



Professional Day

Friday, August 2, 2019

The IFHE: Functional Hearing and the IEP

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Presenter Information

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Amy has been working with students who are DeafBlind for over 8 years. She holds a Master’s degree in Deaf Education and Hearing Science from the University of Texas Health Science Center, San Antonio. Ms. Baxter has worked in variety of public schools throughout Texas including the Texas School for the Deaf and Texas School for the Blind and Visually Impaired. She has served students who are Deaf and DeafBlind in a variety of positions including as a preschool and elementary teacher and early childhood intervention specialist. Currently, Ms. Baxter provides services for students from the ages 6 to 22 as the DeafBlind consultant for comprehensive programs at TSBVI. In addition to her work in the educational field, Ms. Baxter also serves children and adults in the Austin, Texas area who are DeafBlind by working as an intervener in the home and community settings.

Presentation Abstract

Auditory test results for students who are DeafBlind and have multiple disabilities can often be difficult for IEP teams to interpret. These students may demonstrate the ability to use their hearing certain environments that can seem inconsistent with audiometric results. To help teams provide data on how these students use their hearing in a variety of settings, the Texas School for the Blind and Visually Impaired (TSBVI) has developed the Informal Functional Hearing Evaluation (IFHE). The results of this collaborative evaluation can help provide IEP teams with ideas for the development of strategies and accommodations that utilize and build on the functional hearing skills of students who are DeafBlind.

Learning Objectives

- Determine the need for completing the IFHE for a student
- Describe the functions of each section of the IFHE,
- Describe how to record information from the IFHE in the required documents of the IEP

Informal Functional Hearing Evaluation (IFHE)



Developed by Texas School for the Blind & Visually Impaired
Outreach Programs

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Informal Functional Hearing Evaluation (IFHE)	1
Introduction.....	3
 Instructions for Completing the IFHE.....	3
Preparing for Natural and Systematic Observation	4
Determining Strengths & Needs	5
Making Recommendations	6
 Using the IFHE: Interview & Observation.....	6
Interview	6
Notes from Parent/Staff/Medical Team Interviews	8
Observation Checklist	9
 Report Summary: Putting it All Together	16
Interview Worksheets.....	16
General History.....	17
Audiological Information.....	17
 Summary Results & Recommendations of the IFHE	18
Summary Results of Formal Testing and Assessment	18
Summary Results and Recommendations of the IFHE	18
Federal Definition of DeafBlindness.....	20
References	21

Introduction

The Informal Functional Hearing Evaluation (IFHE) is meant to guide the teacher of the deaf and hard of hearing (TDHH), the teacher of the visually impaired (TVI), and the teacher of students with DeafBlindness (TDB) in determining the impact of a potential hearing loss on educational functioning for students with visual impairments and multiple disabilities.

The IFHE can serve as a guide for determining what accommodations are needed in the classroom, home, and community environments to promote student access to information. Because of the difficulty that a loss in both distance senses presents, a child who is deafblind may demonstrate a delay in identifying, understanding, and interpreting sounds and their sources. This delay can be pronounced, even if formal testing indicates a minimal loss of vision and hearing.

If an educator is concerned that a student with a visual impairment may also have a hearing loss:

- The IFHE can provide information about how the child is currently using his/her hearing in a variety of settings and then guide the IEP team in developing instructional strategies to address the child's dual sensory needs.
- The IFHE can document concerns when a student is unable to participate in formal testing (a lack of formal language, health issues, or concerns regarding sedation to test for an auditory brainstem response (ABR)).
- The IFHE can help shape programming considerations for a student with deafblindness.
- The IFHE can serve as a guide for determining what accommodations are needed in the classroom, home, and community environments to promote student access to information.
- The IFHE can be used as a compliment before formal testing to provide valuable information to the audiologist or ENT. **The IFHE should not serve as sole documentation of hearing impairment; formal testing is needed.**



Instructions for Completing the IFHE

The Informal Functional Hearing Evaluation (IFHE) should be completed by the educational team under the guidance of the TDHH, TDB, and/or speech-language pathologist, in collaboration with the TVI. The process consists of the following components:

- **Parent/Staff Interview:** Discuss observed behaviors related to the child's hearing in home, classroom, and community settings to learn about his/her auditory functioning.

- **Natural Observation:** Watch the child in familiar environments, during familiar activities.
- **Systematic Observation:** Use information from formal hearing tests to observe behavior within familiar routines and record patterns that might indicate a child's use of hearing.

Example

If the results of formal hearing tests indicate that the child should be able to hear loud low frequency sounds, like a drumbeat, you may want to set up a simple turn-taking game involving beating a drum to see if the child listens while you beat. Does the child take a turn after you stop? If the child participates in this game, you can try similar games with other sounds that vary by pitch and loudness. Record your observations of the child in these various routines. It might take several repetitions of the game, across several days or weeks, before the child learns his or her role.

[*See more examples of routines that can be used to evaluate a child's functional hearing.*](#)

Preparing for Natural and Systematic Observation

The graphic in Figure 1 on the next page presents familiar and typical environmental sounds and their corresponding frequency levels. When designing the materials and protocols for your observations it is important to first review any existing audiological evaluations to determine the best available frequencies and degrees of hearing loss. Is it low-frequency or high-frequency loss? This information will help to collect sound sources to use when designing the routines that will serve your observations.

Routines add predictability and structure and should be used as the observational context for the IFHE. To learn more about the routines and to see some examples of routines that can be used to evaluate a child's functional hearing, visit [Communication for Children with DeafBlindness](#).

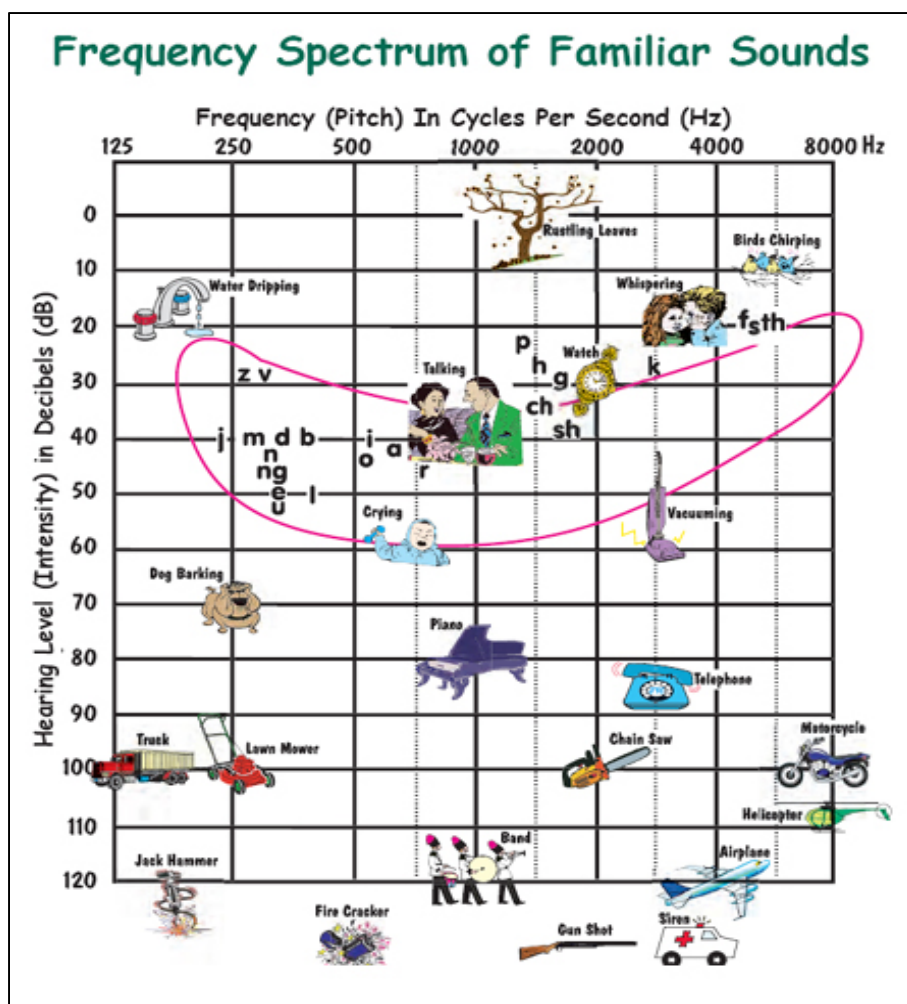


Figure 1 Frequency Spectrum of Familiar Sounds: Showing frequencies and intensity of various sound sources. Creative Commons image

If no audiological evaluation exists, choose a wide range of sound sources with various frequencies, such as a drum, piano, whistle, vacuum cleaner, etc. Of course, the human voice is also a good sound source and should be used in all evaluations.

Determining Strengths & Needs

After compiling all of the information collected in interviews and observations, the TDHH, TDB, and/or speech-language pathologist should list the student's strengths and needs in the areas of functional hearing to determine whether a referral for formal testing should be made.

- **Strengths:** Areas of functioning that can be identified and described that demonstrate the child's attention to or understanding of sound.
- **Needs:** Areas of auditory functioning in which the student appears to demonstrate difficulty due to lack of auditory training.

Making Recommendations

Accommodations and instructional strategies to address functional hearing needs should be detailed in the **Recommendations** section of the report and provided to the IEP team. Recommendations should address the effects that a combined vision and hearing loss will have on the child's ability to access instruction and environmental information. If possible, share the results of the IFHE with the audiologist prior to a formal hearing screening.

Recommendations from the IFHE can:

- Be included in the students' Communication Evaluation and/or the Learning Media Assessment.
- Be used to develop a comprehensive list of accommodations to be implemented by the IEP team.
- Be used to help design instructional strategies and an optimal learning environment before beginning a phase of diagnostic teaching. Strategies include specific focus on connecting sound sources to the person or object producing the sound during familiar activities and routines.
- Be used in documenting student progress, implementing auditory training strategies, and applying information gained from formal testing results, thereby assisting the IEP team in determining whether a child meets eligibility for deafblindness.



Using the IFHE: Interview & Observation

Interview

It is important to collect information from those who know how the child typically functions. This can include parents/caregivers, educational staff or members of the medical team. Use the questions and spaces below to record information from your interview(s).

1. What sounds do you think the child hears?

2. What reactions or behaviors make you think the child is hearing the sound?

3. Does the child seem to associate a particular sound with a person or activity? (For example, the sound of the garage door opening causes the child to get excited because he knows his dad is home.)
4. Does the child seem to have any favorite sounds, such as a song, a person's voice, or a sound created by an object or animal?
5. Do some sounds seem to frighten or upset the child?
6. Do some sounds seem to calm or soothe the child?
7. Are there specific environments in which the child consistently requests or rejects hearing aids or cochlear implants?
8. Does the child vocalize? When, and under what conditions?
9. Does the child seem to respond to his/her name under most conditions?
10. Does the child respond to other phrases under most conditions?
11. Do you think there are sounds the child does not hear? Why?

12. Does the child have a history of ear infections?

13. Does/did anyone in the child's family have a hearing loss?

14. Has the child been treated with medicines for major infections, cancer, etc.?

Notes from Parent/Staff/Medical Team Interviews

Use the space below for any additional notes or summaries.



Go to the [**Report Summary**](#). Summarize information collected from your interviews in the section labeled [**Interview Worksheets**](#).

Observation Checklist

- Review existing documentation, including notes from the Parent/Medical Team Interview, to guide your natural and systematic observations of the student in a variety of settings.
- Use the checklists below to document and make notes on the child's performance in the functional hearing categories listed.
- Record the results of your observations in the [Summary Results of the Informal Observations](#) section of the report summary.

Student Name:

Date(s) Observed:

Briefly describe the child's state of awareness at the time of the assessment (e.g., excited, sleepy, highly aroused, agitated):

General Functioning and Awareness

Area of Observation	Yes	No	Describe
1. Does the child show any awareness of any sensory information (visual, tactual, etc.)? How do you know this?			
2. 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?)			
a. Contextual—Familiar sounds in a familiar routine/environment			
b. Out of context—Familiar sounds in an unfamiliar routine/environment			
c. Novel—New sounds in a familiar context/environment			

Area of Observation	Yes	No	Describe
d. Novel/unfamiliar—New sounds in an unfamiliar context/environment			

Sound is Meaningful

Area of Observation	Yes	No	Describe
3. Does the child attend to and associate auditory stimuli with their sources?			
4. Does the child show anticipation of an event or recognition of a person or object through the use of hearing? (Example: The child giggles and claps her hands at the sound of her mother's voice in another room or the music produced by a favorite toy hidden from view.)			
a. In familiar context			
b. In unfamiliar context			

Auditory Patterning

Area of Observation	Yes	No	Describe
5. Does the child show awareness of the start and cessation of sounds?			
6. Is there a difference in performance based on type of sound?			
a. Pitch (high vs. low)			
b. Rhythm (simple vs. complex)			

Area of Observation	Yes	No	Describe
c. Intensity (loud vs. soft)			
d. Duration (short vs. long)			
e. Distance (near vs. far)			
f. Movement (moving toward vs. away from)			
g. Vowel sounds (in isolation)			
h. Consonant sounds (in isolation)			
i. Sound source (voice vs. environmental)			
j. Male vs. female voices			
k. Familiar vs. unfamiliar voices			
l. Specific type(s) of music			
m. Specific instrument(s)			
7. Is there a difference in behavior based on environment?			
a. Quiet vs. noisy			
b. Places with high levels of reverberation vs. places where reverberation is dampened (e.g., gym vs. carpeted classroom)			
c. Places with competing vocal and environmental sounds (e.g., teacher's voice when AC turns on)			
d. Places with competing sensory information (lights, smells, etc.)			

Area of Observation	Yes	No	Describe
8. Is there a delay in response? (latency)			
a. In quiet environments (e.g., carpeted room with little to no extraneous conversation, empty playground far removed from traffic noise)			
b. In noisy environments (e.g., gym, cafeteria, tiled classroom with multiple sound-emitting electronic devices and conversations)			
c. In familiar context			
d. In unfamiliar context			
9. Are there different responses based on the child's bio-behavioral state or at various times of day?			
a. Before or after a meal			
b. Before or after medication			
c. Time of day			
d. Quiet alert or active alert vs. fussy or agitated			
10. Does the child recognize when an adult mimics his/her vocalizations? (Example: The child stops moving or vocalizing when an adult attempts to mimic his vocalizations. The child then responds by repeating his previous vocalization.)			

Area of Observation	Yes	No	Describe
a. Familiar adult with familiar pattern			
b. Unfamiliar adult with familiar pattern			
c. Familiar adult with random pattern			
d. Unfamiliar adult with random pattern			
11. Does the child try to mimic familiar vocal patterns?			
a. Mimics rhythm			
b. Mimics pitch			
c. Mimics vowel sounds			
d. Mimics consonant sounds			
e. Mimics animal sounds or funny sounds			
f. Mimics line from a song or rhyme			

Sound as Meaning

Area of Observation	Yes	No	Describe
12. Does the child startle to sound but otherwise not pay much attention? (reflexive awareness)			
13. Does sound help the child enter and maintain a quiet alert or active alert state? (self-regulation)			
14. Are there sounds that make the child fussy or agitated?			

Localization

Area of Observation	Yes	No	Describe
15. Does the child turn toward, move toward, or reach for a sound source?			
a. Familiar object or environmental sound			
b. Unfamiliar object or environmental sound			
c. Familiar human voice			
d. Unfamiliar human voice			

Auditory Feedback

Area of Observation	Yes	No	Describe
16. Does the child enjoy making noise, either with his or her mouth, by activating switches, hitting two objects together, playing musical instruments, etc.?			
17. Does the child vocalize when amplification is turned on? (Example: The child consistently giggles or makes a "shhh" or "he" sound when amplification is engaged.)			
18. Does the child vocalize in response to others' vocal play?			

Short-Term Auditory Memory

Area of Observation	Yes	No	Describe
19. Does the child associate a particular sound with a particular event?			
20. Does the child attempt to repeat familiar vocal sequences or sounds?			

Linguistic Auditory Processing

Area of Observation	Yes	No	Describe
21. Does the child recognize any common words, especially his/her name?			
22. Does the child try to use any sounds consistently to communicate?			

Notes from Natural and Systematic Observation

These notes should help you in preparing the final report.

Summary impressions of auditory functioning:

Recommendations for student in an educational setting:



Report Summary: Putting it All Together

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

Interview Worksheets

Use the space below to summarize information collected from the [interviews](#).

Family/Caregiver:

Staff:

Medical Team:

General History

Etiology

Cause of vision loss

Audiological Information

History of middle ear infections

History of hearing loss in family

History of treatment with ototoxic drugs

Results of ENT report

Appearance of ears

Results of unaided testing

Implications of hearing loss

Prescribed listening devices

Listening devices child currently wears/uses

Other Medical Information

Note other pertinent medical information



Summary Results & Recommendations of the IFHE

Summary Results of Formal Testing and Assessment

Formal Test Results

Speech:

Communication:

Summary Results/Recommendations of the IFHE

Informal/Anecdotal Information:

Summary Results of Informal Observation ([Observation Checklist](#))

General Functioning and Awareness

Sound Is Meaningful

Auditory Patterning

Sound As Meaning

Localization

Auditory Feedback

Short-Term Auditory Memory

Linguistic Auditory Processing

Summary of Auditory Assessment

Auditory Strengths:

Auditory Needs:

Recommendations Related to Hearing in Instructional Settings:

Federal Definition of DeafBlindness

The Code of Federal Regulations defines a student with DeafBlindness as follows:

Deaf-blindness means concomitant hearing and visual impairments, the combination of which causes such severe communication and other developmental and educational needs that they cannot be accommodated in special education programs solely for children with deafness or children with blindness. 34 CFR 300.8 (c) (2)

In addition to the definition listed above, some states may include further definitions and eligibility criteria through which a child may qualify for services as a student with DeafBlindness. If the results of this evaluation indicate that the student may meet the federal definition of DeafBlindness listed in this section, it is recommended that you meet with the student's educational team to discuss the student's eligibility for DeafBlind services and inclusion in your state's DeafBlind child count in accordance with state and federal guidelines.

References

- Brown, D., 2001. Follow the Child – Approaches to Assessing the Functional Vision and Hearing of Young Children with Congenital Deaf-Blindness. Volume 10, Number 9, Winter 2001 reSources, published by California Deaf-Blind Services.
- Durkel, J. and Moss, K., 2005. Formal Versus Informal Hearing Tests: What is Functional Hearing? Originally published in See/Hear newsletter, Summer edition, 2005 by Texas School for the Blind and Visually Impaired. <http://www.tsbvi.edu/formal-versus-informal-hearing-tests-what-is-functional-hearing>
- Hearing and Cognition Screening Checklist, 2010.
<http://documents.nationaldb.org/TA/Oregon%20Deafblind%20Project%20Hearing%20and%20Cognition%20Screening%20Checklist.pdf>
- Inventory of Sound in the Home and Community Environments.
<http://documents.nationaldb.org/TA/Inventory%20of%20Sounds%20in%20Home.pdf>
- Petroff, J.B., Ruetsch, C.L., & Scott, E., 2003. Functional Assessment of Sensory Status of Children who are Deafblind. New Jersey Technical Assistance Project (N.J. TAP).
<http://documents.nationaldb.org/products/SensoryFunctioningAssessment2004.doc>
- Stredler-Brown, A. & Johnson, D.C. (2001, 2003). Functional Auditory Performance Indicators (FAPI) An Integrated Approach to Auditory Skill Development. Available on the NCDB website at
<http://www.tsbvi.edu/attachments/FunctionalAuditoryPerformanceIndicators.pdf>
- Success for Kids with Hearing Loss Tests- Informal Assessments for Parents, Students, Teachers <http://successforkidswithhearingloss.com/tests>



"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."