

Informal Functional Hearing Evaluation for Students with DeafBlindness

Presented by

Chris Montgomery, M. Ed., TVI
Deafblind Education Consultant
TSBVI Outreach Programs

Alexia Papanicolas, Au.D., CCC-A
Educational Audiologist
Division of Specialized Instruction
Office of Teaching and Learning



Formal Audiological Testing

(A Review)

- Remember - there are two different formal audiology measures
 - **behavioral** (audiology booth/pure tone, speech recognition)
 - and **physiological** auditory brainstem response (ABR), oto acoustic emission (OAE), and tympanometry.
- The most “real world” audiological measure is speech discrimination testing
 - many kids w/deafblindness aren’t tested using speech discrimination because they don’t use formal speech to communicate.

Why perform formal audiological testing?

- Formal testing - Audiologists need repeatable test measures so they can have a reliable baseline from which to test from over time.
 - Formal testing tries to eliminate as many individual characteristics as possible – repeatable test measures over a period of time to see physiological differences.
 - Need specific tests, in a controlled environment, in a controlled way.



Differences in Testing Deaf vs. DB

Students who are deaf / HH

- Can see sound sources and more easily make the connection between sound and source
- Can more easily learn to participate in behavioral assessment and audiologists know how to work with them

Students who are deafblind

- Will not make that connection unless systematically taught usually through tactile sense
- Have great difficulty participating in behavioral testing without specific instruction and audiologists do not know much about modifying testing procedures for them.



General Premise #1:

Formal hearing assessment tools may suffice if the child can participate fully in testing.

It is generally not enough if the child cannot fully participate in formal testing.



General Premise #2:

- Any student with a hearing impairment may function differently in the real world than the results of the clinical testing might suggest.
- Students with DeafBlindness are particularly likely to demonstrate discrepancies between clinical hearing results and real world functioning because of gaps in concept development due to an increased lack of incidental learning.

Question: Does sound have meaning if it's not meaningful?

- Sound with no meaning attached
 - If the child has no experience with auditory information they may not hear it
 - Students with DeafBlindness may not have a visual referent to the sound source.

IFHE Origins

- Based on:

Formal Versus Informal Hearing Tests: What is Functional Hearing? *By Jim Durkel & Kate Moss*

<http://www.tsbvi.edu/formal-versus-informal-hearing-tests-what-is-functional-hearing>

What is the Informal Functional Hearing Evaluation (IFHE)?



- An informal evaluation conducted by TDHH, TDB, Speech Path, or Educational Audiologist
- For students with vision impairment *and* suspected/documentated hearing loss

The IFHE cannot

- Replace formal audiological testing
- Diagnose a hearing loss and/or determine normal hearing
- Be used in isolation

Why the IFHE?

- Serve as first step in evaluation for students who are unable to be/not yet tested for medical reasons.
- Gather information about the student's ability to access auditory information in a variety of settings
- Help guide formal testing by an audiologist.



Why the IFHE?

- Guide the team in creating and implementing instructional modifications and accommodations.
- Guide auditory training needs.
- IFHE provides the information to help make the decision about eligibility as DeafBlind

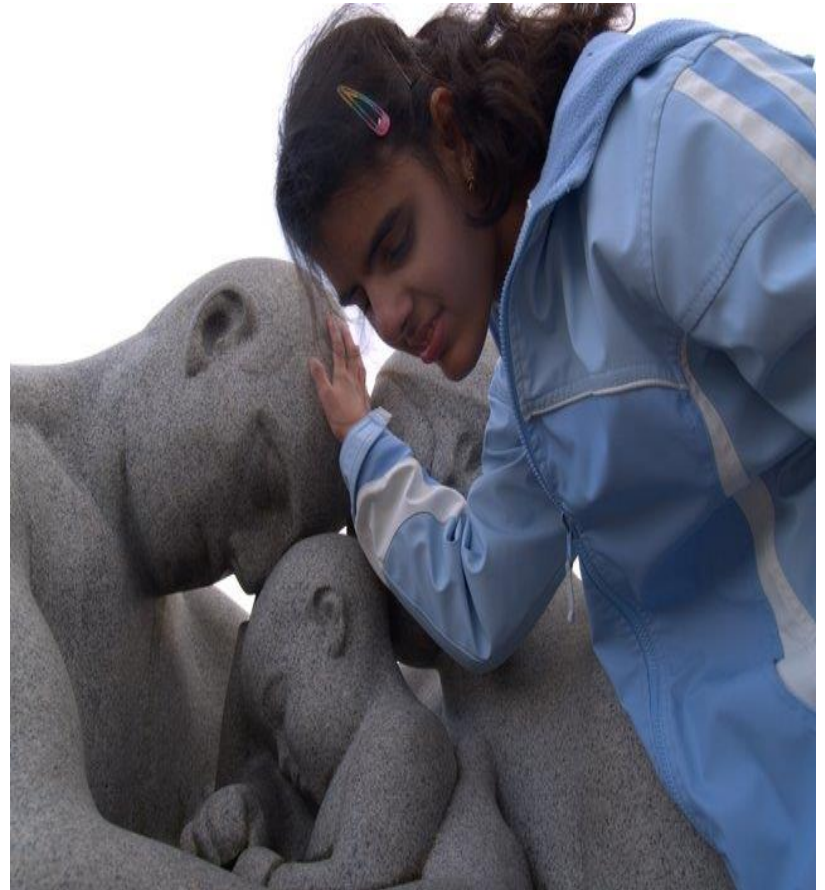


Who contributes to the IFHE?

- Child's educational team including classroom teacher, parents, SLP, etc.
- Teacher of the deaf and hard of hearing, teacher of the deafblind.
- With input from the teacher of the visually impaired.
- Audiologist and otologist (as information becomes available)

The Main Parts of the IFHE

1. Intro and instructions
2. Interview worksheets
3. Observation Checklist
4. Report summary



Parent and team interview

As Part of Natural Observation

How does the child hear at home or in the community vs. school or the sound booth?

Observation

Natural observation: Watching the child in familiar and unfamiliar environments – *How do they respond to sound?*

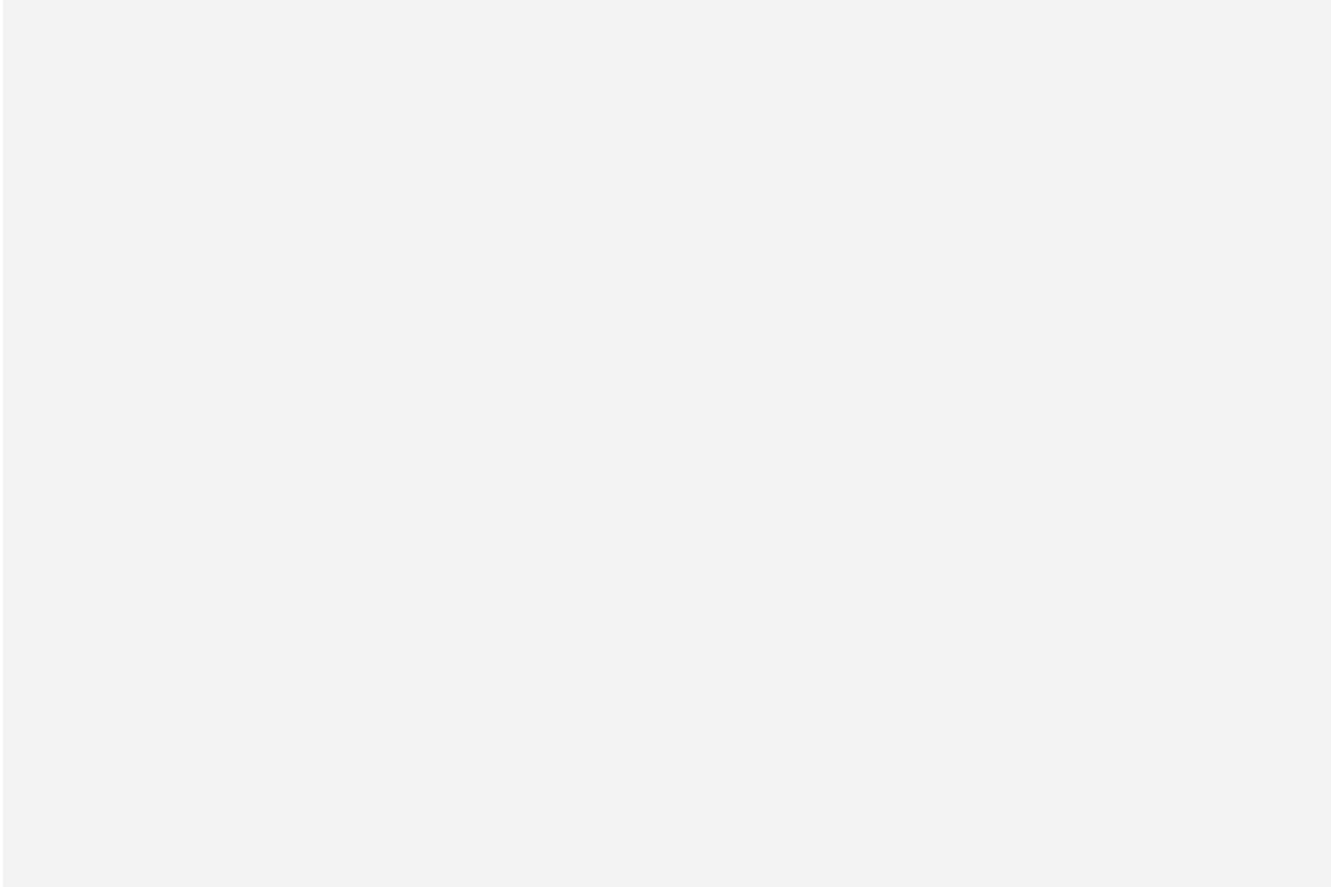
Systematic Observation: Using information from formal hearing tests, and **within the context of a familiar routine**, observe patterns in the student's behavior indicating use of hearing.

Systematic Observation

Multi-sensory approach

- Use the sandwich method of presenting sensory information
- Pair sensory information in a very specific way – specific voice with specific movement or symbol

Julie and Ray



Systematic Observation

Auditory Patterning

- Is there a difference in performance based on the types of sounds?
- Is there a difference in performance with competing information from other senses
- Directionality - Is there a difference in performance depending on where the sound comes from?

Systematic Observation

Sound is Meaningful

- Reflexive awareness - Does the child startle to sound but otherwise not pay much attention?
- Does the child attend to and associate auditory stimuli with its source?
- Does the child show anticipation or recognition through the use of hearing? If so how?
- What sounds does the child respond to?

Systematic Observation

Sound as Meaning - continued

Auditory Feedback

- At a play level? Does the child enjoy making noise, either with his or her mouth, by activating switches, hitting two objects together, playing musical instruments, etc.?
- Does child vocalize when amplification is turned on?

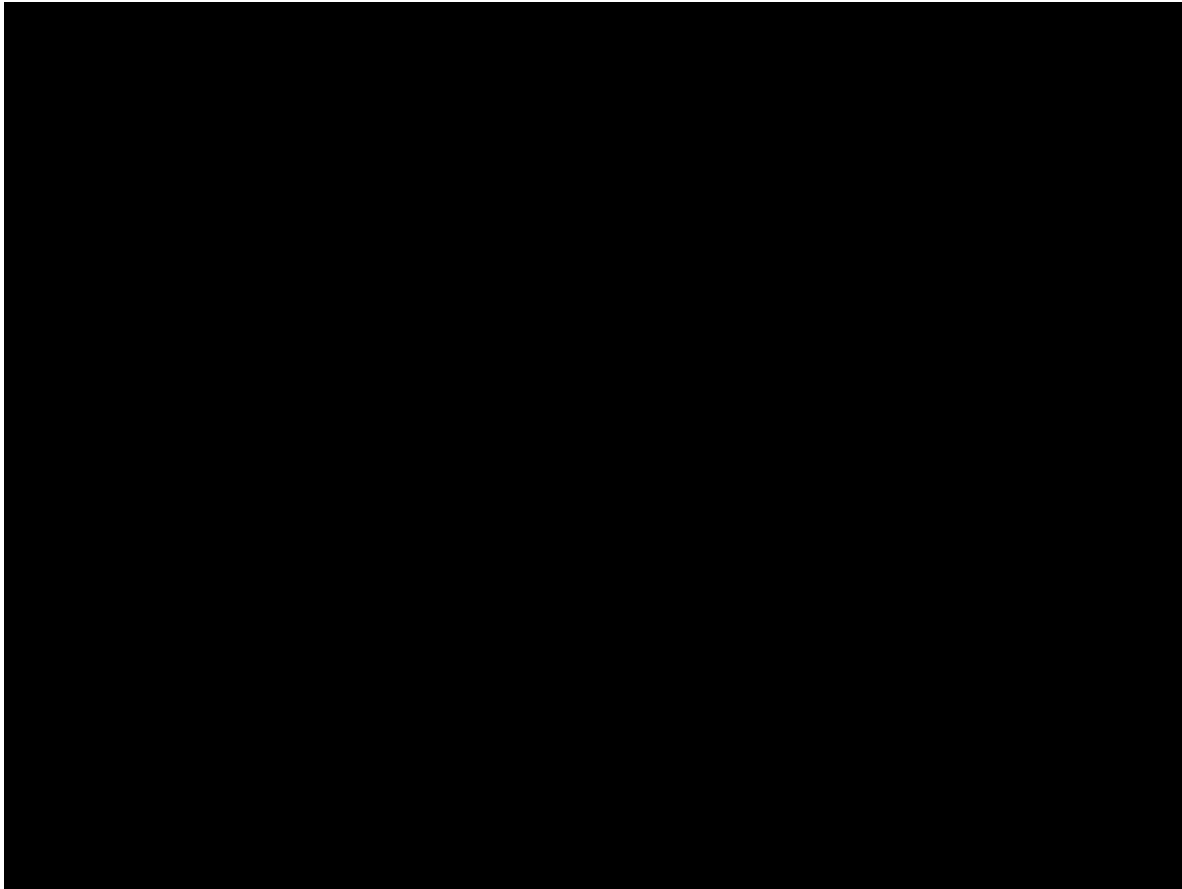
Systematic Observation

Auditory Patterning

- Latency - How long after the input does it take for a typical response to occur?
- Do responses vary across different environments?
- Does the child recognize when an adult mimics their vocal patterns?
- Does the child try to mimic familiar vocal patterns (pitches and rhythms, especially)



Chris and Ray



Systematic Observation

Short-term Auditory Memory

- Does the child associate a particular sound with a particular event? How do they demonstrate this association?
- Does the child attempt to repeat familiar vocal sequences or sounds?

Systematic Observation

Linguistic Auditory Processing

- At a communicative level? Does the child recognize any common words, especially his or her name?
- Does the child try to use any sounds consistently to communicate?

General Functioning and Awareness	Yes	No	Describe
<p>1. Does the child show any awareness of any sensory information (visual, tactual, etc.)? How do you know this?</p>			
<p>1. Does the child show any awareness of auditory information? How do you know this? (Example: Does the child demonstrate an association between movement cues and a pleasurable auditory stimulus or activity?)</p>			
<p>a. Contextual—Familiar sounds in a familiar routine/environment</p>			
<p>a. Out of context—Familiar sounds in an unfamiliar routine/environment</p>			
<p>a. Novel—New sounds in a familiar context/environment</p>			
<p>a. Novel/unfamiliar—New sounds in an unfamiliar context/environment</p>			

Linguistic Auditory Processing	Yes	No	Describe
<p>1. Does the child recognize any common words, especially his/her name?</p>			
<p>1. Does the child try to use any sounds consistently to communicate?</p>			

Report Summary

Informal Hearing Assessment Results:

- Provides an opportunity to organize information from the inventory as well as information from interviews, information observations or other formal testing and assessments.
- The report summary can also serve as place to gather all medical and formal audiological information into one document.

What did the IFHE do for Us?

- Improved Collaboration
 - Initiates the conversation within the MDT
 - Provides avenue for evidence to support
- IEP Outcomes
 - Help establish strengths and weaknesses to shape IEP goals
- Auditory Training Outcomes
 - Document improvement (or lack of) with current auditory training strategies in place
 - Evidence for communication preference

What did the IFHE do for Us?

- Improved Teaching Strategies
 - Incorporating more tactile signs
 - Altering teaching material to reinforce strengths
- Supplemental information for further clinical testing
 - Lack of formal language
 - Feedback from parents
 - Environmental

Thanks for joining us!

