

# Meeting the Needs of Children who are Deaf and Hard of Hearing

THE EDUCATIONAL AND CLINICAL AUDIOLOGY  
CONNECTION

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Canadian Academy of Audiology  
October 2022

# Financial and Non Financial Disclosures

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Travel, hotel, and speaking honorarium provided by CAA

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22 plus years in the field

Employment in Ohio, USA

- Stark County ESC (13 years)
- University of Akron ( 2 years)
- Summit ESC (7 years and current)

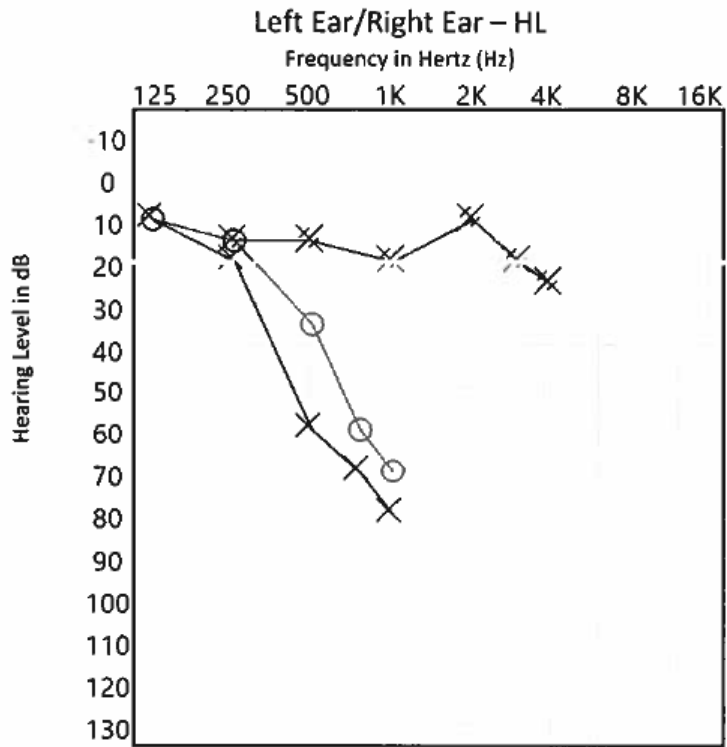
Presentations and Publications

Ohio Speech and Hearing  
Professionals Board

Educational Audiology Association,  
ASHA Fellow

[carries@summitesc.org](mailto:carries@summitesc.org)

June 2020: 6 months post op



#hearingspanglish.blog

Right Ear: unaided/hearing aid ear

Left Ear: unaided/CI ear

≠ CI thresholds





# Learner Outcomes

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- The learner will explain the importance of the collaborative role of the educational and clinical audiologist.
- The learner will describe two school based audiology assessments
- The learner will discuss two hearing technology and/or connectivity issues that must be communicated to effectively manage the child's unique communication needs.

# The Educational and Clinical Audiology Partnership



Approved by the Board of Directors  
of the Educational Audiology  
Association July 2010

Educational and clinical audiologists share in the responsibility of meeting the auditory needs of the children they serve. Effective communication between both audiologists requires a partnership that is fostered by trust and open consistent communication.

The partnership is necessary so that appropriate accommodations are effectively implemented to manage the child's communication needs. The partnership also demonstrates to parents that we share the same goals for their children. We work as a team to promote appropriate management and to resolve problems without placing parents in the role of messenger between the clinic and the school.

# Barrier Topics for the Educational and Clinical Connection

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- classroom acoustic considerations
- functional listening evaluations
- classroom communication profile
- hearing assistive technology
- peer connections.





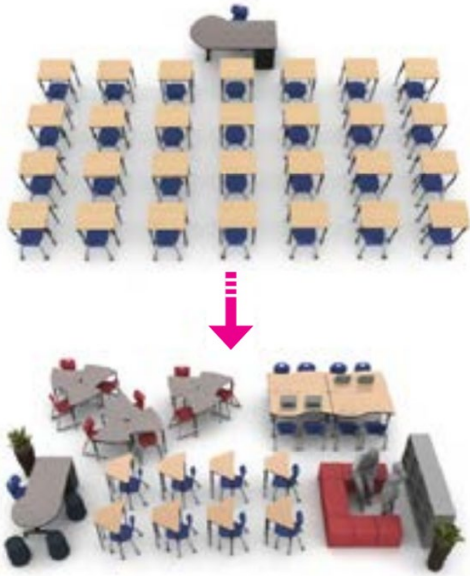
# Barrier #1

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Architects don't use their ears! Classrooms are far from soundproof environments.

How can Clinical and Educational Audiologists Partner?



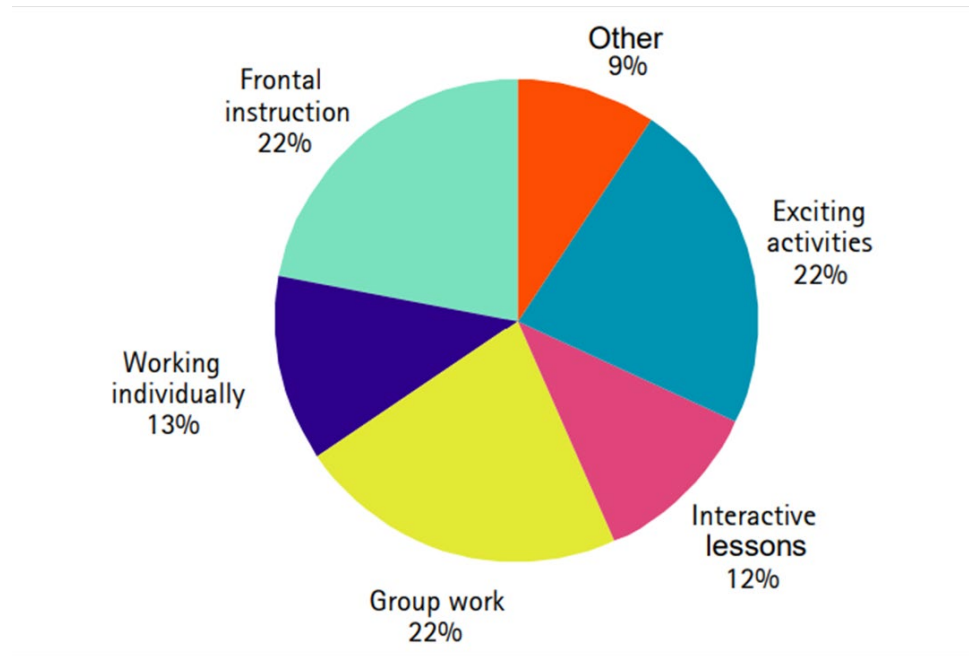


Active  
Personalized  
Collaborative  
Roomers and  
Zoomers

Artcobell (2021) Rethinking Classroom Learning  
Environments for the Future

# Today's Classrooms

# Acoustics of Learning



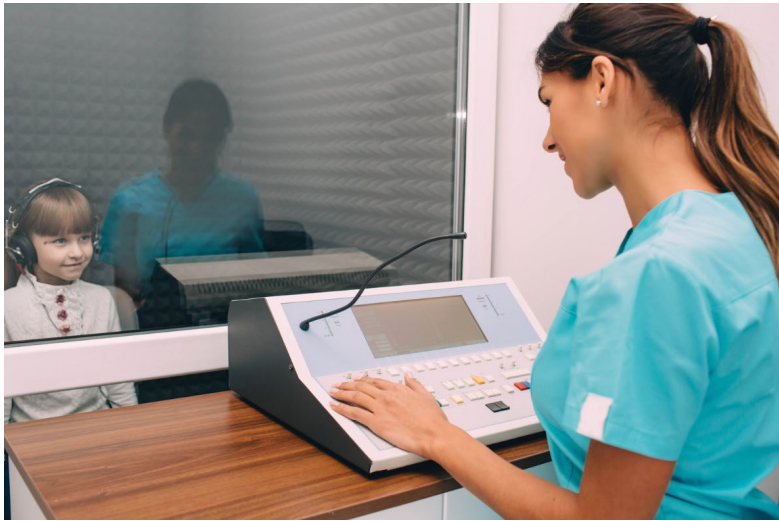
Feilner, Rich, Jones (2016) Phonak Insight

# Sound Booth to Classroom

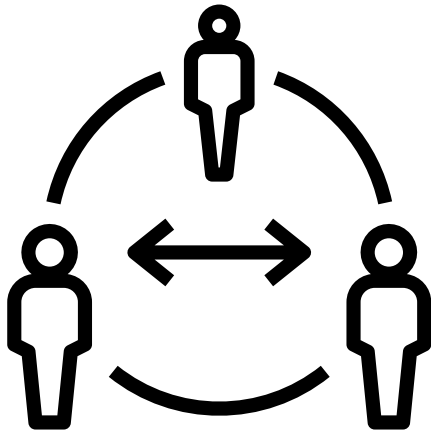
[9-12 years \(idainstitute.com\)](http://idainstitute.com)

# Booth to Classroom: Listening Demands

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# Apply Acoustic Properties to Classrooms



Critical  
Distance

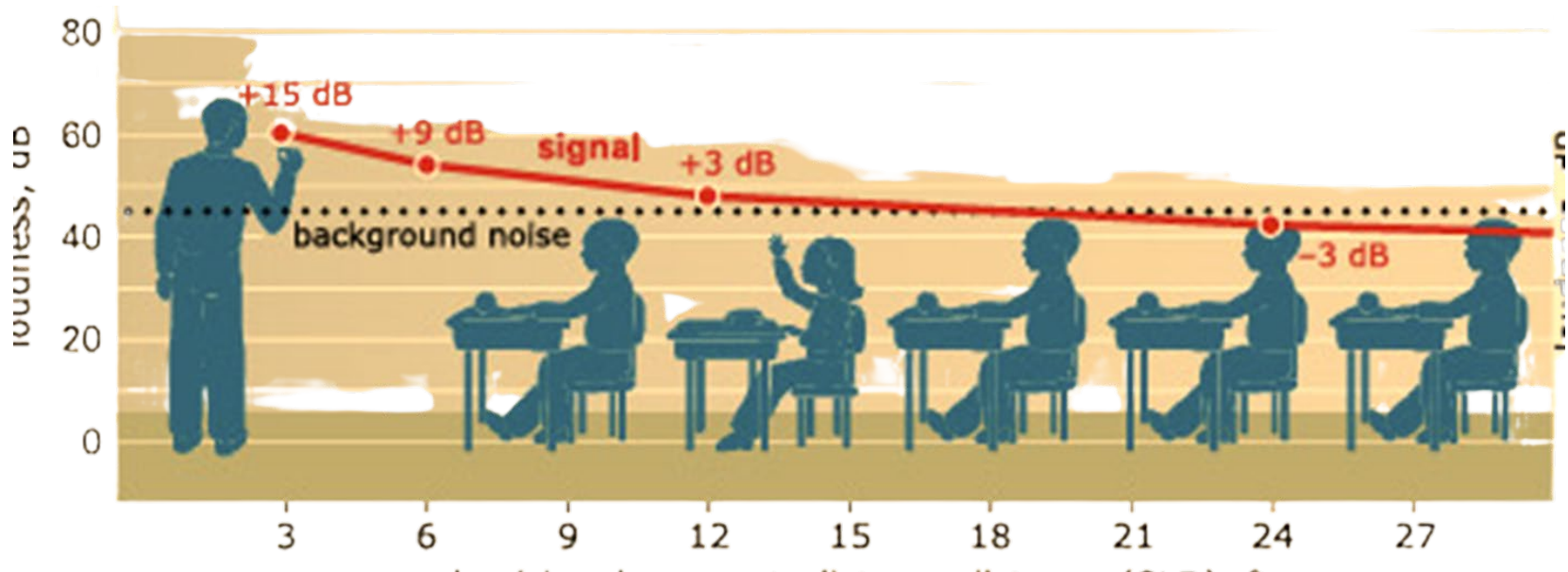


Noise  
Signal to Noise  
Ratio



Reverberation

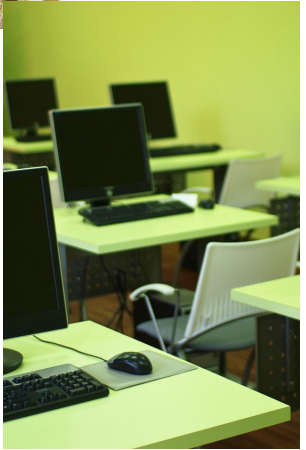
# Critical Distance



The Institute for Enhanced Classroom Hearing



# Noise







# Reverberation

I see some beautiful flowers.

Big dogs can be dangerous.

I like to go to school.

It is lunch time soon.

Your brother is not here.

Walk to the library now.

I want a peanut butter sandwich.

Increasing Reverberation Time



# Combined Impact

The farther the **distance**  
from the desired  
speaker, the more **noise**  
and **reverberation** will  
interfere with speech  
understanding and Brain  
Building





# Barrier # 2

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Its just mild. Going beyond the audiogram to advocate for services

How can the clinical and educational audiologist collaborate?



# Audiological Assessments Communication

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## CLINICAL

Complete pediatric battery

Ongoing assessments

SII

Hearing Aid, CI, Bone conduction fittings and verification

Speech discrimination and Speech in Noise (helps with HAT fittings)

## EDUCATIONAL

Outside the soundbooth

Functional listening in the classroom type environment

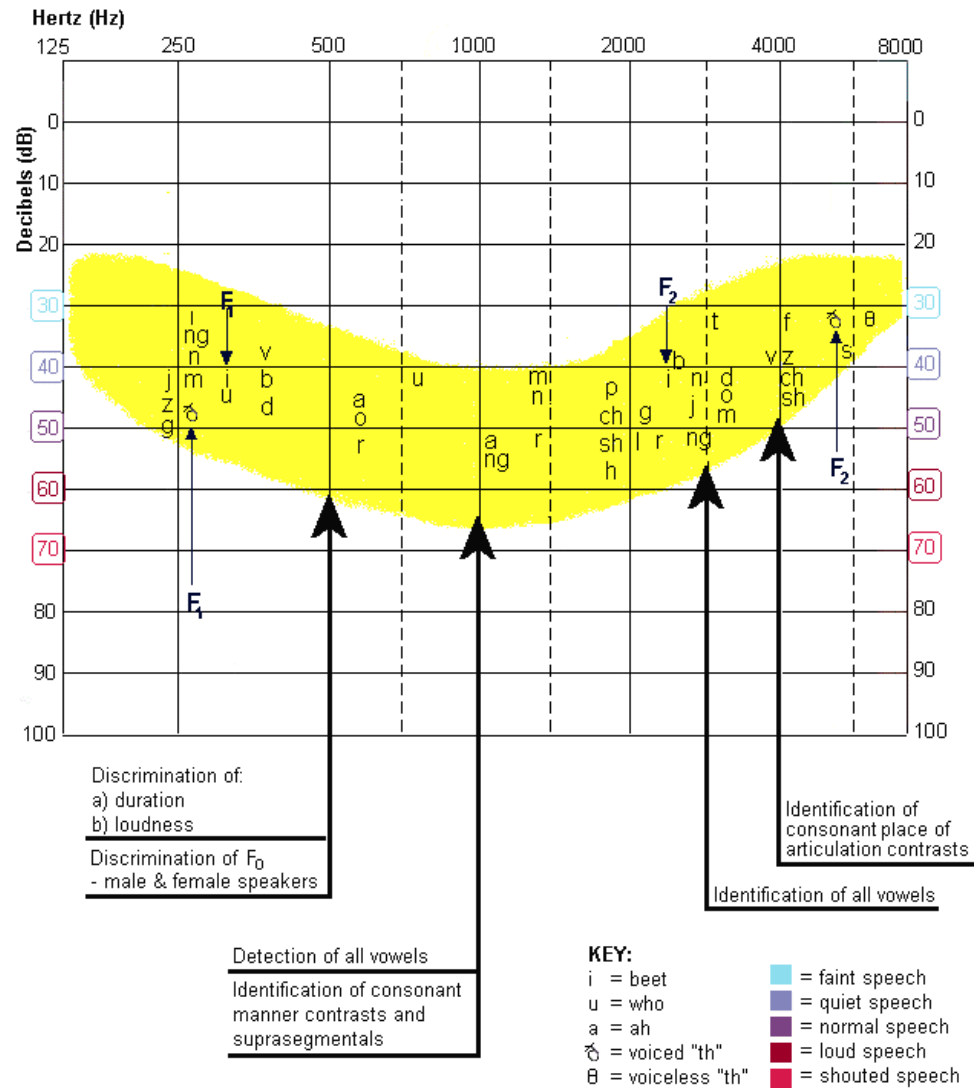
Auditory Hierarchy of Skills Assessment

Auditory Comprehension

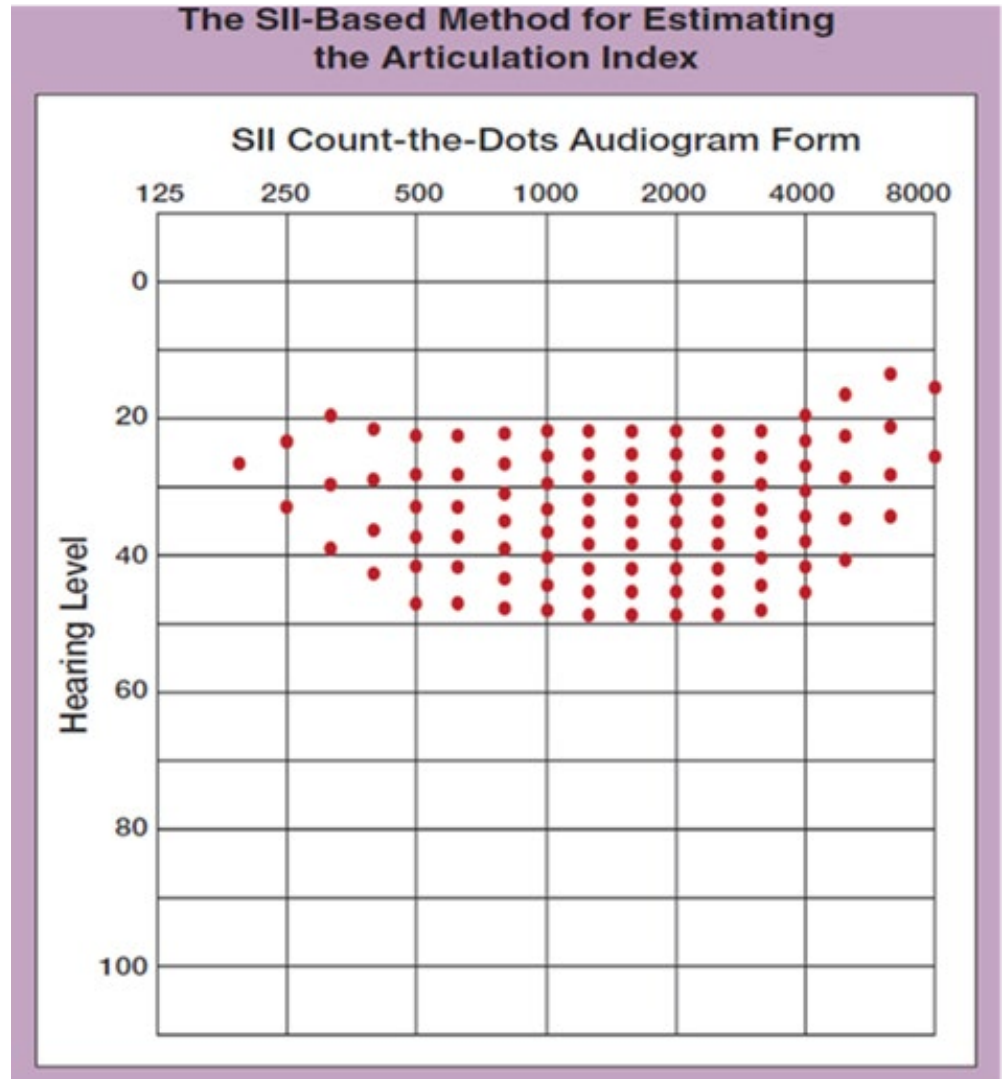
Listening Appraisals

Self Advocacy Development

# Foundation of Learning



Report the  
unaided  
and aided  
SII



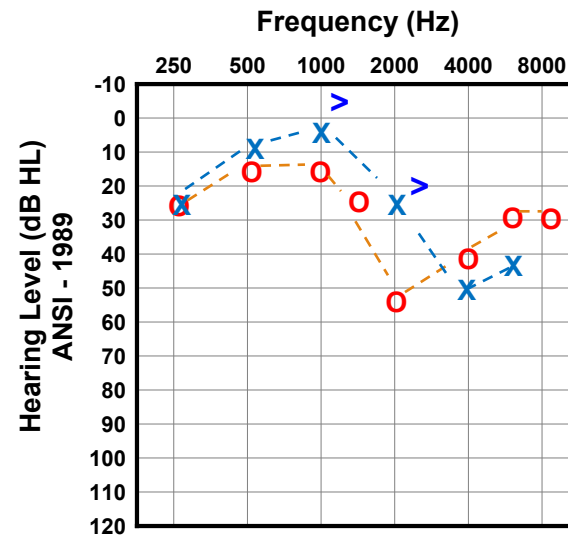
# Educationally Significant Hearing Loss?

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Would you recommend hearing aids?

What do you think her unaided SII is?

Left ear 4F PTA = 23 dB HL  
Right ear 4F PTA = 31 dB HL  
Unaided SII, left ear = ?  
Unaided SII, right ear = ?



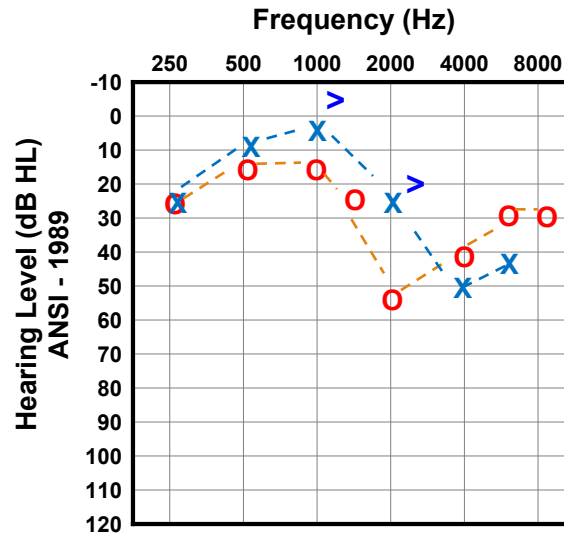
Used with permission Elizabeth Walker



# Candidate for amplification?

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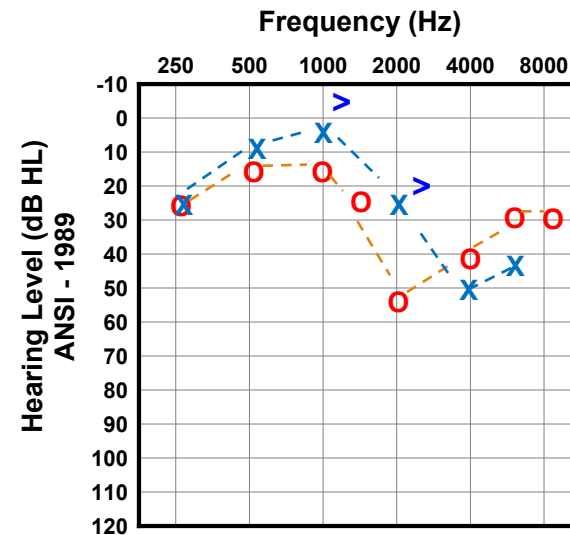
Left ear 4F PTA = 23 dB HL  
Right ear 4F PTA = 31 dB HL  
Unaided SII, left ear = 72%  
Unaided SII, right ear = 57%



# Candidate for amplification?

Left ear 4F PTA	Left ear unaided SII	Left ear aided SII
23 dB HL	72%	94%

Right ear 4F PTA	Right ear unaided SII	Right ear aided SII
31 dB HL	57%	85%



# Hearing Loss is Exhausting

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THIS IS WHAT DEAF  
OR HARD OF HEARING  
PEOPLE FEEL WHEN  
HEARING PEOPLE  
SPEAK TO THEM.  
  
IT IS HARD WORK.





# Barrier # 3

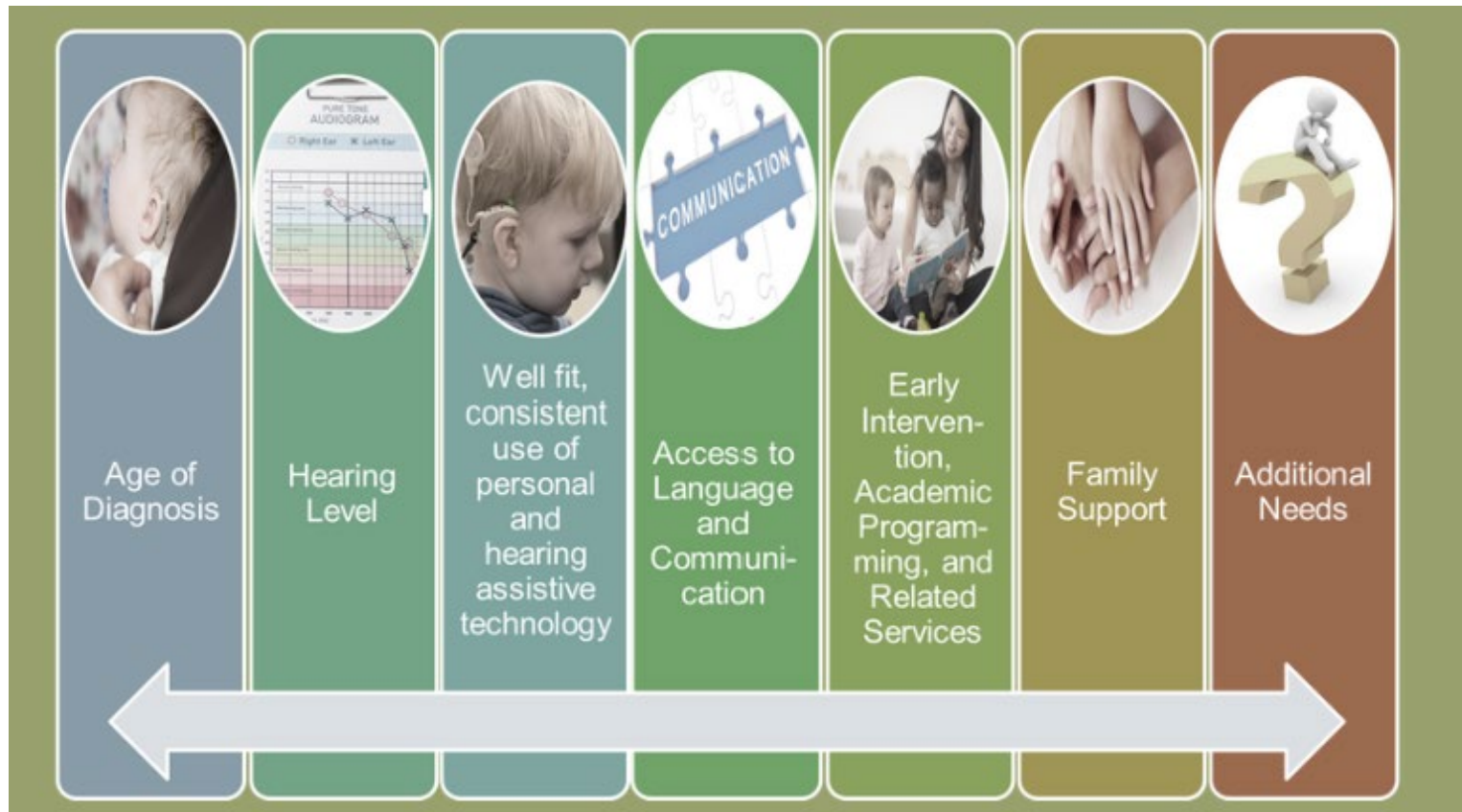
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I had “\_\_\_\_\_” in my class 5 years ago. All deaf kids are alike

How can clinical and educational audiologists partner



# D/HH Profile



# Classroom Communication Profile

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# Barrier # 4

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I have a loud voice. The student seems to hear me just fine

How can the clinical and educational audiologist partner



# Hearing Technology

Pediatric Friendly and  
School Friendly!!



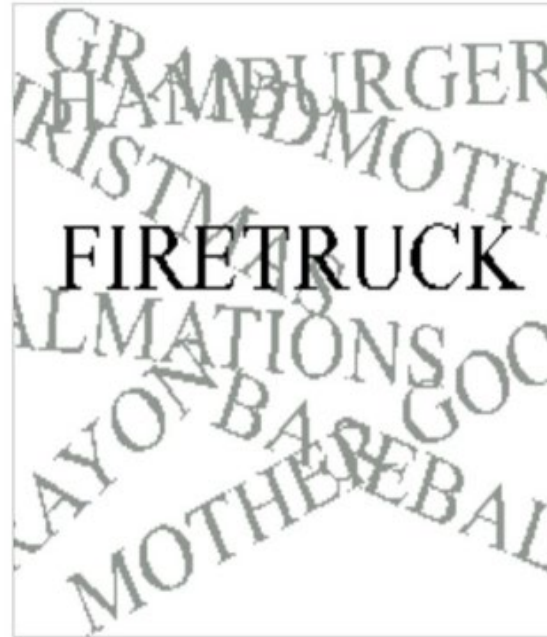
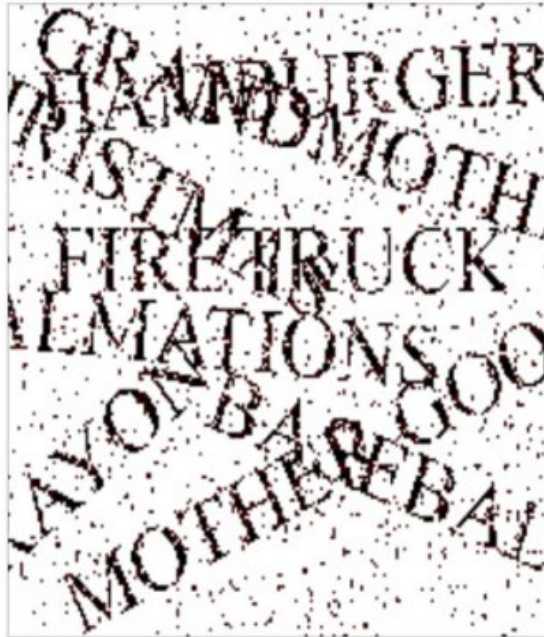
# Sound Booth to Classroom



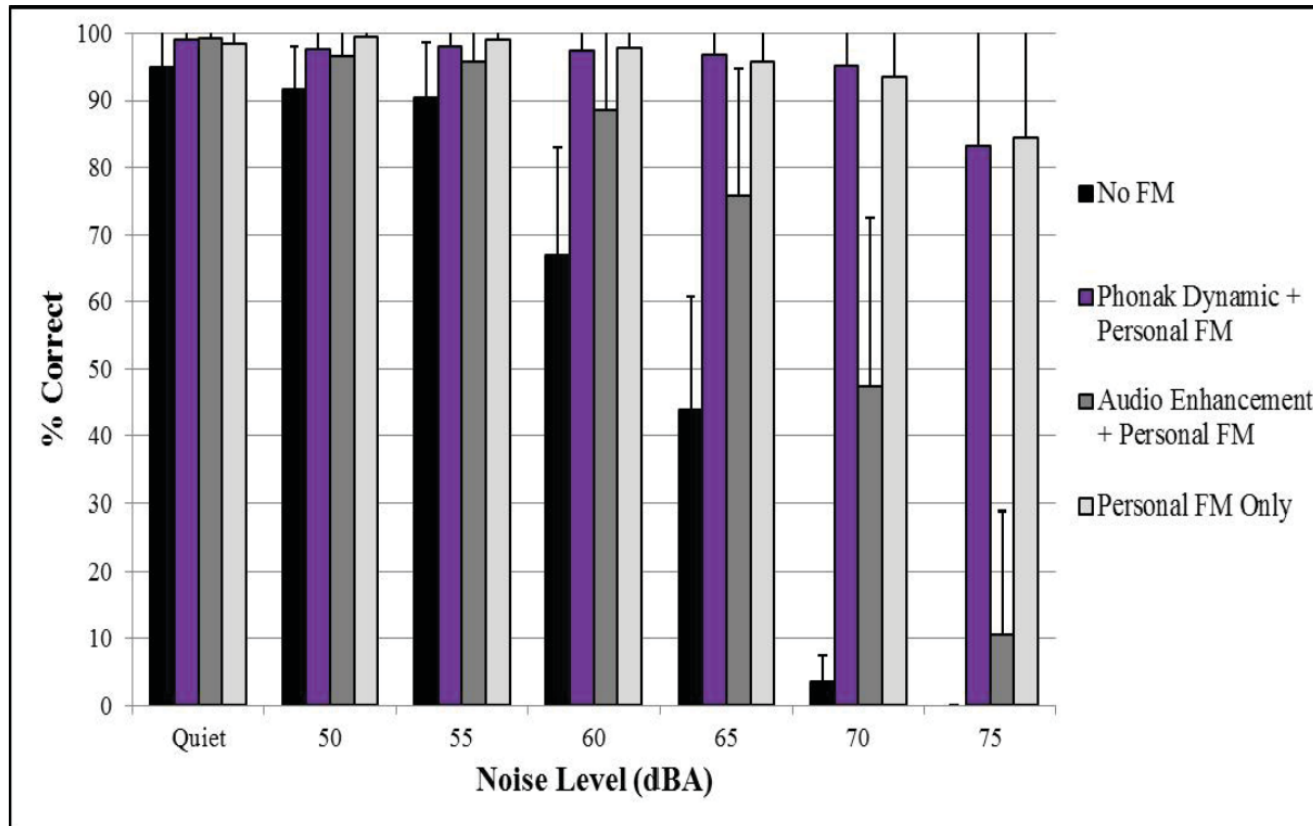


# Wear the Mic!

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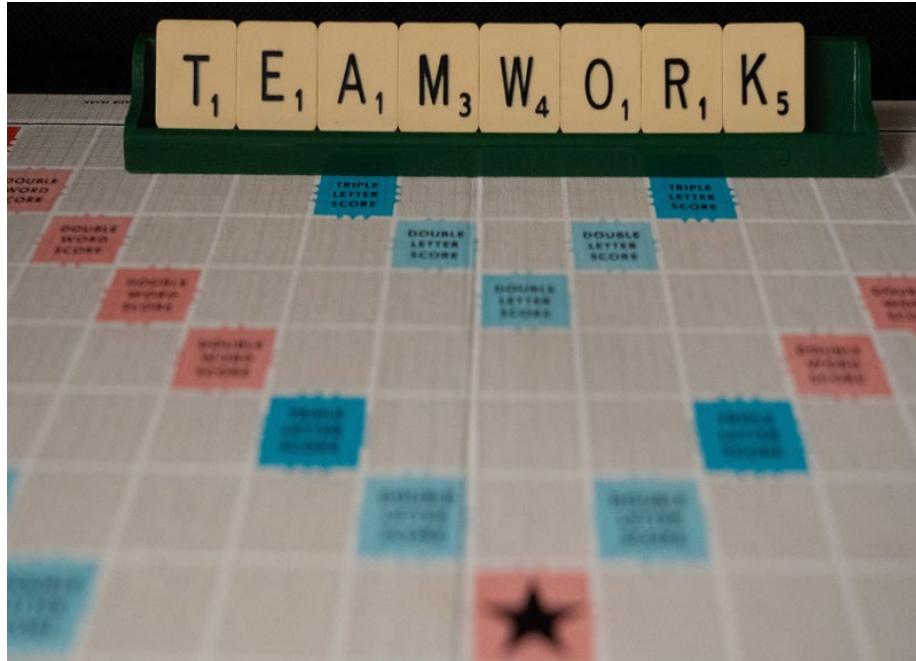


# Children NEED Improved S/N Ratio



**Figure 6.** Average speech-recognition scores across the noise conditions for children with hearing loss without and with the classroom audio distribution (CAD) and frequency modulation (FM) systems.

Wolfe, et.al  
(2013). Evaluation  
of Speech  
Recognition with  
Personal FM and  
Classroom Audio  
Distribution  
Systems. JEA.



# Barrier # 5

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There is no one else like me. No one understands me. I don't want to be different. I don't want to wear my hearing devices.

How can the clinical and educational audiologist collaborate





# Landscape of D/HH in the Schools

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80% of students with HL are educated in the mainstream setting

HL is considered a low-incidence disability

Result??? One and Only

Israelite, N, Ower J, Goldstein, G. Hard of hearing adolescents and identity construction: influences of school experiences, peers, and teachers. *J Deaf Stud Deaf Educ* 2002; 7(2):134-148



# Who am I?

- Self-Identity: who I am as a person?
- Deaf/Hearing Identity: how does my hearing status affect me?
- Learning and accepting who I am



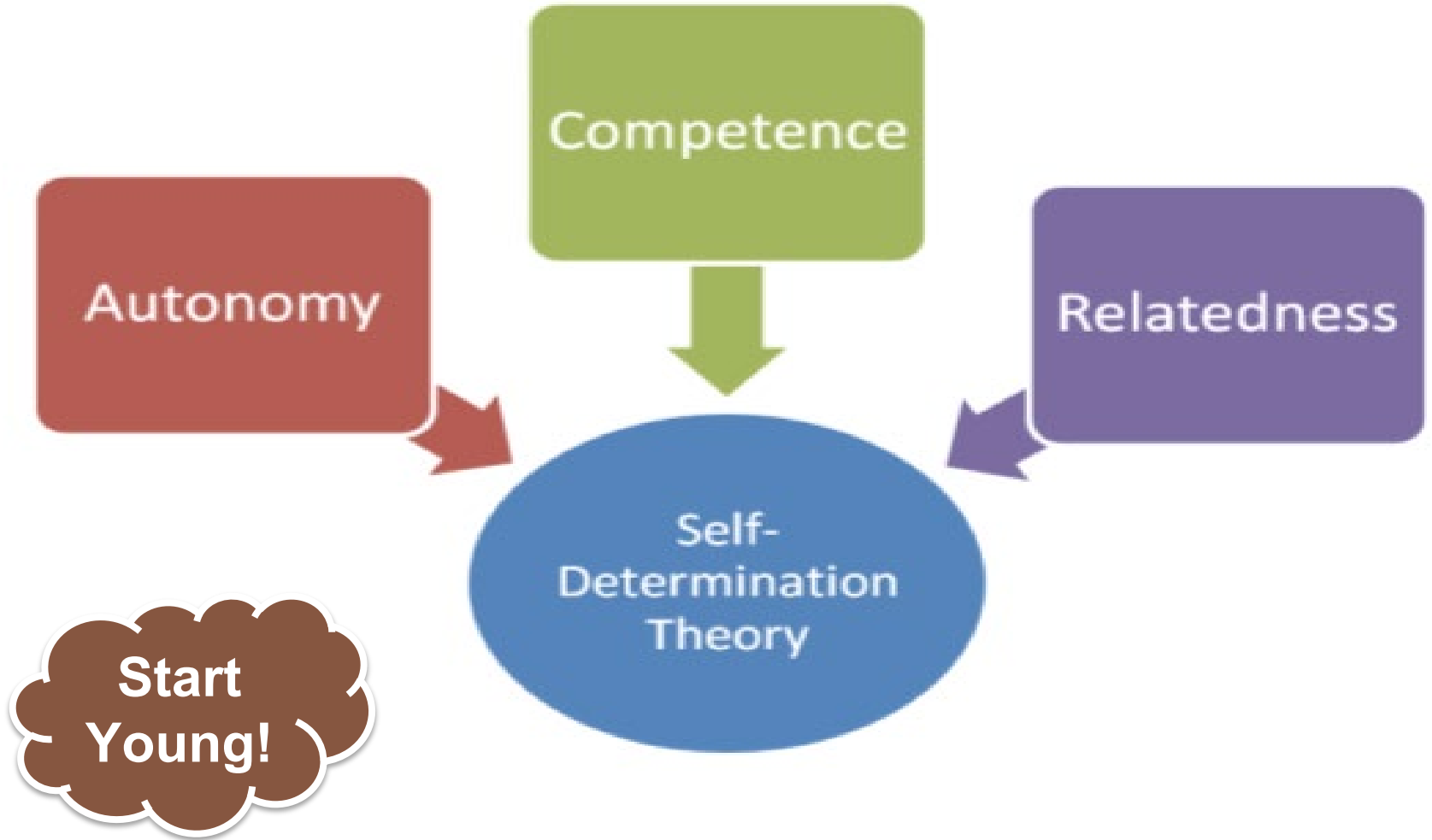
**Not ears**

**Not an audiogram**

**Not “nevermind”**

**Not “dumb”**

**Just a person like everyone else!**



# Ida Institute Tool: Growing Up with Hearing Loss

## New Environment

- Environment
- Social Demands
- Skills Needed
- My Challenges

## Inspired by Others Videos

- What points from video inspire me?
- What skills do I need to know more about?
- What is challenging for me?

## Am I Ready?

Questions to consider (Self-assessment)

Discuss answers with audiologist or someone close to me

**Develop New Skills** Practical suggestions on how to learn and grow

Key Areas:

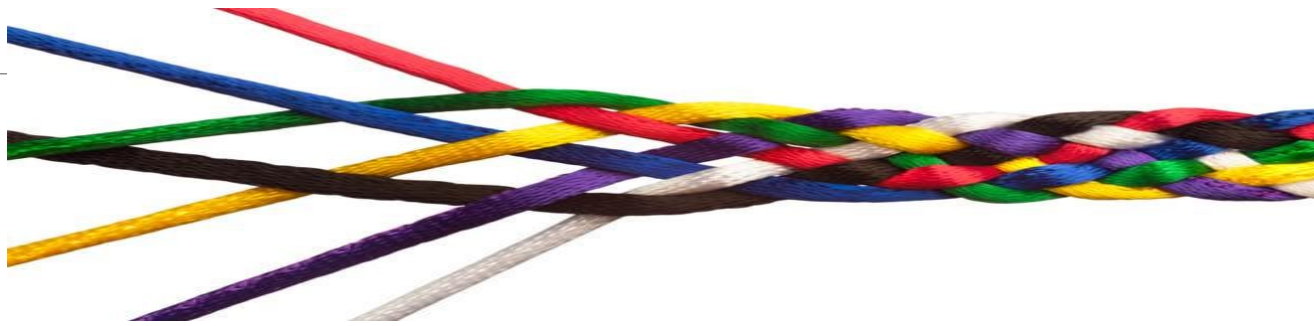
- Make choices
- Make decisions
- Solve problems
- Set goals
- Speak up for yourself
- Monitor & evaluate your own behavior
- Understand your own strengths & limitations

# Guide to Access Planning

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<https://www.phonak.com/us/en/support/children-and-parents/planning-guide-for-teens.html>



Opportunities that allow students to develop same-self connections and relationships in a relaxed and supportive environment, assists in the development of self-determination.

# My HEAR-O!

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# TAKING THE STEP TO CONNECT

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Be Flexible and Creative

Listen

Incorporate learning

Keep the door open

Suspend judgment as much as possible

Teamwork

Being invested in the end result

Support

Peer Mentors and Peer2Peer support







# Reflection

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**What was the most relevant thing you learned in today's presentation?**

**How will you apply what you learned today?**

