



Texas School for the Blind and Visually Impaired

Outreach Programs

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Collaboration Tool for Environmental Sounds

The following provides a series of items as a guideline for the collaborative efforts of the Audiologist, Teacher of Deaf and the Hard of Hearing, and the Orientation and Mobility Specialist. Possible interventions or implications are likely found in the following areas:

Mic directionality, Noise reduction/suppression, Ear mold venting, Compression, Binaural amplification, Multiple programs, and Potential use of FM+M setting. Note, a hearing aid does not have to do all of these things all of the time.

<p style="text-align: center;">Landmarking, Cues, and Clues</p> <p>(*Note, by definition “landmarks” need to be constant/continuous sounds and therefore may be considered “noise” by amplification)</p>	<p style="text-align: center;">Notes on Student Needs or Concerns</p>
<p>Using sounds from the environment for maintaining orientation (e.g. compressor on the drinking fountain, vending machines, dishwasher, fans, etc.)</p>	
<p>Using sounds for clues about the purpose of a public area in commercial setting (e.g. children’s music played in the book store near the children’s section, instrument sounds from the band room, etc.)</p>	
<p>Using sounds to circumnavigate something (e.g. walking around a fountain in the center of a park)</p>	

Monitoring activity sounds indoors in home setting (e.g. from the kitchen area, water running at the sink, flushing toilet, typing on keyboard in the office, parent preparing dinner)	
Monitoring activity sounds indoors in commercial settings (e.g. scanner at checkout lines at grocery stores to determine the location of the front of the store and proximity to exits, automatic doors at front of store, cashier at front of Starbucks)	

Echolocation	Notes on Student Needs or Concerns
Using echoes and reflected sound for size of space (passive echolocation would use ambient sound and active echolocation would use a self-generated sounds like tongue clicks or cane taps) for determining size of space, such as using sound to determine a big room (e.g. auditorium, gymnasium, or cafeteria) from a smaller room.	
Using echoes and reflected sound for orientation and navigation (e.g. using passive echolocation to determine open hallways for turning en route to a classroom, using active echolocation to determine the location of a building across a parking lot).	

Traffic Considerations for Safety in the Community	Notes on Student Needs or Concerns

Estimating distance of sound source, fixed source or from moving source	
Using the sound emitted from of a lane of traffic that is next to the student who is deafblind as they cross the street to make sure their crossing is straight (this is an alignment from the side rather than front to back)	
Using sound that emitted from in front or behind as orientation while walking. (e.g. using the beeping accessible pedestrian signal as a target for their destination)	
Recognizing sound masking and the dangers that may present by missing an important environmental component (e.g. sound of a plane overpowering the sound of a hybrid car)	
Identifying patterns in sounds, (e.g. cars turning at an intersection in various directions)	
Distinguishing sources of sounds (e.g. lawnmower, airplane, etc.)	
Recognizing sound shadows (e.g. large parked vehicle that blocks the sound of traffic)	
Determining distance and direction of sound in traffic settings from all directions simultaneously if possible (e.g. to determine whether an emergency vehicle is approaching or going away from one's self, to determine the proximity and direction of perpendicular traffic or right hand turning cars before stepping	

into the crosswalk, monitoring for approaching or departing trains at a station platform)	
Analyzing distant traffic sounds in residential areas (e.g. detecting cross streets to keep path straight and toward destination, and awareness of impending street crossings)	

Other Skills	Notes on Student Needs or Concerns
Localizing sounds (e.g. being able to walk to a sound source, for use in retrieving a dropped object)	
Monitoring activity sounds outdoors for safety and general awareness of environment (e.g. keeping track of nearby space to be aware of individuals walking up from behind or those approaching from the front)	
Understanding when one's own ability to use sound is impacted by changes within the environment, or within one's self (for example adverse weather conditions, battery dying in an assistive device, choosing the correct amplification program).	

Sounds that may remain inaudible even with the use of amplification:

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Figure 1 TSBVI logo.



"This project is supported by the U.S. Department of Education, Office of Special Education Programs (OSEP). Opinions expressed herein are those of the authors and do not necessarily represent the position of the U.S. Department of Education."

Figure 2

IDEAs that Work logo and OSEP disclaimer.