

What you need to know about student's hearing technology for classroom listening



Presentation developed by:

Gwen Severance, AuD & Patty Klein, AuD

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microphone ?
battery door ?
audioshoe ?
?
soundfield system

?
receiver
FM
transmitter ?
desktop system
Ling sounds
?

If only it were this easy.....



There's A LOT to cover!

- Types of Equipment we have to offer our students
- Listening checks – why and how to do them
- Troubleshooting Equipment
- Miscellaneous questions answered



Why **DO**
students with
hearing loss need
classroom hearing
technology?

What are some
benefits and
limitations?

Children with Hearing Loss Need ...hearing technology (personal or speaker systems)

- Any child in ANY situation with background noise
- Any child in ANY group situation
- Any child in ANY situation where they are receiving new information
- Any child in ANY situation where the speaker moves around the room
- Any child who has ANY distortion in their hearing
- Any child with a poorly developed language structure
- Any child who is listening in their second language

Why would some
students with
hearing loss
NOT
benefit from
classroom hearing
technology?



“Kid reasons,” not hearing reasons

- Student refuses to wear hearing aids so an ear-level personal FM cannot be used
- History of “losing” or purposely damaging hearing devices
- Lack of tolerance to wearing equipment (autism spectrum, cognitive delay, etc)
- Student excels academically with hearing aids alone and refuses to use an FM system
- Systems challenges for sound field FM or using a desktop system in secondary school





TYPES OF EQUIPMENT

**(the ones we have
to offer, that is...)**

Personal (ear level) technology



FM receivers that attach to the student's hearing aid or cochlear implant

FM Receivers



I Link Hearing Aid
(FM receiver built in)

M
FM
FM/M



MyLink Neckloop receiver
worn with a hearing aid or CI (works with a hearing aid's or CI's telecoil setting)



Phonak Extra Hearing Aid
hearing aid with FM receiver attached



Oticon Safari hearing aid
with FM9 audio shoe and mlxi FM receiver

Most Popular Brands of Hearing Aids for our kids:

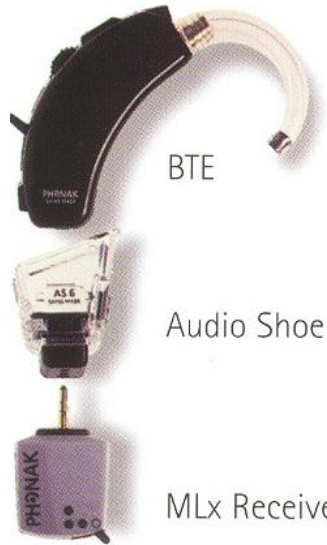
Phonak

Oticon

Siemens

Widex

Different models of hearing aids need different kinds of audio shoes.



BTE

Audio Shoe

MLx Receiver

AND,

Most hearing aids need to be programmed for FM+Mic in order for the FM system to work.

How do you know what kind of hearing aid a student has?



Most have a label somewhere on the hearing aid that tells you the make (brand) and model.

If it's a Phonak, it's going to need a new battery door to accommodate the audio shoe!

- An audiologist will have to do this
- And, you'll need verbal permission from the parent first



Types of Transmitters for ear level technology

Campus SX



EasyLink and EasyLink+



Inspiro



TX2

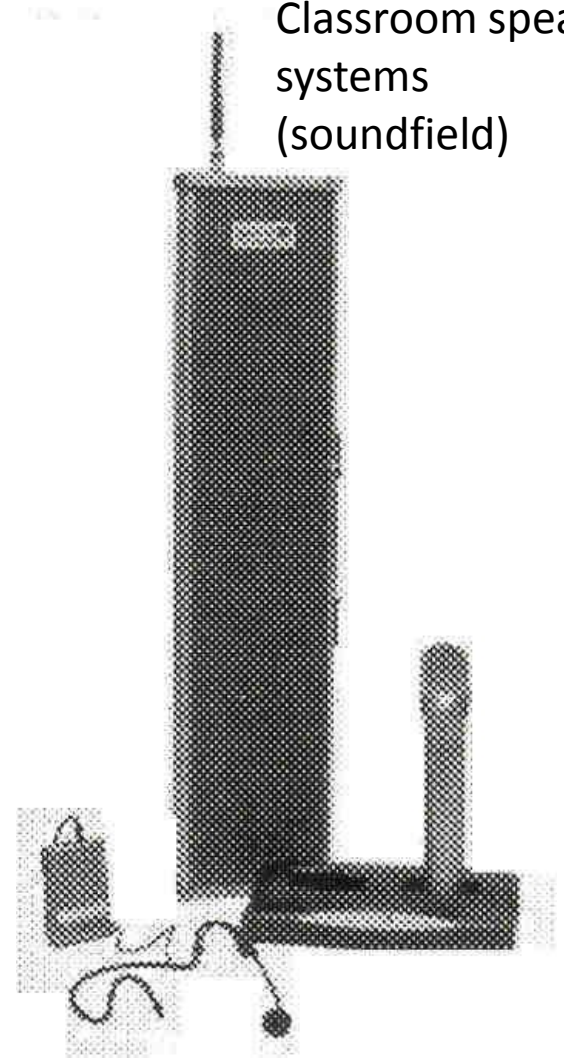


Other types of classroom technology

Easy Listener and Amigos (for one student)



Classroom speaker systems (soundfield)



Desktop Tatable
(for one-two students)





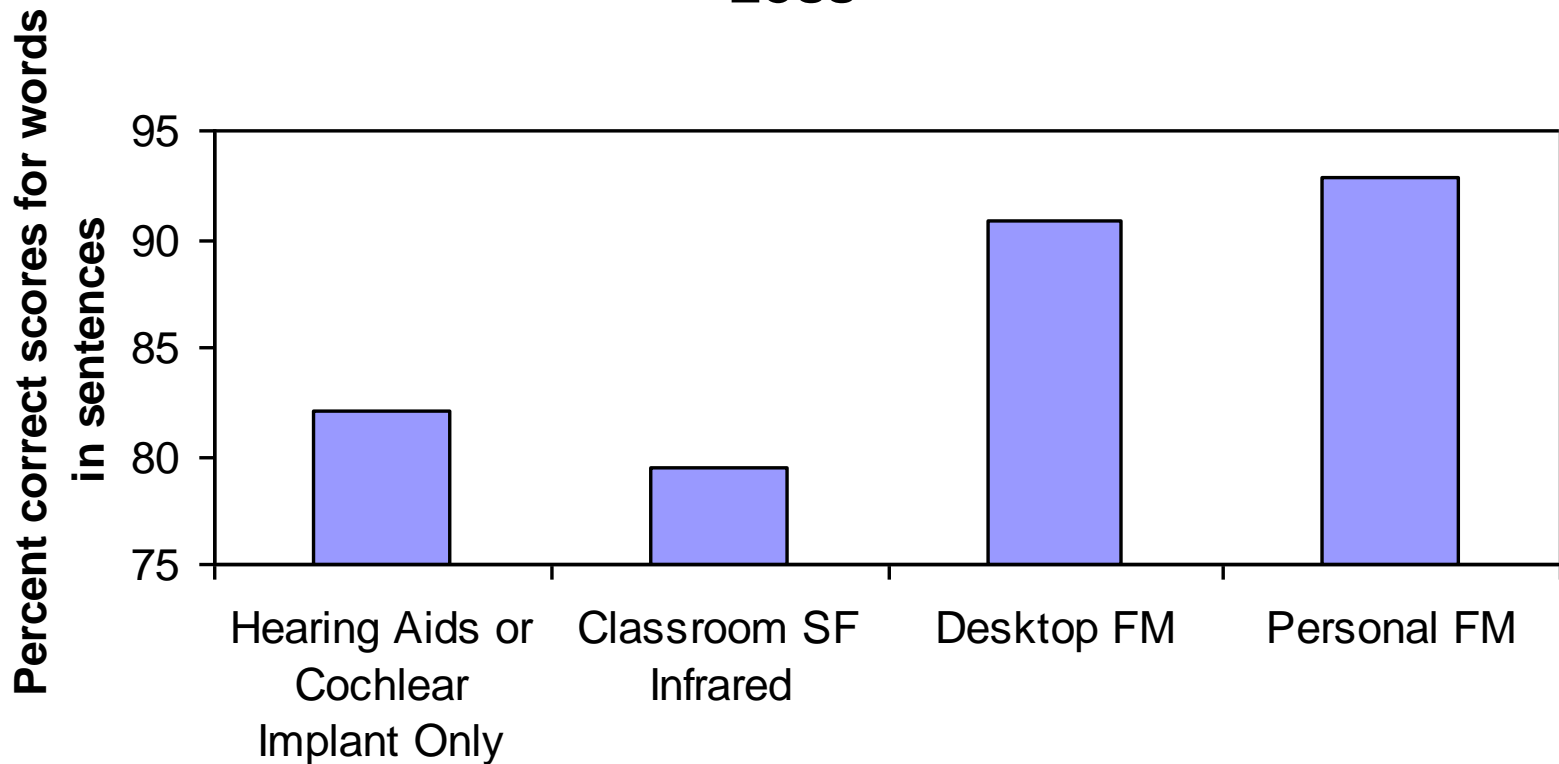
What is (usually) the most preferable kind of classroom hearing technology equipment to use?
Why?



Sizing up classroom hearing technology



Speech Recognition of 28 Children with Hearing Loss



Distance from the teacher's mouth to the student's ear makes a big difference!

- The farther the student is from the desired speaker the more noise and reverberation will interfere with speech understanding.



VS



**So, if your student shows up
with his first pair of hearing
aids, or gets new hearing
aids.....**



**What's the first question that
should cross your mind?....**

Would FM work for this student?



And,

Do I need to request anything
different
from the audiologists?

Listening checks



Why bother?

- Ensure that the speech signal the child is receiving is clear
- Alert you to malfunctioning equipment
- Properly functioning amplification is essential to the success of any student with hearing loss!

Access denied is opportunity denied!



Oh yeah....and it's the LAW!



*IDEA, 34 CFR 300.303

*Requires schools to “ensure that the hearing aids worn by children with hearing impairments...are functioning properly.”

*HOWEVER.....

The law does not state the frequency with which monitoring should occur.

Supplies Needed:

Batteries



Blower



Battery Tester



Stethoscope
or listening tube



Wax pick

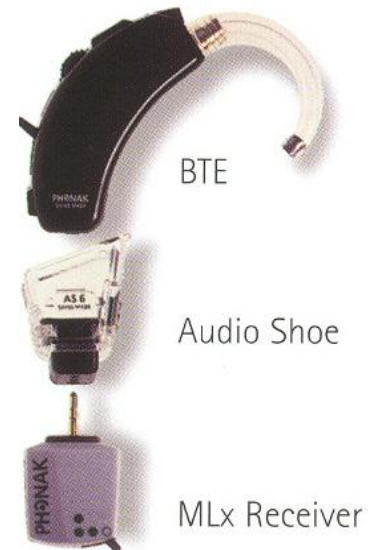




Hearing Aid / FM Quick Check

Each Morning

- The easiest, *quickest* way to check the equipment...
...listen to the hearing aid with the earmold, the audioshoe and FM receiver (little cube with the 3 prongs) attached to it.
- Leave the transmitter(teacher's mic) turned off for this step



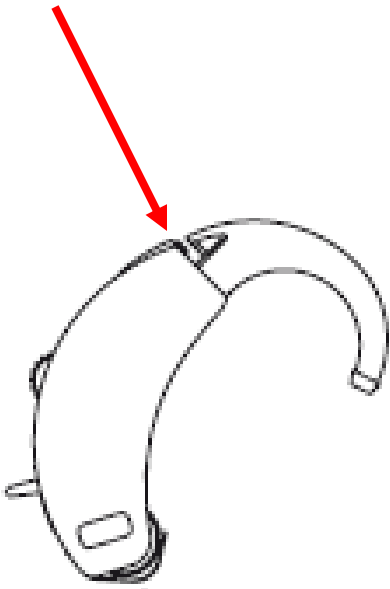
- Can you hear your voice when the FM mic is turned off? (if so, the aid is working)
- Can you hear your finger rub when the FM mic is turned on? (the FM is working)

(if no sound... change the battery... the battery may be powerful enough to run the hearing aid but not powerful enough to run the hearing aid AND the FM)

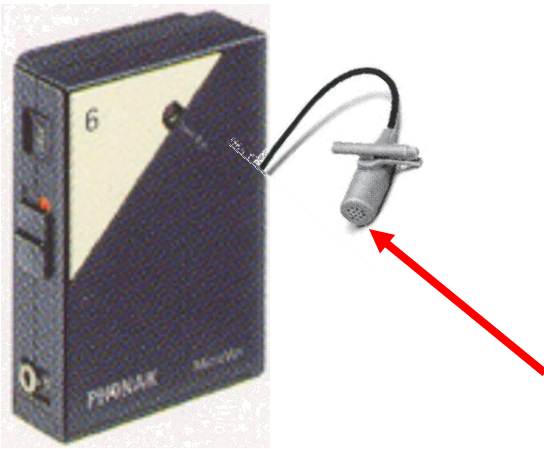
- Say the Ling six sounds... oo, aw, ee, sh, s, m
 - Do they sound clear?
 - You're done!



Another Tip



**Can you hear your finger rub
across the hearing aid's mic?
(the aid is working)**



**Can you hear your finger rub
across the FM mic?
(the FM is working)**



Troubleshooting



Does the hearing aid
amplify sound when it's
turned on?

Does the hearing aid
sound as loud as you
expect it to?

Does the hearing aid amplify
sound consistently?
(Does the sound cut in and out?)

Is the quality of the sound okay?
Is there static or distortion?



Does the hearing aid amplify sound when it's turned on?

If not –

- Make sure it's in the “on” position
- Check/Change the battery
- Look for blockage in the earmold or tubing



Does the hearing aid sound as loud as you expect it to?

If not –

- Check/Change the battery
- Look for blockage in the earmold or tubing
- Listen to the hearing aid without the earmold



Does the hearing aid amplify sound consistently? (Does the sound cut in and out?)

If not –

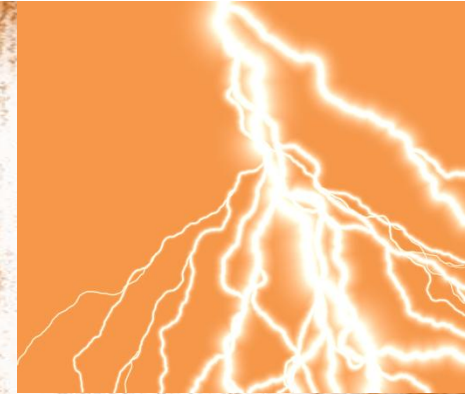
- Check/change the battery
- Check the battery compartment and FM contacts for corrosion



Is the quality of the sound okay? Is there static or distortion?

If not –

- Check/change the battery
- Check the battery compartment and FM contacts for corrosion



**Listen to the hearing aid as you say
the Ling sounds (ah, ee, oo, mm, sh, s)
Do the they sound clear?**

If not –

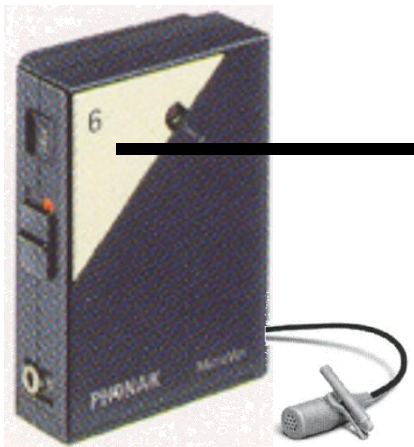


- Check/change the battery
- Check the battery compartment and FM contacts for corrosion

It still doesn't work.....now what?



Is the transmitter on the right channel?



And, is the battery fully charged?

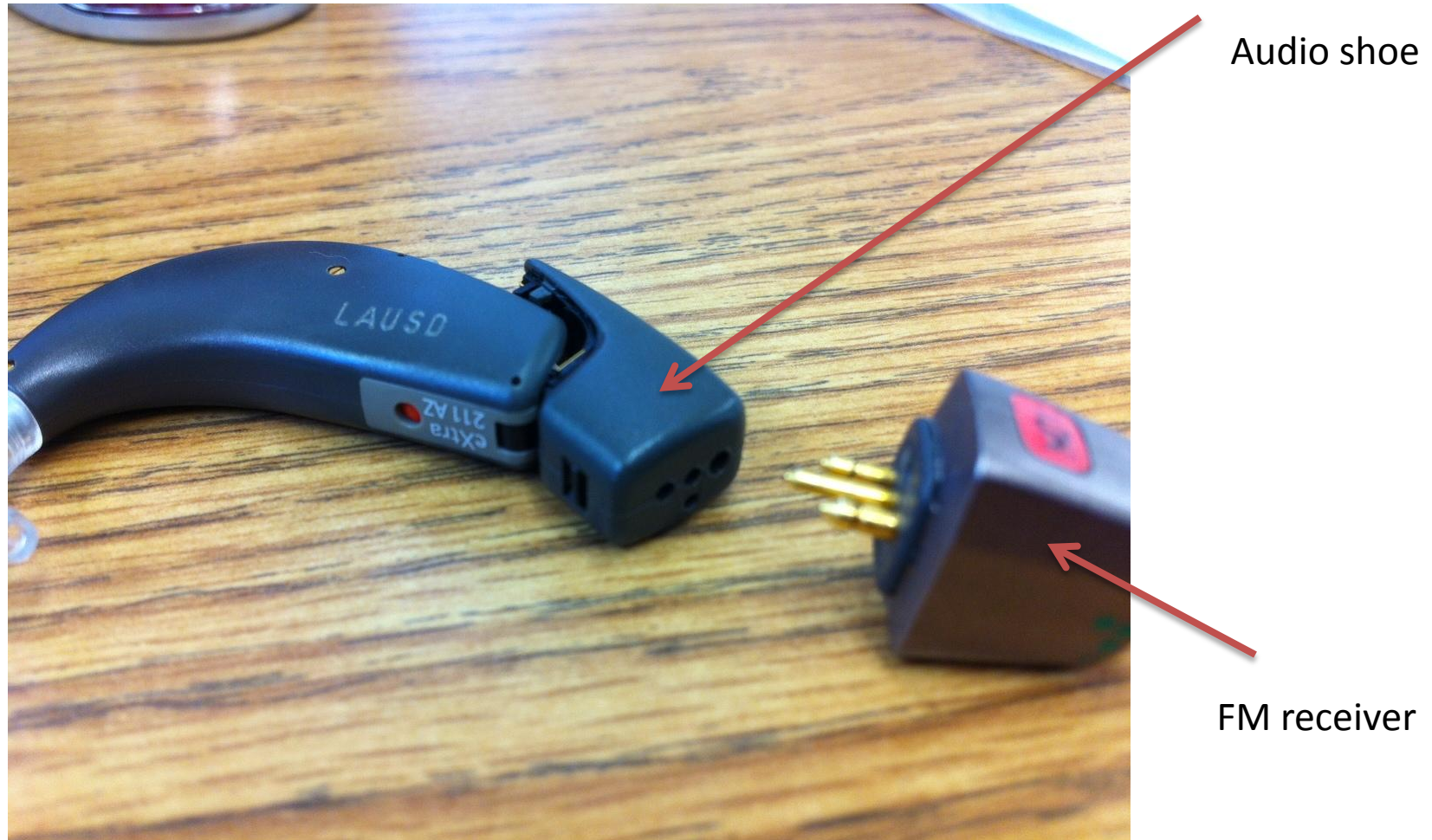
Are the contacts on the audio shoe dirty or broken?



Sometimes, the contacts have tiny bits of dust or grime

They can easily be cleaned by rubbing a pencil eraser over the contacts, or by cleaning with an alcohol prep pad

Are the FM receivers attached to the hearing aids?



(Remember to call each piece the right name)

- Is the toggle on the FM receiver in the correct position?
 - Put the MLX cube switch to the two dot position (FM + mic)
 - Turn on the FM mic (teacher's transmitter)
 - Rub your fingernail across the teacher's mic and *listen* for the FM to pick it up

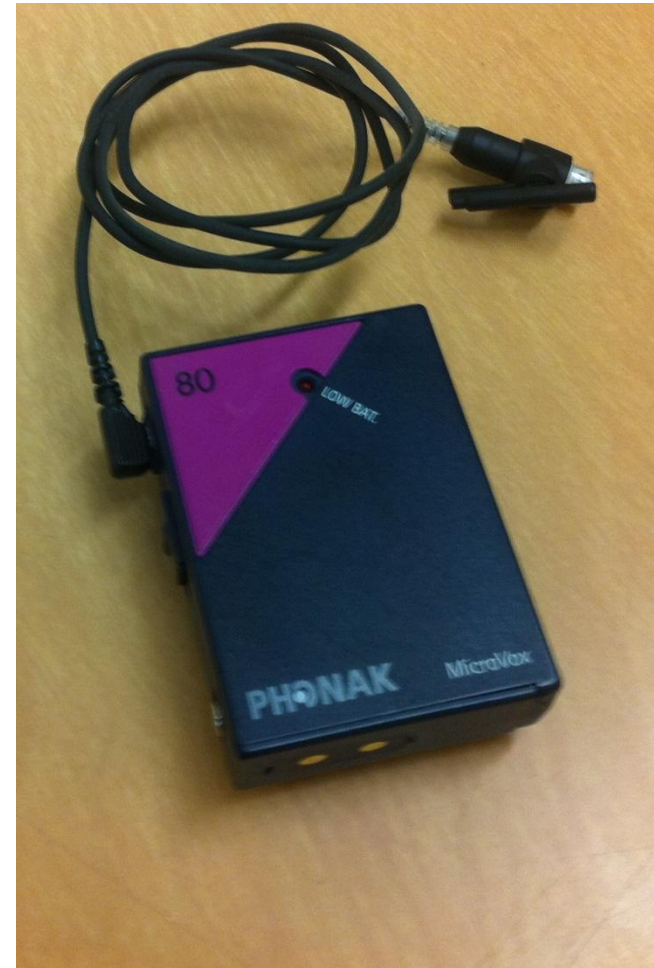
FM + mic

FM only

HA only (FM off)



Are the cords in good shape and plugged in completely?



And sometimes, it's just broken!!



Thanks to Gwen Severance, AuD
& Patty Klein, AuD for developing this
presentation and sharing it with
others!

- References:
- http://www.txsha.org/_pdf/Convention/2010Convention/Wickesberg,%20Jennifer%20-%20Do%20You%20Hear%20What%20I%20Hear%20A%20Hands%20on%20Tutorial.pdf