Language, Literacy, and Huh?

Children with Hearing Loss
Cara Senterfeit

LaShawn Thomas-Bridges

LaShawn needs a Bitmoji!
Objectives

1. Identify the impact hearing loss has on development

2. Explain characteristics of a learner who is Deaf/deaf or hard of hearing and best-practice interventions

3. Define the Speech Language Pathologist’s role with students who are Deaf/deaf or hard of hearing
How does sound work?
Normal hearing needed for a child to learn language

Understanding speech is difficult unless a quiet, 1-on-1 situation

Misses 50-75% of conversation and speech

Misses almost 100% of conversation and speech

Aware of the presence of sound if 12 inches from source

Aware of the presence of sound mostly through vibrations

**Hearing Loss simulation**
Hearing Loss...I don’t know anyone with a hearing loss

“Approximately 35% of preschoolers will have repeated episodes of ear infections that nearly always cause temporary hearing loss that can significantly disrupt language acquisition and educational progress.” (ASHA, 2004)

Hearing Loss...I don’t know anyone with a hearing loss

“It has been estimated that the 3/1000 prevalence of permanent hearing loss in infants can be expected to increase to 9-10/1000 children in the school-age population.” (White, 2010)

Obtained from American Academy of Audiology Clinical Practice Guidelines: Childhood Hearing Screening (September 2011) which can be retrieved at https://audiology-web.s3.amazonaws.com/migrated/ChildhoodScreeningGuidelines.pdf. It references a presentation by Karl White, that is seemingly unavailable online, but commonly cited. White, K. (October, 2010). Twenty years of early hearing detection and intervention (EHDI): Where we’ve been and what we’ve learned. ASHA Audiology Virtual Conference.
Hearing Loss...I don’t know anyone with a hearing loss

NHANES data from 2009-2010 shows the overall prevalence (permanent and transitory hearing loss) is 15.2. This was surveying 12-19 year olds.

• 11,400 children SHOULD be identified
• Actual identification-1070 identified as DHH with an IEP, from 2016-17 Child Count Data
• ~ 300 0-3 year olds identified as DHH are receiving EI from SCSDB (per SCSDB EI Program Manager)

Why does that matter?
Word Gaps

Average Vocabulary “In” and “Out”

<table>
<thead>
<tr>
<th>AGE</th>
<th>Receptive: Words “In”</th>
<th>Expressive: Words “Out”</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6.5 million</td>
<td>5-10</td>
</tr>
<tr>
<td>2</td>
<td>13.5 million</td>
<td>300</td>
</tr>
<tr>
<td>3</td>
<td>19.5 million</td>
<td>900</td>
</tr>
<tr>
<td>4</td>
<td>26 million</td>
<td>1500</td>
</tr>
<tr>
<td>5</td>
<td>32.5 million</td>
<td>2500</td>
</tr>
</tbody>
</table>
Can you read this story?

Won upon a time a itty mow when to vit a untry mow. The untry mow live in a feel. EEE wuz lad to shee hi zittyfren. A too my ran abowda feel and lay unt noo.
Delayed Language Over Time

Why does that matter?

• End of 3rd grade= only 20% have 3rd grade reading skills (Luckner & Handley, 2008)

• At least 50% leave high school with 4th grade reading skills (Traxler (2000)

• As many as 30% of children that became deaf before age 3 read below the 2.9 reading level=functionally illiterate. (Vernon, Rafiman, Greenburg, & Monteiror, 2001)

• 60% unemployed

• 2-6 times more often victims of physical, mental and sexual abuse
Hearing Aid and FM Simulation
“While children are more alike than different, children who are deaf or hard of hearing have unique cultural and linguistic needs.

Most hearing children enter school with the ability to process and integrate verbal information. They have a basic command of the language and an extensive vocabulary.

School systems establish programs and services and develop curricula based on the assumption that all children enter school with basic language skills.

The schools then proceed to teach children to read, write and develop computational skills. With these tools, children are ready for the acquisition of information in content areas...

However, the majority of children with hearing loss seldom bring to their educational experience the same extensive language background or the same breadth of language skills as do hearing children.” (Marschark, 2003)...

“Compounding the manifest educational considerations, the communication nature of the disability is inherently isolating, with considerable effect on the interaction with peers and teachers that make up the educational process. This interaction, for the purpose of transmitting knowledge and developing the child's self-esteem and identity, in dependent upon direct communication. Yet, communication is the area most hampered between a deaf child and his or her hearing peers and teachers. Even the availability of interpreter services in the educational setting may not address deaf children's needs for direct and meaningful communication with peers and teachers.”
U.S. Department of Education Policy Guidance (1992) [https://www2.ed.gov/about/offices/list/ocr/docs/hq9806.html](https://www2.ed.gov/about/offices/list/ocr/docs/hq9806.html)

The NAD believes that ALL deaf and hard of hearing children are entitled to a Free and Appropriate Public Education (FAPE) in the Least Restrictive Environment (LRE), the environment that presents the fewest language and communication barriers to their cognitive, social, and emotional development.
[https://www.nad.org/about-us/position-statements/position-statement-on-inclusion/](https://www.nad.org/about-us/position-statements/position-statement-on-inclusion/)
The Cascading Impact of Hearing Loss

Fragmented Hearing → Increased Effort

Decreased Listening Comprehension

Increased Fatigue from Listening/Processing

Decreased pace of learning

# Relationship of HL to Learning Needs

## Relationship of Hearing Loss to Listening and Learning Needs

<table>
<thead>
<tr>
<th>MINIMAL HEARING LOSS (16-25 dB)</th>
<th>MINIMAL HEARING LOSS (16-25 dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Possible Impact on the Understanding of Language and Speech</strong></td>
<td><strong>Possible Social Impact</strong></td>
</tr>
<tr>
<td>Impact of a hearing loss that is approximately 20 dB can be compared to ability to hear when index fingers are placed in your ears. Child may have difficulty hearing faint or distant speech. At 16 dB student can miss up to 10% of speech signal when teacher is at a distance greater than 3 feet. A 20 dB or greater hearing loss in the better ear can result in absent, inconsistent or distorted parts of speech, especially word endings (s, ed) and unemphasized sounds. Percent of speech signal missed will be greater whenever there is background noise in the classroom, especially in the elementary grades where instruction is primarily verbal. Young children have the tendency to watch and copy the movements of other students rather than attending to auditorily fragmented teacher directions.</td>
<td>May be unaware of subtle conversational cues which could cause child to be viewed as inappropriate or awkward. May miss portions of fast-paced peer interactions which could begin to have an impact on socialization and self concept. May have immature behavior. May be more fatigued due to extra effort needed for understanding speech.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MILD HEARING LOSS (26-40 dB)</th>
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</thead>
<tbody>
<tr>
<td><strong>Possible Impact on the Understanding of Language and Speech</strong></td>
<td><strong>Possible Social Impact</strong></td>
</tr>
<tr>
<td>Effect of a hearing loss of approximately 20 dB can be compared to ability to hear when index fingers are placed in ears. Mild hearing loss causes greater listening difficulties than a &quot;plugged ear&quot; loss. Child can &quot;hear&quot; but misses fragments leading to misunderstanding. Degree of difficulty varies with task. Will have trouble with background noise.</td>
<td>Barriers begin to build with negative impact on self esteem as child is accused of &quot;hearing when he/she wants to,&quot; &quot;daydreaming,&quot; or &quot;not paying attention.&quot;</td>
</tr>
</tbody>
</table>
D/HH Assessment

• [https://successforkidswithhearingloss.com/for-professionals/tests-informal-assessments-for-parents-students-teachers/](https://successforkidswithhearingloss.com/for-professionals/tests-informal-assessments-for-parents-students-teachers/)
“Unless the language levels of deaf children are within 1 or 2 years of the levels of those in the regular class in which they are placed, they are virtually cut off from the entire verbal input process that is basic to educational experiences.” (Robbins, 2009, p. 298).
PARC: Placement and Readiness Checklists

for Students who are Deaf and Hard of Hearing

PARC is a set of placement and readiness checklists designed to assist IEP teams, including students, teachers, specialists, parents and school administrators, when making decisions about programming and placement for students who are deaf and hard of hearing (DHH). Most DHH students are considered for placement in the general education classroom for at least part of their school day. Ultimately, inclusion in the general education classroom for these students should mean that when provided the necessary accommodations, modifications, and supports, they have the ability to actively and meaningfully participate in the communication, instruction, and social activities of their class using their identified communication mode(s). There are two components that should be considered when evaluating placement and service delivery; first, the skills of the student and, second, the learning environment. Specifically, students should be matched for the learning environment by 1) demonstrating a set of prerequisite skills that are based on their identified individual goals and 2) documenting that the instructional environment is designed to support the student to achieve those goals.

These checklists may be used as tools to assist the IEP team in examining the many factors that influence how well a student is able to function and perform in various classroom settings. Through assessment in academic, communication and social areas to identify strengths and challenge areas as well as frequent monitoring of performance is always necessary to ensure that student skills, services and placement are aligned. In some cases, students may be "ready" for some classes or situations while not "ready" for others.

Part 1, the Readiness Checklists, focus on essential skills that students require in order to actively and meaningfully participate in their education programs with the intended communication approach. There are four checklists: General Education Inclusion Readiness, Interpreted/Transliterated Education Readiness, Captioning/Transcribing Readiness, and Instructional Communication Access. These checklists can be used in combination or independently, depending on the student and the purpose of the review. The General Education Inclusion Readiness Checklist may be used to evaluate overall readiness for inclusion in the general education classroom and is appropriate for most students. The Interpreted/Transliterated Education and the Captioning/Transcribing Readiness Checklists identify skills that students...
## Summary of Social Interaction (Pragmatic) Development / Theory of Mind

<table>
<thead>
<tr>
<th>Chronological Age</th>
<th>Theory of Mind Development (Based on information from Teresa Caraway)</th>
<th>Social Interaction, Conversation, Discourse (Selected skills from CASLLS)</th>
</tr>
</thead>
</table>
| **6 – 9 Months**  | - Calls to get attention  
- Shows face / acts shy  
- Reaches, extends arms to request | - Affectionate to familiar people  
- Begins directing others (pushes, pull, tugs)  
- Repeats actions that are laughed at  
- Resists removal of a toy  
- Vocalizes with gestures to (protest/reject; request object; request action; call; express feelings; notice/recognize; respond to others)  
- Uses play routines [give and take]  
- Responds appropriately to intonation and facial expressions  
- Takes first conversational turns |
| **10 – 12 Months** | - Children understand that people have intentions:  
  - Begin to try to communicate their wants  
  - Revolution in how toddlers understand the social world  
  - Joint attention  
  - Social referencing - looks to adult for “advice” | |
| **12 – 15 Months**| - Imitates other children  
- Initiates routines  
- Uses more words in turn-taking  
- Uses words to (protest/reject; greet/call; respond to others; label/notice; request object/action; express feelings/wants) | |
Speech-Language Pathologist’s Role with Students who are Deaf/deaf or hard of hearing

• Work collaboratively with school district’s nurse and audiologists

• Have an understanding of the SC DHEC issued recommendations on school-age hearing screenings

• Have an understanding of the Americans With Disabilities Act (ADA)
Speech-Language Pathologist’s Role with Students who are Deaf/deaf or hard of hearing

• Review the complete history of the student medical profile

• Ask about any history of ear infections and/or visits to an Ear Nose Throat Physician (ENT)

• Listen to parent(s) concerns
Are You a Part of the Team?

• Are you sitting at the table when students are referred for RTI/MTSS? Think about this process where you work?
• Are you providing speech-language services without having results of the hearing screening?
• Be prepared to voice concern if your school or district does not follow the recommendations from the SC DHEC.
Are Students Screened for Hearing Deficiencies Early?

SC does not mandate school-age hearing screenings...only recommendations.

SCDHEC states,

“School nurses, working collaboratively with the school district’s audiologists and speech-language pathologists, should organize and implement hearing conservation programs, provide hearing screening according to the SCDHEC School Screening Recommendations, and provide annual hearing screening evaluations for student receiving special education services.”
In a 2001 study, 654 apparently healthy speech-language delayed children underwent a thorough audiological assessment for determination of their hearing thresholds. Eighty-seven children (13.3%) showed various degrees of hearing loss. Most of them (55 children, 8.4%) suffered from sensorineural hearing impairment, while in 32 children (4.9%) a conductive hearing loss was discovered. The increased prevalence of hearing impairment found in this population mandates a thorough hearing evaluation for every case of speech-language delay, even for those children who show no evidence of other handicaps. This will help in the early diagnosis of hearing loss, allowing proper management to be instituted as early as possible.

Signs and Impact of Hearing Loss in the School Environment

• Delayed speech and language skills
• Difficulty following directions
• Inappropriate responses to questions
• Poor academic performance
• Inattentiveness
• Poor behavior
Speech-Language Assessment

- Receptive language skills
- Expressive language skills
- Communication
- How is the student communicating
- Are there opportunities for communication  How is information being received and delivered (auditory, sign language, visually, touch)
- Articulation • Oral motor / Feeding • Social Communication / Interaction
Considerations for Assessments for Children with Hearing Loss

http://successforkidswithhearingloss.com/determining-service-delivery/
Best Practice for Speech-Language Pathologists

• Create an optimal listening environment

• Audition might be the child’s best modality for learning / instruction

• Provide numerous opportunities for communication with teachers and peers
Best Practice for Speech-Language Pathologists

• Continue to offer a variety of opportunities to practice with different communication modes

• Provide a peer buddy who learns the student’s cues during interactions

• Set up the environment to meet all of the student’s needs
Best Practice for Speech-Language Pathologists

• Train support staff to identify cues and how to respond to subtle cues

• Offer consistent support and training for staff

• Ensure all needs of the student are being met within the classroom or ensure regular consultation is available
Best Practice for Speech-Language Pathologists

• Advocate for the student’s needs across all developmental areas

• Be careful not to label the student simply by the classroom environment they are attending

• Collaborate with professionals and paraprofessionals involved in habilitation/education program of the student
Levels of Support

1. Core Instruction
2. Targeted Individual Support
3a. Intensive Services - DHH
3b. Intensive Services - Deaf Plus

Intensive Individualized Services
- Performance more than 2 years delayed
- Individualized academic instruction required for foundational skills and scaffolding
- Access accommodations
- Expanded core curriculum
- Transition planning includes life skills
- Services usually provided by TDD or in conjunction with a specialist in the student's disability area

Targeted-Individualized Services
- Performance within 1-2 years of grade level
- Individualize instruction supports the general education curriculum (e.g., pre-post teaching & scaffolding)
- May include some expanded core curricula areas
- Special instruction and services, usually by TDD with push-in model
- Access accommodations

Sustaining Performance
- Performing at or above grade level
- Focus on access accommodations and supports
- IEP or 504
- Consultation/monitoring from TDD, educational audiologist, or SLP

Presented by Cheryl D. Johnson during 6/22/12 webinar hosted by the Educational Audiology Association and Audiology Online: Essentials of Practice Management for Educational Audiologists.
The IEP Team

The educational team should understand how the student's hearing loss impacts his/her ability to function in a typical classroom setting and in the school environment as a whole.

The educational team should know how each student is able to use his/her hearing and how listening with understanding varies in different school environments for each child with a hearing loss. Neither the audiogram nor the use of a hearing aid and/or cochlear implant alone is a concrete indicator of how the student is able to use his/her hearing for understanding discourse. It is important to assess each student's ability and use of amplification (hearing aid or cochlear implant), rather than make assumptions based on degree of hearing loss. Program design should reflect the needs of the student in different settings.

Related factors that will affect a student's listening performance are:

• degree, type and configuration of hearing loss;
• etiology of hearing loss;
• age of hearing loss onset;
• consistent use of amplification;
• level of functional listening bene
• fit from either a hearing aid or cochlear implant; and
• well-maintained ALDs, if used (e.g., frequency modulation, or FM, systems, sound field systems, inductive loops)
• From Meeting the Needs of Students Who are Deaf or Hard of Hearing: Educational Services Guidelines. http://www.nasdse.org/publications-t577/meeting-the-needs-of-students-who-are-deaf-or-hard.aspx
IEP Components

• Consideration of Special Factors
  – The student has communication needs
  – The student needs Assistive Technology devices or services

• PLAAFP
  – Student’s Academic and Functional Needs
  – Impact of Student’s Disability
IEP Components

• Accommodations and Modifications
  – List the type(s) of accommodations, if any are necessary for the student to make progress in the general curriculum and participate in extracurricular and other nonacademic activities
  – Explain the special instructions for the accommodations and/or modifications

• Normal School Year Services
  – Provide the category, service, location, provider, start and end date, direct/indirect, and amount of time/frequency
  – Explain specific directions, considerations, delivery methods, other related services, and supplementary aids and services
Accommodations and Modifications Checklist

IEP/504 CHECKLIST: ACCOMMODATIONS AND MODIFICATIONS FOR STUDENTS WHO ARE DEAF AND HARD OF HEARING

Name: ____________________________  Date: ____________________________

Note: Accommodations provide access to communication and instruction and are appropriate for 504 or IEP services; modifications alter the content, the expectations, and the evaluation of academic performance and are generally provided through an IEP as part of specialized instruction. This checklist contains many supports and services that should be reviewed to comply with IDEA Special Factors (34CFR300.324(2)(i-v).

**Personal and Assistive Hearing Technology Accommodations**

- Personal hearing instrument (hearing aid, cochlear implant, bone anchored, tactile device)
- Personal hearing assistance technology (HAT) (hearing aid + HAT)
- HAT only (without personal hearing instrument)
- Classroom sound distribution system (CADS)

**Assistive Technology Accommodations**

- Videophone or Text Phone
- Alerting devices
- Other ____________________________

**Communication Accommodations**

- Priority seating arrangement:
  - Ensure student’s attention prior to speaking
  - Reduce auditory distractions (background noise)
  - Reduce visual distractions
  - Allow student time/assistance to locate speaker in small or large group setting
  - Enhance speechreading conditions (avoid hands in front of face, mustaches well-trimmed, no gum chewing)
  - Present information in simple, structured, sequential manner
  - Enunciate speech clearly
  - Allow extra time for processing information
  - Repeat or rephrase information when necessary
  - Frequently check for understanding
  - Use speech to text software (speech recognition)
  - Provide interpreting (e.g., ASL, signed English, cued speech, oral)

**Physical Environment Accommodations**

- Noise/reverberation reduction (carpet & other sound absorption materials) reANSI s12.60
- Special lighting
- Room design modifications: ____________________________
- Flashing fire alarms/smoke detectors

**Curricular Modifications**

- Modified reading assignments (shorten length, adapt phonics-based instruction)
- Modified written assignments (shorten length, adjust evaluation criteria)
- Extra practice
- Pre-teach, teach, post-teach vocabulary, concepts
- Strategies to adapt oral/aural curriculum/instruction to accommodate reduced auditory access
- Supplemental materials to reinforce concepts of curriculum
- Alternative curriculum
- Expanded core curriculum:
  - advocacy/self-determination
  - audiology (understanding hearing loss and resulting communication accommodations, technology options [HAT, connectivity])
  - assistive technology
  - communication/pragmatic language
  - Deaf studies
  - disability rights
  - functional skills
  - family education
  - listening skill development
  - ASL/sign language
  - social-emotional skills
  - transition planning

**Evaluation Accommodations & Modifications**

- Reduce quantity of tests
- Alternate tests or methods
- Reading assistance with tests for clarification of directions, completion of test

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IEP Components

• Least Restrictive Environment
  – Removal Justification

• Meeting Participants
  – Ensure that all necessary members that have knowledge of the student who can provide student’s data are invited
Speech-Language Pathologist’s Role with Students who are Deaf/deaf or hard of hearing and the Development of Communicative Competence

According to the document *Knowledge and Skills Required for the Practice of Audiologic/Aural Rehabilitation*:

SLPs providing services to individuals who are deaf or hard of hearing should have knowledge of and skills that include, but are not limited to, the following areas of expertise (ASHA, 2001):

- Normal communicative development and the effects of hearing loss on communicative development
- The assessment of communicative skills and intervention with individuals with hearing loss; and
- The prevention of communicative issues
ASHA Code of Ethics

When in doubt of your duties, remember SLPs must also abide by the ASHA Code of Ethics, including Principal of Ethics II Rule A:

“Individuals who hold the Certificate of Clinical Competence shall engage in only those aspects of the professions that are within the scope of their professional practice and competence, considering their certification status, education, training, and experience.”

Educating Students Who Are Deaf or Hard of Hearing: A Guide for Professionals in General Education Settings

Early Intervention Network: Supporting Linguistic Competence for Children Who are Deaf or Hard of Hearing

Factor 3: Early exposure to accessible language through sign is beneficial to language acquisition.

The evidence supporting Factor 3 centers on: 1) the benefit of using visual language to establish early timely language foundations and minimize language delay, 2) the beneficial role of sign language in the development of spoken language, and 3) the potential of hearing families to acquire the competence to facilitate their child’s development of visual language.