

This unedited transcript of a continued webinar is provided in order to facilitate communication accessibility for the viewer and may not be a totally verbatim record of the proceedings. This transcript may contain errors. Copying or distributing this transcript without the express written consent of continued is strictly prohibited. For any questions, please contact customerservice@continued.com

Learning for Children with Auditory Access Needs:
Insights Gained During COVID,
presented in partnership with Seminars in Hearing
Recorded January 19, 2022

Presenter: Cheryl DeConde Johnson, EdD

- [Christy] It is my pleasure to introduce Dr. Cheryl DeConde Johnson. She provides consulting services for educational audiology and deaf education through her practice. And she currently holds adjunct faculty appointments both at Salus University and the University of Arizona. And Dr. DeConde Johnson is a co-founder and member of the Board of Directors for Hands & Voices. At this time, I'll hand the mic over to you.

- Great, thank you so much for hosting this, and I wish I could see all of you out there and at least in pictures, but I can't. But I just appreciate you attending today and look forward to your feedback and your comments. This continues to be a timely topic, and I think becoming even more so. So let's go ahead and get started. We have some disclosures here that I will let you just see briefly, and your learning outcomes. We hope that you'll be able to describe three general learning challenges for deaf and hard of hearing students during COVID, explain a modification in the use of mic remote microphone systems for online learning, and describe four parts of the SETT Framework to identify assistive technology needs of students.

So I wanna start by my own disclosure. I do not walk in your shoes. I may understand from what I learned when I'm in my consulting role with schools, when I'm teaching my students at the University of Arizona it's a master's degree of deaf education program, most of the students that take that master's degree program are teaching. But it's not been an easy time, and so I just wanted to applaud everybody, teachers, special related services, personnel, everybody that's involved with education today. It's definitely challenging. And I wanted to share with you this kind of funny picture, but I wish I could remember who sent it to me, but here are a couple of teachers, maybe they're audiologists, I can't even remember that, trying to figure out how they're going to do the pass around mic situation in a classroom to maintain social distancing with their students, but yet be able to get access through the remote mic systems for the students who need them, or even if it's a classroom audio distribution system.

So just a little humor to get started, but also acknowledgement of the challenges that we face. Auditory access is complicated. Is it starting with audition? First of all, is the signal audible? And we're talking about more than just the ear, it's more than audibility, the information has to then be processed by the brain, so it's that entire system. So audibility definitely does not necessarily guarantee that it's accessible, and vice versa, and we wanna make sure that all information is audible, all the other students in the classroom, media, etc. So these variables, the listening ability of the students, their ability to attend and focus, the language level, is it commensurate with the instructional level of the instruction that the teacher is using?

Is the student's language level commensurate with the level of instruction? What's the motivation? Is the students interested in the topic? And if they're not very motivated, that does impact how well they're going to listen. The content and the vocabulary, is it familiar, is it new information, and then going back to, has the teacher made it an interesting topic for them. But learning new vocabulary and new content is much more challenging than listening to content that you are familiar with. Then, of course, the visual supports and other ways that teachers make listening fun in the classroom. All of those factors, and I'm sure there's many more that you can think of, that relate to comprehension. And so it's not just audibility, auditory access includes comprehension, understanding, and all of those steps that are part of that process.

Auditory access means that under ADA, that students with disabilities receive communication that is as effective as communication with others. So we're dealing with a couple of different definitions. And let me just make a note, those little numbers that you see after ADA and IDEA, those are associated with the references on the last slide. So ADA actually is a much more concrete definition and it requires a higher standard than IDEA does. And I think it's important to keep in mind how we're able to provide accessibility, that is as effective as the communication would be for every student in the classroom. Under IDEA, we're simply required to provide a free and

appropriate public education. If we look at how we achieve this under ADA, we'll provide provisions in a 504 Plan that states what the services are that the student needs, what the accommodations are that the students need, to hopefully have communication that's effective as it is for all students.

Within IDEA, we spell out the special education and related services, the modifications and accommodations, and how we measure progress through the IEP. But I think it's important to remember that we consider auditory access in both IEPs and 504 Plans, and again, strive for that standard under ADA, that students have effective communication that's measured by how well their peers, have access to communication in the classroom. So while it's always complicated, there's so many considerations to get full access that has to be our goal. I always like to use the Swiss Cheese analogy, in that most of our kids who are deaf or hard of hearing or have other special listing needs, get fragments of what the instruction is or what the communication is.

And so it's their ability to fill in those gaps is really based on their content knowledge and background knowledge of the subject and their familiarity with vocabulary. And it's also affected by their attention, their ability to focus, their motivation, all those other things that we talked about. But we want children to have full access, and we wanna minimize these gaps, so that they have the same opportunities to learn and achieve as their peers. When we look at remote instruction, there's just series of things that generally impact instruction. And I'm gonna run through these for you because I think it's important to remember what these different variables were when we looked at how complicated home remote instruction was.

So certainly the home learning environment, we needed to consider whether or not the students had a place at home where they could have a desk, have good lighting, be able to work without the TV going in the background and siblings running around

playing, so that you know, it was not necessarily like a classroom, but at least classroom-like, in what a home situation could provide. In terms of home supports, were their parents, caregivers, somebody present to help them create that learning environment to make sure that they were ready to learn when the learning environment started, including making sure their hearing aids were on, the batteries were working, if they were using remote mic systems, those were also attached.

For access to instruction, was there a stable internet connection? Did they have full access? Was it a heavily auditory based instructional environment? So listening fatigue became a concern as well as visual fatigue, watching a computer screen for repeated numbers of hours. The teaching environment, our teachers were teaching from home as well, and so did they have an environment that was conducive to teaching students that again, limited visual distractions, auditory distractions, things that allow children to truly focus. And I think also our teachers had children that they had to instruct and support in the home. So we were demanding a lot from our teachers, and we know that the success of the online learning from the instructional standpoint certainly had a lot of variation, depending on the organization and the structure and just the teaching environment and learning environment of the students.

The support from teachers of the deaf, audiologist, other specialists was also key. I worked with a number of teachers of the deaf who were contracted by school districts. And because they were contract employees, they were not in the email system and didn't have access to Google classroom or other platforms that the school districts were using. So they were basically outside of that instructional environment from the general education teacher, and that created a lot of work to make sure we could get those teachers back into the school district system to be part of the classroom. The instructional content was a variable in terms of how well the teacher was able to modify what was traditionally taught in a live setting, to adapt it to the individual learning needs of the students in the classroom.

Some examples where teachers just recorded lectures and put them up, or they would find videos for students to watch, other teachers really got into designing learning activities that were helpful and fun for teachers or for students to access and participate in. And then lastly, considerations for social isolation, and I'll talk about that a bit more specifically for deaf and hard of hearing students. But we know that the social isolation by not being able to go to school and being with peers was another significant factor. When we look specifically for our deaf and hard of hearing students, obviously, accessibility was a big factor in whether or not the closed captioning system worked, were videos captioned that the teachers were using, that X level of accessibility was a significant variable.

We've talked about auditory access and audibility, visual access and lighting, again, how well they were able to see their teacher in their instructional online setting. One of the advantages to visual access in the online setting is the teacher didn't have to mask, and so they really could have full view of the instructors face, and that was actually an asset that is kind of a balanced when we go back to the classroom setting and teachers have to mask. And then another consideration was the literacy levels, some of the online learning really increased the reliability on reading ability because of the written materials. And so our students whose English was their second language, and certainly those who use ASL, really required more than perhaps just in the general classroom, the addition of ASL interpreters to help make those modifications for them with the language level, and to bridge the written material to something that's more accessible for the students.

Then as I mentioned before, just readiness to learn, who's at home, or is the student motivated themselves enough to make sure that their hearing aids are on, or cochlear implants, and they are set up and ready to learn, that their learning space has limited distractions, they're attending and motivated, and their listening efforts and fatigue is

taken into consideration. With remote mic access, there were some challenges. Again, how did we get into schools to get the equipment? How did we convince administrators our students needed the remote mic systems? How do we get them distributed to students? All of those complications had to be addressed early on to make sure students who needed the remote mic systems had them available.

So some of the analysis included what was the home environment like? Did they have a nice quiet location where they could do instruction, or was there a lot of background noise and distractions there? And what kind of technology was available? Did the student have computers? Did they have good internet access? How well was the technology? Were the remote mic systems able to be managed by parents in their home? And certainly students who were using our classroom audio distribution systems, those kids who relied on that level of access, did not have access to those when we moved to home environment. So again, ongoing use, you know, as fatigue set in and classroom, online learning lost its novelty, there was a, you know, need for increased motivation of students to use their systems.

We had to convince the general education teacher that they needed to support use of the remote mic systems for the students in the home. And then obviously, there had to be support and instruction to the parents so they knew how to operate the system and make sure they were connected properly to the computers. And then always the internet bandwidth and signal integrity in the home, had a great impact on the consistency of the signal, or that it was being sent. When looking at connectivity options to improve audibility in the home setting, the recommendation was to connect the remote mic transmitter to the computer, and then it would deliver the signal to the students receivers generally in their hearing aids or cochlear implants.

And so by doing that, we could work around some of the background noise issues, as well as many reported a much clearer signal when they were able to go through the

remote mic system rather than through the speakers on their computer. If they had Bluetooth systems, then those could connect to their computer or tablet. The other interesting part was for parents who were with their students, once they were connected through the remote mic system, they could not hear the instruction of the teacher, and so we could modify those remote mic system to give them input by using a splitter so that the remote mic goes into one end, and the headphones for the parents goes into the other end.

And so that was a modification that allowed parents then to listen and have access to the instruction, again, to help support their students. Some other remote learning issues that came up, one was communication access outside of school, especially for our students who were at schools for the deaf, or in specialized classrooms that brought a number of students together. That was their main communication access in the day, particularly those who used ASL and their parents were not fluent in ASL. So for those ASL students, they were really cut off from communication outside of school, and then outside of their remote learning time. And as a result, socializations were reduced. They didn't have that time to just be with their peers, have the social discussions that were so important to their language development, the relationship development, those important things that are critical to overall development.

Many of our parents became teachers aides, and then many grandparents became teachers aides. I know so many grandparents who ended up being the teacher aide for a certain day of the week, or during certain learning activities to give parents a break. But their role really changed, now, there were some benefits to that. But if it was parents who were working or even working from home, just juggling the scheduling and being able to support their kids, always was a challenge. What we found in meeting with teachers and parents is that the mainstream students seemed more vulnerable than those that had been in specialized classrooms. And in part, it's because the deaf education teacher wasn't as strong a component in their daily instruction.

Maybe the itinerant teacher came once a week, maybe even once every couple of weeks. So they didn't have that relationship with the itinerant teacher, that was as strong as perhaps the teacher of the deaf in a more specialized classroom or school for the deaf. So that relationship was really key to keeping students engaged. And again, with our mainstream students, if they had a strong connection to their general education teacher or somebody else who showed up daily, that really helped with motivation. And as a result, we found out that many students, we all know fell through the cracks. These students had minimal attendance, there was little sustained learning and interest was lost after a few months. Teachers also expressed concern about abuse in the home, because children were in the home longer, and they were in the home under sometimes difficult situations where there's a lot of stress, and just other problems that may occur in the home, when students are away from the day, they're not around there for so many hours.

So I've not looked specifically at the data, but that certainly was a concern from teachers. Teachers of the deaf did do some interesting things to bring students back together, and I think the teachers of the deaf who had special classrooms, or involved on a more regular basis with their students had more autonomy, excuse me, more autonomy in making these decisions, and pulling students together. So some of these teachers talked about how they were able to get students from different schools to come on to the same online platform for a segment of each day, so that they could have some social time. It was structured, but at least be able to get together, and maybe they did a reading lesson, or a math lesson.

But just allowing students to come together so that they weren't just one on one with their teacher, the deaf, but they were able to participate in some group learning activities. Some teachers also invited deaf adults to join those classroom discussions, so that they could have good language models and have different individuals to speak

with and to learn from through that online portal. Some teachers were able to create Deaf, Hard of Hearing clubs for their students as an extracurricular activity. And again, through that they were able to bring students together outside of the school, but just provided another opportunity for the kids to join up. I think another really smart thing that schools did was they provided meals for students.

And at that pickup time, if you're ever able to be at school, when families were coming to pick up meals with their kids, it was such an important contact time for our student to see their teacher and just check in, and everybody to look at the welfare of each other in a time when we were so isolated in our home environments. So it was just, not just the meals that were provided to families who needed them, but it was just that moment of social contact that was reinforcing to say, yes, we're all in this together, we can do this, we can keep going. There were some silver linings. Again, the teachers of the deaf who had the ability to either have a classroom, or who saw students on a more consistent basis, that maybe a daily basis, reported that they did have increased instructional time, because they were driving between schools.

And if they were able to get that time within the general education classroom, they could actually be provide more intensive instruction, or they could do more one on one instruction, if that was appropriate or bring students together. And in that way, the depth of classrooms were able to retain many of the same learning activities that they would have done in the classroom together, but again, moving them to this online environment. We heard from both teachers of the deaf and parents that they felt they had much more structure in the IEP meetings. There was better turn taking, and they felt like they were more equal partners, and could participate on a more equal basis throughout the IEP meeting.

So again, something that allowing remote participation with it comes some protocols about how we communicate, and are able to express ourselves, and perhaps just being

a single one parent around a table of maybe eight other professionals, when you move that to online and just see pictures of everybody, somehow that felt less intimidating to some of the parents. And then I think just overall, the benefits to the parents included, learning more about the content their students were learning, getting a better handle on how important communication access was, and making sure communication needs were being met, understanding the benefit and increase use of remote mic systems. They had them in the home now if they were able to get them from the school and could use them in other situations besides just the online instruction, and then I think just overall, getting a greater, parents got a greater appreciation for the work of our teachers that they have to do on an everyday basis and how they individually adapt for individual needs of students.

So some other issues as we move now into classroom instruction, so that was kind of the remote instruction, we've now pretty much moved back to classroom instruction, but we're still obviously dealing with COVID. So in the picture, my friend and colleague, Carrie Spangler took pictures of different mask and shield examples to just demonstrate visual accessibility. And unfortunately shields are not recommended any longer, so we're not seeing those used unless they're used over a facial mask. So the reduction in high frequency speech sounds varied in a study that was done from three to four dB with a mask, masks that were cloth, all the way up to 12 dB now with the N95 masks. So the N95 masks that are being required now actually result in a very significant reduction in the sound level of speech.

So it's gotten more complicated, and you know, I think all of these situations together just are increasing the nightmare we have as audiologists to try and figure out ways to overcome all of this. The social distancing is a continued issue. I know lots of classrooms, you see a child at a desk, and they have a whole plexiglass barrier around them. That also results in some noise reduction. If they're further distancing, obviously, we know that just as distance increases, the loudness decreases. And the newest

culprit is these classroom noise, or classroom air circulation systems that are being installed. In my teaching this fall with my students at the University of Arizona, one of the things they have to do is classroom noise measurements.

And several of the students were able to measure their classrooms with air circulation system off and then on, and found up to a 20 dB increase in noise level when that air circulation system is on when you're in close proximity to it. So depending on how that system is installed, and the quality of the system, it has become a new challenge for us in trying to mitigate noise in classrooms as well as increase access for our students. So I think you know, it just points out that remote mic systems are needed more than ever now for our students, whether it's a personal system or classroom system. So again, accommodations, highly recommend remote mic systems, whether they're personal or classroom.

We wanna make sure that the lighting is good, we wanna make sure that seating placements are such that they're not near any kind of noise source, and then any other noise reduction strategies that can be employed. The old tennis balls on chair legs, if it's a linoleum floor, acoustic panels in pertinent places in the classroom, anything that we can do to bring down the noise level will be helpful. I did a brief short video directed to primarily school administrators through [this link](#), the link is here on the screen, if anyone is interested. And it's again, obviously, it's [this link](#), so they're advertising Roger SoundField systems, but it really focuses on the need and benefits of using a SoundField system in classrooms where we're trying to make sure that all students have better access to information that's being provided by individual students, or through instruction, whatever the activity is going on.

So if you're interested in a little PR thing to play with administrators, you could have access to that short video. I think one other thing I forgot to not mention here is that there are funds available with the COVID funding that can be spent on equipment.

Most of the COVID funding is on short term remedies based on COVID, and remote mic systems is a great place to employ spending money. So it's a good time to either renew your equipment with updating it, or purchase more classroom systems, whatever it is that is needed in your particular school system. Well, this is going much faster than I thought, so I hope there's lots of questions. I wanted to kind of close out by sharing with you the SETT Framework.

And every now and then we have to provide evidence and justification for recommending hearing assistive technology and this is a great little tool to do that. I think the other point that I wanna make is when we do recommend and implement use of any kind of remote mic technology or really any technology, the training for the teacher is absolutely essential. And many of you may have heard me said, that something I repeat all the time is that our recommendations are only as good as how well they get implemented. And our job, in addition to recommending equipment is to make sure that the teacher understands how to use it, is comfortable using it, and is able to use it time and time again.

And I know what happens is sometimes when it's novel, and it's new, it gets used, and then one day, it's forgotten, and pretty soon it's forgotten for a week, and then pretty soon it's back on the shelf. So one of our roles, whether we're SLPs, audiologists, teachers of the deaf, is to continually check in with our teachers to make sure that they're using the equipment that they're not having any problems with it. And the more we check in, the more they recognize, yeah, it's really important that I continue to use this. This is an important accommodation for all students or certain students in my classroom. So I can't emphasize enough how important that support to teachers is if we really want good implementation of any technology that we're recommending.

So the SETT Framework, first we consider the student. And with the student, we want to describe their hearing status, and what their auditory access needs are. So we may

talk about, you know, the level of hearing loss that they have, maybe they have without hearing aids, if they don't use them, maybe they have access to about 45% of speech sounds in the classroom, if we're thinking about the confidant audiogram, for example, maybe they have some attention issues that further contribute to their ability to stay focused. So all of that would go into the description of the student. Next, we want to describe the learning environment. And here it's important to not just describe a classroom because they may be in multiple classrooms.

So we may pick to describe some that have the highest content and discussion discourse level as the ones where that auditory access is most critical. So it's not only the background noise that comes into play, but it's making sure we have good lighting, and then looking at the teachers instructional style. Do they primarily present from the front of the room, or are they moving around a lot? Are student desks located in pods, so that they're facing one another? And is multiple learning activities going on at the same time, which actually kind of gets into tasks. But describe the learning environment and describe noise levels, if you've been able to do classroom noise level measurements describe the reverberation time, think about critical distance and where that point is in that listening bubble design of how close that teacher needs to be to the student if they're gonna have consistent auditory access.

Next, we would describe the learning tasks, what kind of activities are going on in the classroom that require they have good auditory access? You know, if it's a speech language therapy session or some other therapy session, and you're in a small room, one on one, that may be the least necessary time to use a remote mic system. But on the other hand, if they're in small groups, even if it's a smaller classroom, but if you put a student in a classroom with even five other students, they're going to still have difficulty hearing and tracking what the other five students are saying, even if that's just a small group activity. Are their table discussions where we wanna use the table mic, or

is it larger group discussions, where mostly the teachers might do more using the pass round mic system?

And then lastly, would be the tools to use. Are we just looking remote mic system, and what kind, is it a CAD system, or is it a personal remote mic system, or do we wanna also consider captioning and making sure that the media and or what the teacher is saying is also captioned, or maybe the tool has a sign language interpreter. So once we look at the tool that might be considered, then we would wanna go a little bit further and do some assessment to determine which tool is going to be most effective for a particular student. And when we look at those tools we need to consider what works for the students as well as what we think the student needs.

And so the student is also involved in making those decisions about what kind of technology they feel most comfortable with, and are willing to use. So I encourage you to look at this, you can learn more about it in the article that was written in seminars, in hearing. I go into a bit much more in depth that there's actually an example there of a particular student, and what was written out for each part of the SETT Framework. And also, if you go to the reference, to [this](#), it has more information about the SETT Framework. And a lot of this too is under that concept of Universal Design for Learning. And so within Universal Design for Learning, we wanna look at technology access.

So to close, just a few things. One, persistence, I think, is a characteristic that we want to always have, so that we don't give up when audibility and auditory access is challenging, but we continue to work with the teacher, the school and the students, until we come up with a reasonable solution, and at the same time, be flexible in what our decisions are. We may not get the very best audibility for a student that we would recommend, but it may be the one that the student is most willing to use and what works best in the classroom, and it may be this first step in getting students to, for instance, go from a CAD system to a personal remote mic system.

And I think, you know, we talked about having grace now, that we just all need to sit back, take it easy, and just be calm about the work that is in front of us and how we're dealing with all of the challenges that are in schools. At the same time, we have to continue to strive for full access for deaf and hard of hearing children. And if we don't, in many ways, we're just setting them up to fail, especially children in younger grade levels, lower grade levels, who don't have the background knowledge, the language level to fill in what they're not getting. As students get older and have a better fund of knowledge, they may be able to better fill in.

But too many times we see students who are deaf or hard of hearing, either late to the conversation because they need extra time to process or they've missed a few words, and they've misconstrued what the question was, and they inappropriately answer, you know, those are self advocacy things that impact their ability to take that same risk again. And so again, everything we can do to make sure our students have full access, using the laws that are before us in order to achieve that. And thank you, teachers, special support personnel, everybody who is in the classroom. I just get so disheartened when I hear the numbers of teachers that are leaving public education because of how difficult it is.

And I hope that that turns around and schools learn that they've got to pay people more and provide more supports to keep teachers supported, so that we have good instruction for our students in school. And the last slide has the references for you. So with that, we have lots of time for questions, so I hope we have some. And Christy, do you want me to go to the Q&A, or will you say them for me and then I'll respond?

- [Christy] Yeah, absolutely Dr. DeConde Johnson, I can absolutely moderate for you. We do have a question here. We have a question that asked, which situation would benefit most from remote mic technology.

- And I not sure if you're talking about online situation, but since we've pretty much shifted to the classroom let me talk about classroom first. I think any students that has some hearing loss particularly, but we know there's a lot of children with auditory processing disorders, we're learning children with autism, many students have special listening needs. So anytime we can provide evidence that shows they're not getting full or nearly full auditory access, to me is the need to provide support through remote mic systems. Now, remote mic systems have to be used appropriately, and fortunately, the systems that are most common in the schools do have flexible technology. So we have pass around mics, we have tabletop mics, we have many different arrangements that we can put in place for students to use depending on what that learning activity is.

Most of you know I'm a proponent, obviously, of the Functional Listing Evaluation, and something like that gives me evidence of what happens to student's ability to understand or access instruction or verbal information in the classroom when we add in distance, and noise, and lack of visual access. And so if children have the ability, even in the sound booth, with no background noise, best case scenario, they can get 90% speech discrimination or better. To me, that becomes the target of what we want to achieve in the classroom. So through our functional evaluations, if we see that they're not able to get 90 to 100% understanding of what's being spoken, then we need to close that gap. Another tool that I really like is the classroom participation questionnaire, and I think my website was on the first slide, and you can go to my website and download these tools.

That tool is particularly important because the students self assesses their access to the classroom teacher in instruction as well as their access to peers, and how they feel about that. So then again, there's evidence that shows that the students struggling with understanding what their peers are saying during classroom instruction, or what their teacher's saying. And not only is that an opportunity to provide an opportunity for

a remote mic system, but certainly to have a discussion with the student about why they're having that challenge, and what could they do to remedy that problem and certainly one of the remedies would be remote mic. So I want kids to have full access. And if we can provide evidence that they're not getting that and then move to recommend a remote mic system, I think we need to go down that path.

However, I also believe we have to make that decision in conjunction with the student. I am guilty over the years of writing, you know, we'll have an FM system on the IEP without ever considering how the student feels about using a remote mic system. And so if we want to really have the students buy in and use it, then they need to be part of the decision. And they need to learn how it works, the benefit it provides, in situations when it doesn't work, same thing with hearing aids. You know, there are situations where they work well and get into a really noisy environment, and sometimes they don't work as well. So I think it's really important that our students are informed and are able to have a say in the decisions that are being made.

- [Christy] Thank you, Dr. Johnson. And we did list your website there in the chat box for those who want to have access to those resources. We have another question here. Jane asked, "Were any of your teachers able to visit the homes during remote learning to set up an excellent situation or improve the listening environment for the students?"

- None that I am aware of. Even in the early intervention, part C services, the systems that they worked for, whether it was you know, whatever agency, the health department, whatever, did not permit home visits. I do know that sometimes they would meet up somewhere, a park, be outside, so that they could have some connection using social distancing, but none of the teachers that I interviewed, my students who are in the master's degree program, I never was aware of them actually being able to go in the home. I do know they provided a lot of direction to parents remotely about what was necessary, and we have lots of resources that were available

that were kind of handouts that went home to help parents set up a remote learning environment, and schools, you know, did a lot of work around that.

- [Christy] And Kate asked, "For a student who doesn't really want to wear the remote mic, what might be the best way to balance or strive for full access with a middle school or high school student who really doesn't wanna use the remote mic?"

- Those are challenging students, yes. And, you know, we could look at a classroom system. One of the challenges with middle school age students is that they're in multiple classrooms, and so you would need to have a setup at least in the critical classrooms for language, arts, history, where there's a lot of discourse going on, less opportunity for one on one and small group work. So it's a bit of a negotiation with the student, getting them first to recognize how much they're missing. Sometimes our students don't have any idea how much they're missing in their instruction until they suddenly have full access. I know that from my own experience with my own daughter, who never had an interpreter, but had access in school, but it wasn't until she got to college and actually had a sign language interpreter that she realized how much information she had missed in her schooling.

She was able to do well anyway, because she had the language ability to fill in gaps, and was certainly willing to ask, but, you know, sometimes our students just don't realize how much they're actually missing in instructional settings. And I think this is also where captioning is important because captioning will provide a transcript that students can either review as it's being captioned, if they're willing to have it on their own device on their desks. But really, so many students benefit from captioning that I'm a proponent of whole class captioning. So if the teacher is giving a lecture, there's no reason why we can't have that captioned and up on our screen for students to see. And I think once that becomes more common practice and realize that it's not just because it's me, the person who doesn't wanna be singled out, and all students start

benefiting from it, that student realizes that, oh, I'm not so different, everybody benefits from having the captioning. So that would be another accommodation that could be explored.

- [Christy] Thank you, Dr. Johnson. You have another general question here. Brett asks, "If a student has hearing loss, but no hearing aid, and it is believed that they would benefit from amplification? Are the schools required to purchase hearing aids for that student?"

- That is a bit of a complicated question. So the answer is, if the school identifies the hearing aids as assistive technology, the answer is yes, but that means the school owns the hearing aids, and unless there's provisions for the assistive technology to be used in the home, they would stay at school. And if the student moves, the hearing aids would not move with the students unless there are special provisions made. So if you call the hearing aids, a hearing assistive technology, yes, then the school can provide them.

- [Christy] Thank you, Dr. Johnson. We actually have a question here from Dr. , who is to be the one who set up this series, and she just wanted to let you know that was a great overview of so many issues, and there have been challenges during this pandemic. And some students who had technology that had wireless connectivity to their laptop or table would use that rather than connect the teacher mic. Have you heard of a way for a parent to also hear the teacher when the student is wirelessly connected to that computer?

- No, I'm trying to think offhand and you would probably have an answer for that too. Without the parent having an additional receiver, I'm not sure what that accommodation might be. Anybody have a suggestion?

- [Christy] I think Dr. mentioned that you could possibly turn on the captions and then the parent might be able to hear?

- Or at least see?

- [Christy] Correct, yeah.

- See the captions, that's a great strategy, and hopefully the captions are on anyway. I didn't address captioning as much as I should have in this presentation, but, certainly, in remote learning, captioning is important. Now, we run into the issue of the quality of the captioning, and there are certainly a lot of improvements, whether you're using streamer or, you know, the online capturing that comes with Zoom. But really under ADA, to be technically in line with the law, the school would have to provide a live captioner. Now, that's an added expense, and I think that many schools hesitated to do that, and just went ahead and relied on online captioning you know, that was automated voice-to-text kind of captioning.

But, you know, again, it's all dependent on the accuracy. If you've got a teacher who's miked in their delivery at their site, they will have a clear signal coming through the computer, rather than a teacher, you know, I've seen in a classroom setting and teacher delivering instruction, because they want all the materials, so they were able to get into their classroom to do their remote instruction, but then they wouldn't be away from the microphone computer, the microphone on their computer, so their voice was not as clear and it was softer. So they really needed to be miked in order to get a good signal to the computer itself. So there's a lot of things that impact the quality of the transcription.

So I think, you know, the key is, if the quality is good, we need to include it, and if the quality is not good and the student really needs transcription, then we may have to go to a live transcriber, captioner. And again, that is a remote service.

- [Christy] Thank you. And I think that actually answers the next question. The next question was from Elizabeth. And she just asked, "Which of the captioning systems for a person in a classroom would you recommend?" And I think you answered that with live caption.

- That would be best, but there are a number of, you know, I can't keep up with all the apps. So it's individual preference, and if you all know Tina Childress, she keeps up on all of the apps. She's got on her website, a list of different apps that provide live transcribing, but it's again speech-to-text, it's not transcribed through a live transcriber, but it's happening live as the person is speaking. And so I think that's a personal choice for most deaf adults in terms of what they use. So again, that's something to explore with the student and come up with a captioning app that seems to be best for them.

- [Christy] And this question circles back to how a parent might be able to listen in and Tricia recommended, maybe a splitter with headphones, and a Bluetooth speaker would possibly work in that situation.

- Right, and the splitter, I showed on one of the slides as an option that you could put, you know, if you're using the computer, you can plug the splitter in and then you have the headphones, but you could plug in a speaker in addition to then the transmitter for the student. Lots of technology to experiment with.

- [Christy] And we have another question here. Where do you suggest starting to look for funds available as a result of COVID? You mentioned, there were some available for technology upgrades.

- I have a handout that I did not include with this presentation that I can provide. I don't know if there's a way of getting it or if somebody interested, just email me, and I'll email you a handout that talks about how COVID funds can be used for remote mic systems. But schools and states are getting a lot of COVID money that's trickling down to schools slowly, and schools are making decisions about how to use that money. And I think access is clearly a great place to put that money, and a great opportunity to look at any kind of remote mic system for classrooms. Particularly if you can help them understand the difficulties that masks creates, social distancing creates, plexiglass barriers around desks create, air ventilation systems creates, it is challenging, and we've got to figure out workarounds.

So I think a lot of it is just taking time to educate the administrators and the people in our school systems that are making the decisions about how to use that money. And I think there's, I know that there are many school districts who have been able to upgrade their systems, and purchase more systems as a result of that funding.

- [Christy] And we can absolutely include that handout, Dr. Johnson, for the members in the recording as well, so they'll be able to see that along with the slide. And that is gonna conclude our course. I'm gonna hand it back over to you for any closing statements, Dr. DeConde Johnson.

- I guess we're all in this together. So we're all challenged, and I just commend anybody working in the schools to, again, keep calm, make sure our kids are progressing, and in every way make sure that we're providing our very best resources towards making sure learning is accessible for our deaf and hard of hearing students.

So thank you for coming today, and I will get that handout off to you Christy, and I'll let you decide how to distribute that.