going to play the recording again for you to watch both. Go ahead and play it again.

And notice, at the same time, it spends a lot of time reading and being behind on the slide itself. So if there's a lot of information on the slide, it can be really hard to understand. And so that's why captioning is so important. So next slide, please.

Now, here, you'll be able to see signing. And this is a different perspective than captioning. And they're speaking exactly at the same time. And it is designed for communication and not too much for information. So it tends to look word by word and incrementally.

And so when you watch the eye tracker, focus on the facial expressions and the hands and then on the slide next to it. But it's still some split attention. But also, there's less communication time, so having disability with the attention shift. Go ahead and play the video.

So here, you can see that it's easier and less tiring to watch the signer between the presentation and the signer going back and forth because we're putting them side by side, not going line by line by line. It's a lot easier to follow and continue signing with the language. But one issue and challenge with a signer is that different languages have to be translated.

And so sometimes what really depends on the verbiage and the vocabulary could be very specific as well. And it has to be translated. And you can lose information during that time. So sometimes I'm very bilingual. I can transfer back and forth between signing and English.

But if it's very vocabulary-heavy, I actually prefer the captioning or the transcription. But if there's a lot of back and forth and social interaction, then I prefer the signer. And so the characteristics are very different between having the captioning or text accessibility versus the signer and having the measurement of slides. So keep in mind universal design and the services.

And I believe-- is there a next slide after this? OK. So now this is the end. And so we want to talk about the accessibility resources for the deaf and hard of hearing.

SHERYL

OK. Well, thank you very much, Raja. That was really informative. The resources I have up here now are most

BURGSTAHLER:

related to what we've been talking about today. AccessComputing, which is the project we're representing, is uw.edu/accesscomputing. And we are, in this project, both Raja and I, are co-PIs. Richard Ladner is our PI on that grant from the National Science Foundation.

And we're increasing the success of people with disabilities in computing and IT careers, which includes being able to go to presentations and gain the content. So it's very broad. We work with faculty in helping them make their courses more accessible to students with disabilities but then also encourage them to include disability or universal design content within their classes. And then we also work directly with students with disabilities to help them get into internships at computer and IT fields, companies in industry, and also in academic positions.

Another website you might find useful is Accessible Technology, which is at the University of Washington. But it'll tell you things like how to make a PDF accessible, et cetera. And we have a series of videos for learning how to make videos and documents and other materials accessible to people with disabilities. And that's at uw.edu/accessibility.

And then the Center for Universal Design and Education is hosted by the DO-IT Center, funded by the US Department of Education. And that's at uw.edu/doiit/cude. And in there, you will find a book that I just happened to write a couple years ago, *Creating Inclusive Learning Opportunities in Higher Education, A Universal Design Toolkit*. It looks at all types of academic support technology and so forth at post-secondary institutions.

So we're ready for Q&A. I was watching the Q&A a bit, and I noticed someone asked a question. I think I understand what they were asking, but is there some kind of an accessibility checker for presentations or whatever? I don't know of any for when you're giving a presentation. You certainly can put a checklist together, but no automated one. But for your materials, like PowerPoints and Word documents, et cetera, those companies have accessibility checkers built into them.

And so you can do an accessibility check for your PowerPoint, which I did on this particular presentation. So when you get a copy of it, you should notice that there are alternative texts for descriptions of images. And you have to be careful about the order that you put things in and have headers and so forth. But the thing to remember there is those checks are automated. And so consequently, they really can only test a few things.

And so just because-- it's a good thing to do to check for accessibility, but there's a lot of other things you need to consider. So Word has a checker as well that checks for alternative text on images. It can't tell you whether the alternative text was useful, though, but it can tell at least if you have it.

Now, in the case of a learning management system like Blackboard or Canvas, there is an add-on product called Ally that is produced by Blackboard but can interface with, I think, any learning management system, at least the popular ones. And it does a check. But it has its limitations as well. For instance, it'll tell you if you have inaccessible PDFs.

But sometimes faculty, if they're really tied to their PDFs, they might use an inaccessible version, but they also copy and paste the content within the pages in the learning management system. So I would say that is providing access to that document, whether it's the syllabus or whatever. And so but you'll get dinged on that. Ally would say that you need to fix that PDF. So they're limited, but they're worth using.

We find Ally very useful on our campus because it increases awareness. It was rare that I'd go to an event and someone would come up to me and ask me about accessibility of PDFs. And I don't think anybody ever did until Ally was deployed on our campus. And then it's like, what's that? What do you mean accessibility? So anyway, that there are some checkers in that regard. Any other questions here or comments?

REBECCA KLEIN: Yeah. So I think we had quite a few come in. And I would encourage people to keep asking. I see a question here that says, I know that deaf and hard of hearing folks are not a monolith. So preferences really vary. Are autogenerated captions helpful for webinars, or should we keep hiring human CART folks?

SHERYL BURGSTHALER: I can make one comment about that. We always ask for requests for accommodations, and people will ask for sign language interpreters or captions. So we've been doing that for many years. But it's interesting. The captioning capability in Zoom is so much better than it used to be. We actually have people who are deaf that request the captions, which we provide automatically, by the way, so they wouldn't have to request it. We will provide the sign language interpreters.

But they like the captions because even though they're not perfect, they get that it's instantaneous, almost instantaneous. And so they don't feel like they're getting these gaps that you have to have if you're having a sign language interpreter. And so we've been kind of surprised at that. And sign language interpreting isn't always just perfect either. And so have you noticed that, Raja, in your travels or your personal experiences?

RAJA Give me one moment.

KUSHALNAGAR:

SHERYL BURGSTHALER: I think that the key here too is always to respect what the person prefers. And so I offer captioning automatically but then find out what they'd prefer.

RAJA KUSHALNAGAR: But like you said, captioning, it's nice because it's instantaneous. So it's nice, but in the breakdown, sometimes there can be missing information in the captions as well. And you don't know. There's no easy fix to the problem. But also, for a deaf person, sometimes they won't know what's missing because they don't have the accessibility to that auditory perspective themselves.

So it's really important to have that information accessible because-- and especially, I believe as a legal requirement, we need to be able to fix that and always offer that accessibility to the individual, depending upon their preference. But again, it's 24/7. It's fast. It can be used. But inflexible.

SHERYL Yeah. That's what we find too, that it's not-- captioning doesn't replace the need for sign language interpreters.

BURGSTHALER: And it depends too what the presentation is. There are some presentations where you would tolerate that inaccuracy. If it's an academic course, very technical information, you just have to-- you just want to have that human being doing the signing.

RAJA Yeah. Yeah, also with deaf individuals, they don't always understand the speech themselves. The interpreter can

KUSHALNAGAR: help them understand that communication. And that has happened in my situation before.

REBECCA So I see in the chat, we have another question here that says, do you have suggestions on how augmented reality may be made more accessible if built into a presentation or an e-book or an installation? So how can augmented reality be made more accessible?

RAJA So one difference in virtual reality, auditory, remember, is sentences, and everything is 360. Auditory is 360. And

KUSHALNAGAR: you can't read captions behind you. So sometimes I think we have to be careful where we show the captions and where we show the signer.

And so but through research, we are following and showing what it's going to do. And it shows almost a 2D factor. Oh, I'm sorry. And then there's three different places-- I'm sorry, 3D vision. So it just all depends.

REBECCA OK, great. And I think we have time for maybe one more question. I see one that asks if there are any master's or PhD programs focusing on digital accessibility?

SHERYL There are. And California schools have something along that line. And I'm sure there are other schools as well.

BURGSTHALER: Raja, it looks like you might have some ideas.

RAJA Yep. Yep. Yep, Gallaudet has a accessibility learning human program and center. We recently just established it

KUSHALNAGAR: this fall, in the fall of 2022.

SHERYL And some disability studies programs, and there are a lot of those around the country, will usually have-- not

BURGSTHALER: most of them, but actually, some of them do have a class on accessible IT and assistive technology within the disability studies. I have to say, though, I'm disappointed that many programs do not in disability studies or even a disability services course.

I teach online at City University of New York, and we have one on assistive technology and accessible IT design. But I don't know how many actually include something like that. I think it's really important.

REBECCA Yeah. Well, I think that's all we have time here today for. But thank you both for a fantastic presentation, and

KLEIN: thank you to our ASL interpreters as well and everyone for joining us and asking great questions. And I hope everyone has a great rest of their day.