

Zoom Video-Conferencing: Accessibility Practices for People who are Deaf-Blind

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As web-conferencing becomes increasingly integrated into professional culture, companies are relying on virtual participation from staff. This poses a risk to the inclusion of professionals and clients with disabilities. It is vital that inclusion and accessibility remains an ongoing analysis for companies as environmental factors change. Muting, or altogether losing, the input of individuals with disabilities has a potential negative impact to the individual with a disability, the culture of the organization, and the organization's performance outcomes.

Individuals who have combined vision and hearing loss often utilize a combination of their senses to access a visual-auditory world, and often rely heavily on the sense of touch. Web-based conference platforms are primarily accessed visually and/or auditorily, therefore the deaf-blind community is at risk of exclusion due to existing barriers in these platforms. The term "deaf-blind" refers to a person who has any combination of vision and hearing loss; only a small percentage of people who are deaf-blind have no usable vision or hearing. Like all communities, the deaf-blind community is quite diverse and most people who are deaf-blind fall on a spectrum of some usable hearing and/or vision. Each person's experience is based on several factors including how much they see and hear, age of onset (when they became deaf, blind, or deaf-blind), educational and cultural background, and whether they have additional disabilities. When addressing accessibility, it is important to recognize the diversity of preferences, abilities, and communication styles among members of this population.

Facilitators of virtual meetings, conferences, and presentations can implement general considerations to ensure an inclusive meeting space for participants who are deaf-blind. This White Paper will provide a comprehensive list of deaf-blind accessibility considerations for professionals utilizing Zoom Video Communication. Zoom was chosen as a focus of this paper due to its widespread use during the COVID-19 pandemic. The guidelines presented in this White Paper are drawn from information and data collected by the Helen Keller National Center for Deaf-Blind Youths and Adults (HKNC) over the course of several months from the start of the pandemic. Information was gathered from both individuals who are deaf-blind and individuals who work closely with youth and adults who are deaf-blind. Sources of feedback include surveys of HKNC consumers and staff who participated in individual and group learning experiences via Zoom, discussions with HKNC Regional Representatives, feedback from professionals with expertise in access to technology for people who are deaf-blind, and input from a range of professionals outside of the organization.

Many of the considerations and resource tools identified here are specific to Zoom Conferencing, however many of the strategies can be implemented universally across web conferencing platforms. It is the responsibility of the Zoom host and meeting facilitator to work with the participant who is deaf-blind to identify which accessibility options are the best fit. By creating an inclusive environment for persons who are deaf-blind within daily operations, organizations will thrive from the perspective and talents of this diverse community of individuals.

In addition to ensuring accessibility during a meeting, it is important to start preparing for accessibility well in advance of the meeting, and to follow up with attendees to solicit feedback and ensure that all of the information conveyed during the meeting was understood.

The root to all successful accommodations is the understanding that no two people are the same, therefore there can be no “one size fits all” guidebook. The purpose of this document is to increase awareness about the considerations that a meeting host, facilitator, presenter and fellow participant can take to ensure inclusion - specifically for individuals who are deaf-blind.

HOST PRACTICES BEFORE THE MEETING

Distribute Materials Ahead of Time

Materials that will be used during a meeting such as PowerPoint presentations, reference documents and agendas should be distributed beforehand to allow participants time to review them. For individuals with low vision, scanning between the presentation materials, presenter and interpreter (if one is being used) can be a challenge. The opportunity to review materials ahead of time allows participants to maintain their focus on the speaker during the presentation.

If participants will be utilizing interpretation or captioning during the meeting, the host should share the same presentation materials with the interpreter/ captioner ahead of time that were shared with participants. This will help the interpreter/ captioner know the content that will be addressed. Additionally, it is the responsibility of the facilitator and/or presenter to connect with the interpreter and captioner about 15 minutes before the meeting to review:

- The purpose and goals of the meeting.
- Acronyms or jargon that will be used and their meaning.
- Names and/or sign names of the facilitator, presenter, etc.

Interpreters/captioners are often joining a conversation “cold” without any knowledge of the company’s purpose, structure, goals, etc. Giving information to the interpreters ahead of time will ensure that the interpretation is accurate and effective.

Solicit Accommodation Requests and Arrange Accommodations

To ensure maximum participation from participants, the host is responsible for sending out a request asking for participant preferred communication modes and accommodation needs. Bear in mind that some participants who have emerging advocacy skills may not know what accommodations might be available, so it can be helpful to provide a check list of accessibility options along with a fillable “other” option for those who know their specific preferences. Examples of accommodations that would need to be pre-arranged include:

- Interpretation - BOTH receptive and expressive (Visual American Sign Language/Signed Exact English, Tactile ASL, ProTactile ASL, one-on-one voicing over, Certified Deaf Interpreter), including variations in expressive and receptive modes of communication.
- Considerations During Interpretation – preferences in background or clothing color, location of interpreter on the screen.
- Real Time Captioning - including whether the participant is using assistive technology to access captions such as a braille display or enlargement software.
- Considerations for Real Time Captioning – preferences for the use of captioning within Zoom, an external window, or an external device.

- Other Communication Access - alternative method of accessing communication such as live transcription written in a google doc in a separate window, ongoing meeting notes sent via email or instant messenger in sections at a time, and other preferences based on experience.
- Specific Formats for Materials - accessible or alternative formats for PowerPoint presentations and other electronic documents.
- Other- always leave room for additional requests based on individual needs and experience.

Provide List of Shortcut Keys

Along with the request for accommodations, the host should include a list of shortcut keys for various Zoom features (such as “enable/disable mic”, “chat”, etc.). Participants using screen readers, braille displays and other types of assistive technology use shortcut keys to navigate the screen without the use of visual icons. By having the shortcut on hand, participants can efficiently interact with the platform, for example by pressing *Alt+A* to quickly mute/unmute audio. A list of [Keyboard Shortcut Keys](#) can be found on the Zoom Website.

FACILITATOR PRACTICES DURING THE MEETING

Successful inclusion of deaf-blind participants during a Zoom meeting depends on the behavior of both the facilitator and other participants. It is the facilitator’s responsibility to communicate expectations of behavior to participants and to follow through to ensure that all participants are respecting these expectations.

Co-Facilitators with Established Roles

It may prove helpful to have more than one facilitator in a Zoom meeting so that one facilitator can focus on the content and progress of the meeting while the other facilitator can focus on technical details and accessibility.

Set-Up for Interpreters and Captioners

It is important that participants who are utilizing interpreters and Captioners have a clear view of the interpretation/captioning. Because Zoom has multiple windows (chat box, participant videos, caption transcript, etc.) the facilitator needs to work with participants to ensure that the interpreter and/or captions are positioned so that they are not blocked from view by other feature windows. For deaf-blind participants, this may involve doing a test run ahead of time using the device(s) that the participant will be using during the meeting. Examples of facilitator practices that can help with this process include:

- Interpreter spotlighting and pinning - The facilitator should “spotlight” the video of the interpreter so that it remains in one location on the screen. Additionally, the facilitator can also alert participants to “pin” the interpreter or another person on their screen as needed.
- Pauses - The facilitator/speakers should pause regularly to allow interpreters, captioners, and participants who are using braille displays to catch up. Pauses should be between sentences not words. Unnatural pauses between words can actually slow down interpretation.
- Interpreter switches – The interpreter or the facilitator should indicate when the interpreters are switching, and then pause so the facilitator has time to spotlight (or participants have time to

pin) the new interpreter if needed. Many deaf-blind individuals miss information when interpreters switch and they are still scanning (or re-pinning) while interpreting has moved on.

- Interpreter copy-signing – If multiple participants are using ASL, the facilitator should ask interpreters to copy-sign what the participants are signing so that deaf-blind participants do not have to search through video windows to find the person who is signing. This option allows the participant who is deaf-blind to maintain their focus on one window ensuring they do not miss information. Participants might prefer the use of a Certified Deaf Interpreter, or CDI, to facilitate the copy-signing, this should be discussed before the interpreters are assigned.
- Accessibility of captions – The captioner or facilitator should ensure participants can access captions and follow them clearly before the meeting starts. Facilitators should:
 - Identify how to turn captions on and off.
 - Clarify with the host how the captions will be provided per the participant’s request. Options include remote captioning services in a separate window, caption options within Zoom onscreen and/or in Transcript view, or an alternative such as Google docs.
 - Identify font and contrast options (this will depend on which program is being used to provide captions) and ensure the participant’s preferences are implemented.

Establish Rules for Chat Box and Monitor Use

While the chat box can provide opportunities for clarification and information sharing, chat box notifications can block an interpreter’s video window or be distracting to sign language users who are looking at a different screen (i.e. VRS). Conversations in the chat box can also be missed or distract from the main conversation for a participant with vision loss. The facilitator should limit use of the chat box for side comments and establish parameters for chat box use (questions, link sharing, etc.). If the chat box is used for a specific purpose, then the facilitator should read each of the chat box comments aloud throughout the meeting. The facilitator should include the instructions for chat box use when they communicate expectations of behavior to participants at the beginning of the meeting.

Timing and Pacing

Along with allowing enough time during a meeting for accommodations such as interpreting switches, the facilitator should also be mindful that sensory and mental fatigue can be more of an issue in a virtual environment than it is in-person. Depending on the needs of participants, the facilitator may consider breaking up meetings into multiple sessions. Facilitators might also consider checking in with the participant privately throughout the course of the meeting.

Visual Set-Up

If there are a number of participants who will be utilizing interpretation during the meeting, it is important to minimize the use of visual elements in the presentation. In some instances, this may mean forgoing the use of PowerPoints and screen sharing. When PowerPoints and other visuals are used, they should be uncluttered and high color contrast. To unclutter the Zoom meeting window, a host may consider limiting the participants’ ability to use their camera (if they are not signing or presenting) and hide all non-video participants from the view. This will reduce the number of boxes on the screen.

PARTICIPANT PRACTICES DURING THE MEETING

To foster all participants' understanding of how they can support an inclusive meeting, it is important for the host to share a list of practices with the participants beforehand so that everyone starts the meeting on the same page.

Avoid Switching Camera On/Off

Participants should avoid turning their camera on and off during the course of the meeting. Typically, when communicating with individuals who are Deaf or hard of hearing, it is recommended that participants have their video on for additional visual information (i.e. facial responses and body language). However, turning cameras on and off during a meeting can shuffle the order in which windows appear. This could move the location of an interpreter or speaker unless they have been pinned or spotlighted. Shuffling windows may create confusion for individuals with vision loss who are unable to easily scan through the participant pages. If possible, participants should keep their camera use constant (on or off) for the duration of the meeting.

Mute Microphone When Not in Use

Microphones that are on when a participant is not speaking may pick up background noise and can redirect the focus of the screen away from the speaker. To avoid shuffling of participant windows or interruption to the speaker's audio, participants should mute themselves when they are not speaking.

Respect Chat Box Parameters

Use of the chat box can be distracting for those utilizing interpretation or those who have low vision. Participants should avoid side conversations in the chat box and only use it as the facilitator has directed (essential information, questions to the presenter, etc.).

Speak/Sign Slowly, Clearly, and Identify Yourself

Individuals who are deaf-blind may have difficulty following sign language or speech that is presented too quickly or outside of their field of vision. They also may have difficulty identifying who is speaking/signing if their focus needs to remain on the interpreter/ captions. Interpreters and Captioners also need extra time to interpret the information shared. Zoom participants should identify themselves when they begin speaking/signing and they may need to communicate at a slower pace than their typical speed.

Minimize Distractions

For maximum understanding of both sign language and speech, create a background behind you that is uncluttered, and preferably a solid, dark color. Do this by positioning yourself in front of an uncluttered wall or sheet/screen (note that the virtual backgrounds options in Zoom are not ideal as they can blend in with your video or diminish the camera view). This will also minimize the distraction of movement in the background. Participants can minimize auditory distractions - when their microphone is on - by participating from an environment that is free from background noise.

Additional distraction considerations:

- Pay attention to lighting to ensure you are visible (i.e. not back lit).
- Avoid wearing distracting clothes such as busy prints, reflective clothes, hats, etc. This will make it easier for low vision users to see sign language.

- Frame your space so that others have full view of your signs but they are also close enough to the camera to read clearly.

Be Descriptive

If you use acronyms and sign names during the meeting, explain them at least once. Describe all images or visual aids used in the meeting.

HOST PRACTICES AFTER THE MEETING

Distribute Meeting Transcript

Sharing a transcript after a meeting concludes can be helpful for those who may have missed some information throughout the meeting due to accessibility challenges. It's important to remember that individuals using screen magnification, braille displays, or any form of sign language may be actively accessing the meeting through the use of their hands making it a challenge to take notes. A meeting host can ease tension and increase participation for all individuals by clarifying ahead of time that meeting minutes will be distributed at the end of the meeting.

Conduct Participant Survey

An evaluation of what accommodations work best should be an ongoing process of discovery and should be conducted on an individual basis. A measurable way to accomplish this is to distribute a survey after the completion of each Zoom meeting to gather feedback from the participant's experience. Some examples of evaluation questions (which participants could rate on a scale of "strongly agree" to "strongly disagree") include:

- I was able to participate in this discussion and was not limited in involvement due to my accommodations.
- Interpreter/ captioner/ other communication provider were competent and had enough understanding of the topics discussed to provide accurate information.
- Receiving the agenda/ presentation materials beforehand and meeting transcript after the meeting was helpful to my participation in the meeting.
- I was able to access meeting materials such as PowerPoint presentations, agendas and handouts.
- I felt included in all aspects of the meeting and had access to content, comments, discussion, opportunities to ask questions, and presentation materials.

Identify Best Practices for Future Meetings

By evaluating a meeting, the meeting facilitator has the opportunity to understand what works or could be improved for specific individuals, and adjustments that could be implemented. It is important to remember that deaf-blind people are ideally the best experts about what they need, and should have the option of being involved in identifying and evaluating their accommodations and supports.

Accessible Zoom meetings for people with disabilities requires a dialogue about accommodations and support needs well before a meeting begins, monitoring accessibility throughout the meeting, and evaluating participant experiences after the meeting concludes. These practices should be used as a guide to initiating a conversation about the inclusion of individuals who are deaf-blind in virtual meetings.

The goal of this White Paper is to increase awareness among professionals about aspects of Zoom that may be accessible with the appropriate accommodations, but it is the responsibility of the meeting facilitator to implement accommodations within their meeting. To identify the best way to support Zoom participants, facilitators must understand that accommodation and communication preferences, along with individual life experiences and skill sets, vary. This is especially true within the deaf-blind community but the concept can be universally applied to individuals with disabilities. There is no one-size-fits-all solution and all accommodations should be designed around the individual participant/s with a disability.

ADDITIONAL RESOURCES

[Zoom Accessibility Features](#)

[Zoom Using Captioning](#)

[Zoom Keyboard Shortcut Keys](#)

Zoom User Guide in ASL:

- https://youtu.be/7FYmpOjv4L8?fbclid=IwAR3AtuAgFQQEkpjSeigy_ChHfRHH_IOP6k4PhRbef5wyK2xGA_-4tx_yMN
- <https://youtu.be/iylgpJS9oVg>
- <https://youtu.be/ngJNt6vsu0c>
- <https://youtu.be/D5-T7Wv7THY>
- <https://youtu.be/-ffkv0lwvqAse>

[Tactile and High Contrast Graphic of Zoom Interface](#)

[Zoom Tutorial with Interpreters](#)

[Pinning vs. Spotighting](#)