



We are Zebra Experts!

Recognizing the Needs of Zebras in a World of Horses

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Session Objectives

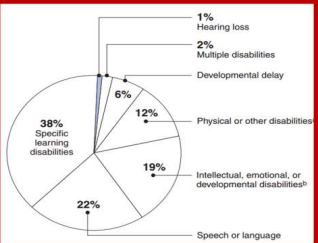


The participant will be able to:

1. Describe the analogy of zebras versus horses when considering the needs of children with hearing loss versus other populations of students.
2. Describe the differences in competencies between the roles of the teacher of the deaf/hard of hearing, speech language pathologist, and the special education teacher
3. Describe ways in which this knowledge can be used to advocate for appropriate student services.

HL ≠ LD with Hearing Aids

Hearing loss is rare – only 1% of kids with IEPs have hearing loss as the basis of learning needs



Category	Percentage
Specific learning disabilities	38%
Speech or language	22%
Intellectual, emotional, or developmental disabilities	19%
Physical or other disabilities	12%
Developmental delay	6%
Multiple disabilities	2%
Hearing loss	1%

38% specific learning disabilities

22% speech/language

19% intellectual, emotional or DD

<http://www.gao.gov/new.items/d11357.pdf>

If you've seen one child with hearing loss you've seen **one child with hearing loss!**

– There are some vulnerabilities in common but actual learning issues can be very different, especially with variations in early ID & early intervention outcomes.

Hearing Loss is Invisible



Hearing loss looks like other learning issues

"When you hear hoof beats, they are usually horses and not zebras."

- Hearing loss is not a disorder, like LD or language disorders
- Hearing loss is not an attention disorder, like ADHD or ASD
- Hearing loss is not a cognitive disorder, but academic delays and some functional classroom issues are common
- Hearing loss can LOOK like every one of these issues.





Students with Hearing Loss truly are ZEBRAS!
We need to advocate for our 'Zebras'!



"He hears just fine." Classroom Teacher Study

- Study said...half of teachers thought hearing loss and academic problems were not linked.
- Teachers accused students of daydreaming because they participated inconsistently. Teachers 'knew' the child could hear.



Study by Ross, Brackett, and Maxon 1991

But his speech is great!!!

- Age appropriate speech and language at age 3 is a triumph of the hard work and dedication of the family and EI providers
- A good start does not *inoculate* a child from developing learning gaps in the future



Hearing Loss is **not** the same as other Special Education populations

Hearing loss is an **ACCESS Issue** creating barriers to learning in the typical classroom environment and impacting social interactions.

This *invisible* barrier is why it is necessary to consider functional performance in the classroom across situations



CUMULATIVE learning gaps due to incidental learning/overhearing deficits

Access issues are discrimination issues



Hidden Barriers
Noise and distance is just as much a barrier to a student with hearing loss as a narrow doorway is to a student in a wheelchair.

We live in challenging times....

- Because of early diagnosis of hearing loss, better amplification and early intervention, fewer students are signing AND more have abilities 'within normal' at school age (*this is good but misleading*)
- The typical result of early intervention is language performance at low average – standard scores of 85-88 rather than 100
- Hard of hearing students are often ignored or their needs are minimized because they are not 'Deaf enough'
- Students are evaluated using the same tools that teams evaluate suspected learning disabilities or language disorders
- Expertise in hearing loss is often not sought on teams evaluating students with hearing loss



Effect Sizes as Means to Identify Appropriate Practices

What improves student achievement? Nearly all the things that teachers do! But only a few things work to ensure that students **gain a full year's worth of growth** for a year of enrollment in school.

Just maturation and attending school for a year have an effect size of **0.40**.

To be an truly effective an educational practice must have an effect size that **exceeds 0.40**

Examples of practices that have effect sizes less than 0.40

- Homework (effect size of 0.10 in elementary, 0.55 in high school)
- Teaching test taking (0.27)
- Grade retention (0.13)
- Ability grouping (0.17) vs mixed small group learning (0.49)
- Matching 'learning styles' with instructional style (0.17)
- Open vs traditional learning spaces (0.01)
- Whole language (0.06)
- Co-/Team-Teaching (0.19)
- Summer school (0.23)
- Mainstreaming (0.24)

What is learning?

*"The process of developing sufficient **surface** knowledge to then move to **deeper understanding** such that one can appropriately **transfer** this learning to new tasks and situations."*

- If tasks are too easy, students become bored. When they are too difficult, students get frustrated.
- There is a sweet spot for learning, but it differs for different students.
- A student only learns when work is moderately challenging that student, AND where there is assistance to help the student master what initially seems out of reach.
- Too vastly different from peers and they can become 'class mascots'

Levels of learning? **Surface – Deep - Transfer**

- Students are
 - first exposed to information to gain surface or general understanding.
 - they must acquire and then consolidate information.
- They then need to move their knowledge to deep learning
 - via interaction with the material
 - comparison to what is already known, and
 - integration into their knowledge base.
- **Without adequate surface-learning students cannot go deep**
- **Specific instructional routines, procedures, or strategies need to be **matched** with the appropriate level/phase of student learning.**

Levels of learning? **Surface – Deep - Transfer**

- Up to 90% of instruction can be completed by students using ONLY their surface-level knowledge
- **Mismatching an approach with the level of learning will not create the desired impact**

Levels of learning? **Surface – Deep - Transfer**

Mismatch examples

- **Problem-based learning** has an effect size of only 0.15 when it is used during the surface-learning phase
- Effect size of 0.61 during deep instruction
 - Students need to possess the knowledge needed to start to problem solve

Levels of learning? Surface – Deep - Transfer

Mismatch examples

- **Checking for comprehension** - recall questions tends to be the norm (54% of questions asked by teachers in gr 5/6)
 - When asked during initial reading of a text, comprehension questions interfere with the comprehension of the material **unless** the student had a high level of reading proficiency

Contrast example:

- Note-taking enhances surface level learning.
- Repeated reading or cloze reading enhances comprehension.

Levels of learning? Prior knowledge

- Prior knowledge is an excellent predictor of performance on new tasks. **Effect size is 0.65**
- Impact for students with hearing loss
 - ‘Swiss cheese’ language
 - Reduced world knowledge due to limitations in effective exposure
 - Reduced audibility impacting early literacy skills most children develop naturally by age 4
- Add to this the impact of fragmented hearing, listening in noise, listening at a distance, fatigue, etc. - Less information is received.
- **WE CAN EXPECT THAT SURFACE LEARNING WILL TAKE LONGER FOR STUDENTS WITH HEARING LOSS THAN TYPICALLY HEARING PEERS.**

Levels of learning? Prior knowledge

- We need to assess prior knowledge in addition to vocabulary review
- **Routinely perform the cloze procedure:**
 - Select a passage, like end of chapter summary
 - For upper elementary and secondary use a 250-word passage and remove every 5th word
 - For younger or less developed students use a shorter passage and remove every 7th to 9th word
 - The student writes in the word s/he believes is the best fit for the meaning of the passage. The word must be an EXACT match to be counted correct:
- Independent level = 60% or more correct answers
- Instructional level = 40%-59% **Make the case re: impact of HL and increase precision of your teaching**
- Frustration level = 39% or below

Levels of learning? Phonological Awareness Instruction

- Phonics instruction establishes/strengthens the brain structures that links processing of the sounds of language with the long-term memory needed to sustain meaningful reading.

Phonics

- As automaticity with decoding improves, less cognitive space has to be devoted to decoding and attention can shift to comprehension
- **Teaching vocabulary, without sufficient phonological awareness will NOT develop the reading fluency needed to comprehend**

Levels of learning? Phonics & Vocabulary Instruction

- Phonological awareness needs to be assessed in depth for students with hearing loss (*TOPEL, Phonological Awareness Test – PAT*)
- **Direct teaching** (effect size 0.59) of the 12 phonological awareness subskills needs to occur when deficits are identified
- **Vocabulary review alone is likely insufficient**
 - Need to identify prior knowledge
 - Need to work on reading fluency
 - Need to integrate new vocabulary into growing web of knowledge
- Effect size of **classroom vocabulary growth** programs = 0.67

COMPREHENSIVE INTERVENTION FOR STUDENTS WHO ARE LEARNING DISABLED = 0.77. We can assume something similar for DHH students

- Direct teaching – **effect size 0.59**
- Classroom Vocabulary Growth Programs – **effect size 0.67**
- Comprehensive Intervention for LD Students – **effect size 0.77**



Levels of learning? Vocabulary Instruction

- Teaching vocabulary **will not** guarantee success in reading, just as learning to read words will not guarantee success in reading. However, **lacking either adequate word identification skills or adequate vocabulary will ensure** failure.
- Effective practices for teaching vocabulary: Students are taught to
 - Look inside the word or phrase for structural clues (syntax, roots, stems) **morphology – Roots/More Roots**
 - Look outside the word or phrase for contextual clues
 - Look further outside the word or phrase for resources

Do you routinely work on these with students?

Levels of learning? Self-Assessment

- Showing students near the beginning of a series of lessons what success at the end should look like is among the more powerful things we can do to enhance learning. i.e., Kool Kidz Vidz as a part of self-advocacy skill development (**Teacher Tools**)

I do not yet understand. I need coaching	I am starting to understand. I need coaching but want to try some on my own.
I understand! I make a few mistakes, so I'm working through those.	I understand very well. I can explain this to others Without telling them the answers

Levels of learning? Participation in the Classroom

- The Common Core Standards requires that each student be able to fully participate in classroom activities.
- Surface learners** are described as relying on memorization and are concerned about failure; therefore, they are **risk-averse**.
- Deep learners seek to interact** with content and ideas, and actively link concepts and knowledge across content.
- We can assume/generalize that students with hearing loss tend to be at the surface learning level longer than hearing peers.**
- Due to uncertainty with what has been said (fragmented hearing) in addition to 'spotty understanding' they are **less likely to participate**.
- Direct instruction to improve student participation is important!**

Levels of learning Impacted by Hearing Loss - Mainstream

Cooperative learning does **NOT** enhance learning **surface information**. It DOES engage students in moving from **surface to deeper** levels of learning.

Lack of access during group discussion and group work impacts deep learning.
(level of learning and rate)

Activity	Percentage
Front instruction	22%
Working individually	13%
Group work	22%
Interactive lessons	12%
Exciting activities	22%
Other	9%

Estimates indicate that group work and interactive lessons together comprise 34% of the day in a typical classroom (Feilner, Rich & Jones, 2016)

Levels of learning Impacted by Hearing Loss - Mainstream

Students who benefit most from classroom discussions are those who are **struggling to comprehend** text.

Students with hearing loss during class discussion:

- May have **less surface knowledge** to be able to benefit
- They may have a **greater need** to effectively learn from class discussion due to auditory fragmentation/comprehension issues

This further strengthens the need for effective use of FM, communication repair skills, self-advocacy skills and self-concept.

The teacher repeating key information is **not an equivalent substitution**.

'Zebras' really aren't the same as 'Horses'!

- Amplification does not restore normal hearing
- Student learning issues often occur beyond those **attributable to unequal access** to instruction due to poorer acoustic perception
- ‘Swiss cheese’ language and incomplete perception impact the **rate and level of surface learning**, resulting in students who are less prepared to move to deep learning phases of instruction
- Mismatch of instructional level with learning level of our students **can add to their slower overall rate of learning**
- We need to inform school staff of effective practices and the impact of hearing loss on resulting learning

EXPOSURE IN THE CLASSROOM $\neq$ SAME LEARNING RATE/LEVEL

A look at roles and responsibilities for persons providing services to students with hearing loss

Roles & responsibilities



Roles – DHHT vs Other School Providers

- There is no one resource that 'speaks for' teachers of the deaf/hard of hearing and their specific services
- There is no Scope of Practice which makes it easy for other fields to 'creep' into responsibilities of the DHH teacher
- Lack of role definition has made it challenging for teachers to easily respond to *"What do you do that is different from the...."*
- Few administrators are aware of the unique learning needs of students with hearing loss and the special training of DHH teachers
- Evidence-based practices are assumed to apply to every child, equally

We need to be able to advocate for appropriate services for students which includes advocating for our own involvement

Can his/her needs be addressed by the LD/SpEd teacher?

Resource Teacher (LD/SpEd) potential issues:

- Lack of experience working with HL due to low incidence
- Teachers tend to see hearing aids/FM as a cure all – “*They hear fine*”
- Lack of understanding of:
 - Difference between the sense of hearing and skill of listening
 - How language develops, interference of HL in developing language and how to break down to teach to specific gaps
 - Pragmatic language and link to social skills, ‘disclosure’ and self-advocacy
 - Why this kid with HL doesn’t learn like their last kids with HL
 - Classroom accommodations related to hearing loss needs
 - Link between decreased incidental language exposure and behavior
 - Why increasing academic gaps are NOT due to disordered learning. ETC!

Handout

[illegible]

This is general only! Roles vary district by district.

Individuals vary in knowledge and skill. May vary building by building

General Comparison Only. Does not reflect comorbidity

X= primary role, O= secondary, non-IEP 'teaching' role, *= special training

Example Activities / Responsibilities	Educator of the Deaf/Hard of Hearing	Educational Audiologist	Speech Language Pathologist ^a	Special Educator	Educational Interpreter
X = primary role, O = secondary role, i.e., providing relevant information, daily carryover, etc. = appropriate if specially training for educating students who are DHH has been received					
Observe classroom and school environments to evaluate communication access issues	X	X			O
Educate school staff about impacts of hearing loss and use of hearing technology	X	X	X*		O
Inservice classroom teachers about required daily monitoring of amplification	X	X			
Appropriately select, set, validate, manage implementation of hearing assistance technology	X	X			
Gather information to determine if amplification is fit optimally	X	X	X		
Teach student about use of amplification and troubleshooting malfunctions	X				O
Participate in eligibility evaluations, IEP and 504 team and review meetings to address access to classroom communication, social interaction, self-advocacy and education needs	X	X	X		X
Perform basic technology checks and respond to student reports of amplification malfunction	X	X	X*		X
Perform formal and informal assessment of access to classroom communication (i.e., FLEI)	X				
Collaborate regarding expressive/receptive preferences/abilities of students accessing via CART, interpreters, transliterators, auditory, etc.	X				X
Assess classroom acoustics, make recommendations to improve school listening environments	O	X			
Assessment of academic, communication, social self-concept issues related to hearing loss, including full evaluation identifying continuing areas of need when 'grades become okay'					
When possible, distinguish learning issues related to hearing status from learning or performance issues related to other conditions beyond hearing loss/deafness	X			O	O

Roles vary district by district. Individuals vary in knowledge and skill.

General Comparison Only. Does not reflect comorbidity
X= primary role, O= secondary, non-IEP 'teaching' role, *= special training

-Address gaps in (pre)literacy skills including phonological awareness auditorily or visually	X			X*	
-Develop comprehension abilities via use of context, morphology, figurative language	X			X	X
-Preview/review content vocabulary, making connections to enhance global knowledge base	X			X	X
-Teach to specific delays in the performance/comprehension of math, reading, writing	X				X
-Deliver modified instruction of all academic areas (consultative or in 1:1 settings)	X				
-Plan/provide general education teachers with appropriate teaching strategies	X				
-Program monitoring of development in growth of skills targeted by specialized instruction	X			X	X
-Address transition, including self-determination and advanced advocacy problem-solving	X				X*
-Oversee the use/performance of interpreters, CART providers, captionists, automated speech-to-text captioning, accommodations as appropriate	X				
-Support families of children with hearing loss including informing them of the child's abilities and limitations in hearing, education, social skills, use of amplification, etc.	X	X	X		

How can the following be performed in only a consultative role?
How can unique needs be met by a non-DHHT? Read on for more issues.

Possible issues considered based on the individual child which help to illustrate the importance of involving a teacher for the deaf/hard of hearing:

- Is there just one communication mode? More than one? Combinations of methods?
- How do the parents communicate with the child? How does the child communicate outside of school or with friends? Expectations for hearing technology?
- When was the child's hearing loss identified and amplification fit? Is hearing technology functioning? How many hours per day is it in use?
- How well do staff members recognize the impact of the hearing loss? Do they think the student 'hears just fine' despite data and performance illustrating otherwise?
- How does the student access inferential learning? What strategies are in place to ensure adequate exposure to information learned by others inferentially?
- Who are the student's current peers? (hearing kids? deaf or hard of hearing oral children? cueing children? deaf or hard of hearing signing children?)
- Has the student's ability to access information in the preferred mode of communication been measured objectively? How does access compare to peers?
- How does this student access information in noise? How does this student access information in a room with poor acoustics? Strategies used?
- What type of technology does this student use? Hearing aid? FM system? Cochlear implant? Teletypewriter (TTY)? Note-taking systems? Real time captioning?
- What is the back-up plan when communication breaks down, including malfunctioning equipment and/or absent/inadequately trained service providers?

A Word on Hearing Loss + Other Disabilities

- Opaki = part horse, part zebra, part?
- Hearing loss is invisible and is easy to disregard
- We need to be involved in planning appropriate educational services for our zebras and the opakis!

How can we use Zebras to Advocate?

1. Use your zebra clipboards and wear zebras proudly!
2. Talk about access – it is at the heart of developing zebra 'issues'
3. Be prepared to list specific learning challenges typically caused by hearing loss – have your "Why Involve" handout ready to share!
4. Be sensitive to effective practices and potential challenges with HL
5. Be prepared to describe the unique skills you bring to the team; why your services are most appropriate – have your 'Roles' handy
6. Be ready to address the potential result in outcomes if another professional without DHH training is providing needed services
7. Advocate for the **intensity** of services **needed** for the child to close gaps and to prevent further gaps from developing or compounding

Thanks to all of you
Zebra Experts for
listening and
ENJOY THE REST OF THE
CONFERENCE!

Hooray for Learning & Networking!