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Facing Masks:
Teaching Deaf and Hard of Hearing Students During a Pandemic

By Lauren Trainor

Sometimes transformation is forced upon us, and how we meet it depends on us. The COVID-19 pandemic—with its mask mandate—brought unique challenges to educators of deaf and hard of hearing students.

The onset of the pandemic and the resulting mandate that everyone wear a mask affected communication and the accessibility of human speech. According to an article in *Audiology Today* (Atcherson et al., 2020), up to 20dB of the human voice can be lost due to wearing a clear face mask and even more if a shield is worn in addition to a mask. As masks also hide the mouth and often much of the face, visual cues to the speaker's words are severely limited, too. This can be devastating for individuals who are deaf or hard of hearing.

No longer could those of us who relied on residual hearing and access to speech cues understand the masked majority. The masked environment changed the way we view accessibility for ourselves and for our students. As a lifelong user of hearing aids and facial cues to understand speech and social interactions, I have faced the nightmare personally.

One of the first frustrating incidents occurred in the early spring of 2020. I was waiting in line at the grocery store when an older woman began talking to me. I was trying to maintain a distance of six feet, and I told her that I was hard of hearing and did not understand her. She continued to speak, and I continued to not understand. I reminded her that I could not hear, turning my head and pointing to my hearing aids, but she kept talking. I grew even more uncomfortable. I was not sure if she was smiling, laughing, or scowling, and I had absolutely no idea what she was saying. Exasperated, I began to sign to her, and when she saw my hands in the air, she suddenly stopped talking. The entire experience left me feeling defeated and unsure of how to proceed. I wondered: *If I am struggling this much with casual conversation, how much will I struggle at meetings and doctor's appointments?*

The answer was—and is—that I struggle a lot. While masking has now become a choice in many areas of the United States, COVID-19 variations continue to spread and many people continue to mask. I struggle to understand people in the grocery stores,

Photos courtesy of Lauren Trainor

banks, offices, and school hallways. I also struggle to understand my deaf and hard of hearing students, both virtually and in the classroom—and I know they struggle to understand me.

With the required mask mandate of many school districts, the frustration of being able to understand others was amplified overnight. Not only would students have to struggle to follow lectures in the classroom, but they would have to struggle to follow simple conversations. As the pandemic continues and as masking does as well in many schools, our students, a most vulnerable population, continue to endure an additional hurdle as they scramble to understand teachers and peers. The question we, as teachers, must address is: *How can we provide support to our deaf and hard of hearing students so that they continue to learn, especially those who rely primarily on audition?*

Technology in the Classroom

My school district has come up with a variety of new approaches to combat the inaccessibility of sound and lack of access to visual cues for students who are deaf or hard of hearing. These include:
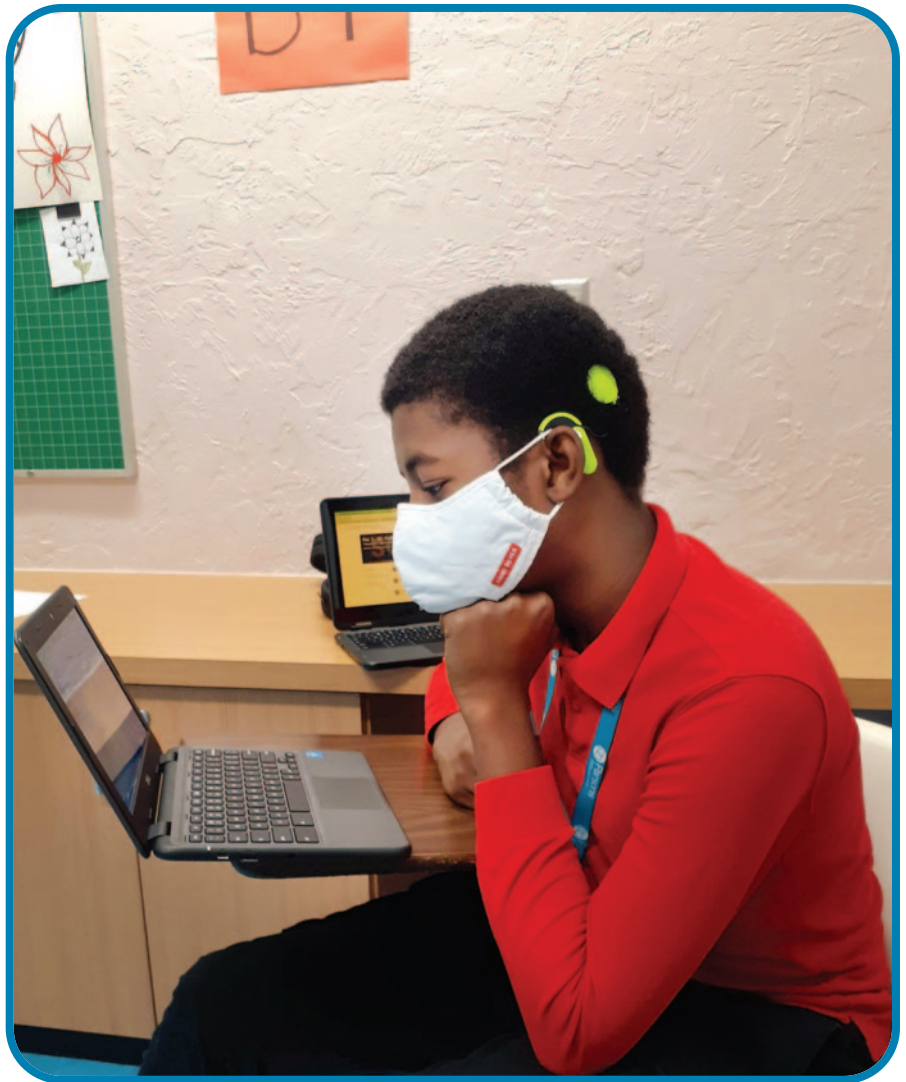
- **Face shields** for teachers to use with students who need access to their teacher's face

- **Bluetooth to the max**—microphones to be used with automated captioning that allow better voice detection and Bluetooth capacity for hearing assistive technology and cochlear implants as well as phones, computers, and tablets

- **Captioning apps**, such as Ava and Otter, that can be downloaded to students' phones

- **Electronic devices**, such as iPads, notebooks, and laptops, to aid in understanding spoken language (especially with masked peers)

- **Automated captions** in addition to assistive hearing technology and visual cues for live and recorded instruction
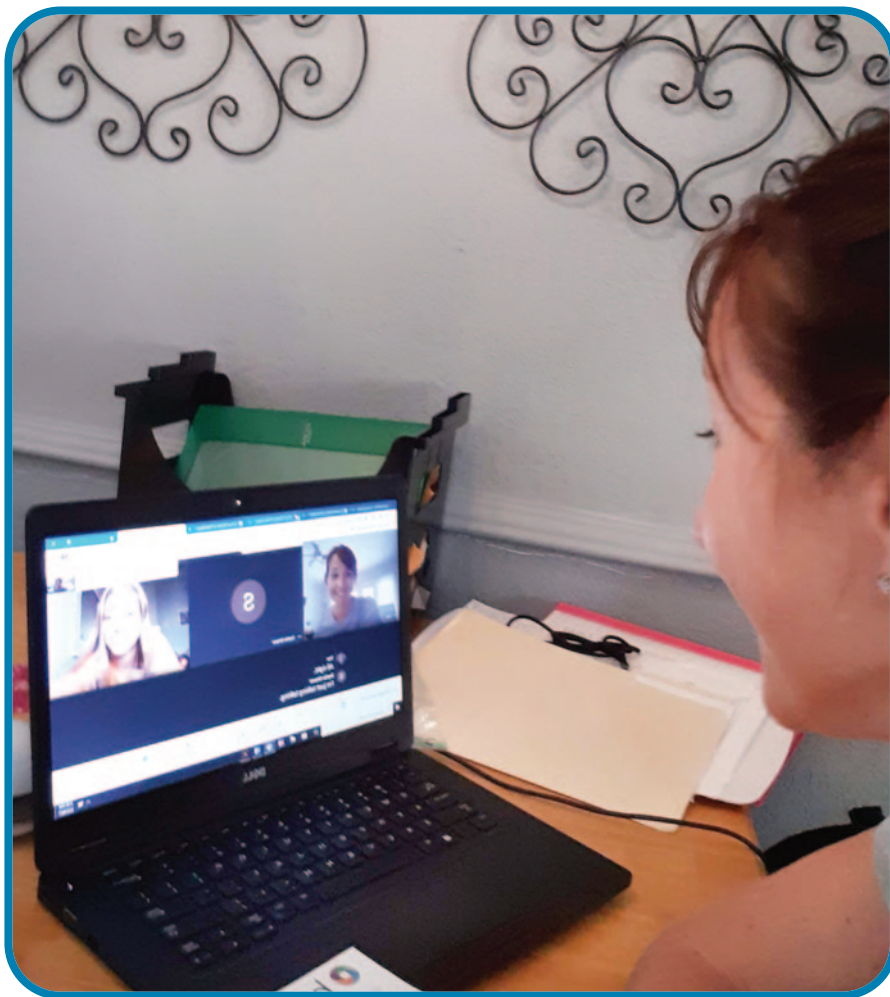
While as a teacher I promote each of these options, I always note an important caution. Though technology can make information more accessible, it is a poor substitute for

Above: Electronic devices, such as iPads, notebooks, and laptops, aid in understanding spoken language, especially with masked peers.

communicating face to face with mask-free faces. I tell my students to be aware that they might miss something and to always look out for inaccurate or incomplete information.

Fortunately, with the rise of automated captioning, I find that the captioning devices, while not as accurate as a well-trained interpreter or real-time captionist, are more accurate than ever.

Nevertheless, the National Deaf Center (NDC), in its position statement, has said that automated captions are not equitable for deaf and hard of hearing students. One of the reasons the NDC cites this is their inaccuracy. Most of my students refer to captions when they don't hear words or don't understand their meanings. The scenarios that lead to or impede understanding can and do change drastically for these students. One moment, they sit in a quiet classroom with a native speaker and the automated captions provide equity of access to the individual's speech. The next moment, the same students find themselves in a noisier classroom with a non-native speaker of English and the automated captions actually create a hurdle to understanding. The environment, the needs and understanding of the students, and how they access sound are variables that determine equity.

Aid to Understanding the Functional Listening Evaluation

A well-executed Functional Listening Evaluation (FLE) can help teachers know what strategies will be most effective in helping their students understand as much as possible in various learning environments. The FLE can determine the most effective use of technology as well as identify which environmental factors influence the students' ability to understand information from the speaker or, in some cases, the signer. Variables such as lighting, access to the speaker's face, hearing assistive technology, and distance have all traditionally impacted the ability of students who are deaf or hard of hearing to understand spoken language. The beauty of the FLE is that the assessor may give it and target specific scenarios that are perceived to be impacting the student and recreate these scenarios while taking data.

In addition, the FLE can shed light on the effect of types of masks or face shields on student understanding. It can also inform the use of captioning and Bluetooth technology. The results can be surprising. For example, my student who is hard of hearing and uses behind-the-ear hearing aids was given the FLE to determine if automated captions during online instruction were aiding in her comprehension. Much to my surprise, we learned that the captioning was not helping her; instead, she preferred to keep the captions off as they lagged behind the action on the screen and proved to be a distraction. Another student who uses a cochlear implant with Bluetooth capabilities showed equally surprising results. The student was observed using the captions on two different devices to aid in his understanding. The FLE showed that Bluetooth on his computer or phone did not help him, but he experienced significant improvement in his understanding with the automated captions. For a third student, the FLE showed the use of captions was critical to understanding; for another student, the use of sound without captions was critical. Thus, the supports that benefit individual students vary—and the FLE can help us in determining which students have what needs.

Monitoring Understanding Critical to Observe

Students need to be taught to monitor their own understanding and provide feedback when something is not understood. This is a hard-won skill and, especially for younger students, effective teaching means not relying on student monitoring; we as teachers must monitor them ourselves. One way to do this is through observation. When teachers observe their students, they can determine if students are responding appropriately to teachers' or peers'

Helpful Links to Resources

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MASKS/SHIELDS:

- The Communicator™ (FDA-approved clear mask) *https://safenclear.com*

- Humanity Shield™, *https://rapidresponseppe.com*

CAPTIONED APPS:

- Ava, *www.ava.me*

- Live Transcribe, *www.googleplay.com*

- Web Captioner, *www.webcaptioner.com*

- Otter, *https://otter.ai*

MASKS AND SPEECH QUALITY:

- *Audiology Today,* www.audiology.org/audiology-today-novemberdecember-2020/more-speech-degradations-and-considerations-search-transparent

CAPTIONS:

- National Deaf Center, *www.nationaldeafcenter.org/news/auto-captions-and-deaf-students-why-automatic-speech-recognition-technology-not-answer-yet*

- National Association of the Deaf, *www.nad.org/resources/technology/captioning-for-access*

FUNCTIONAL LISTENING EVALUATION:

- Hands & Voices, *www.handsandvoices.org/pdf/func_eval.pdf*

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comments and questions; they can ensure students understand and are following directions.

Observations are also needed to ensure technology is doing what it is supposed to do, to ensure the automated captions are accurately reflecting the speech of a video or that the captions are keeping up with a live speaker. Teachers cannot depend on students identifying and reporting their problems with technology. Only through our own observations can we determine if the accommodations are appropriate and if changes are needed.

Mask Wearing Means Re-Evaluation of Teaching

With the advent of universal masking, a revisit to the Individualized Education Program (IEP) or 504 plan is required. Incorporating the FLE along with observations can help teachers gauge and monitor their students' understanding of day-to-day activities. Accents, background noise, and inaccurate captions can provide hurdles to accessibility and should be taken into consideration when determining student accommodations. It is important to note that needs for accommodations may

differ from situation to situation and from day to day. For example, students who typically do well in classes with minimal need for any accommodations may find themselves struggling to understand a speaker with an accent. Students who have been able to benefit from spoken face-to-face interactions may find that the introduction of masks makes it impossible to understand instruction without captions or a sign language interpreter. The IEP must be reviewed and updated as the changes in accessibility are observed.

The approach to accessing information for students who are deaf or hard of hearing has never been a one-size-fits-all affair, and the pandemic, with its mask-wearing mandate, complicated an already complex situation. As the learning environment shifts, teachers may need to change student accommodations, and sometimes these changes are counterintuitive. Teachers should talk with their students about what works, observe their students, and ensure the FLE is complete. Our students are dependent on us to help them as they face the challenges of universal mask wearing and successfully continue their education.

Reference

Atcherson, S. R., Finley, E. T., McDowell, B. R., & Watson, C. (2020, November/December). More speech degradations and considerations in the search for transparent face coverings during the COVID-19 pandemic. *Audiology Today.* Retrieved from *https://www.audiology.org/audiology-today-novemberdecember-2020/more-speech-degradations-and-considerations-search-transparent*