A Guide to the Functional Listening Evaluation

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Course Materials:

Video Acknowledgement: Mandy Longo at The Resource Materials and Technology Center for the Deaf/Hard of Hearing (RMTC-DHH), St Augustine, FL (FLE-2016); these videos are no longer available at RMTC-DHH.

FLE Background

FLE: Background

- Developed in 1993 in response to IDEA functional evaluation requirement by Johnson & Von Almon
  - 34 CFR 300.6 Assistive technology service includes
    - (a) an evaluation of the needs of a child with a disability, including a **functional** evaluation of the child in the child's customary environment
  - 34 CFR 300.304 Evaluation "a variety of assessment tools and strategies to gather relevant **functional**, developmental, and academic information about the child including information provided by the parent"

- Based on suggested paradigm by Ying (1990), and Ross, Brackett, and Maxon (1991)

What is the purpose of the FLE?

- To identify factors affecting classroom listening
- To identify a student's listening and comprehension ability under various classroom listening conditions
- To provide evidence for accommodations (HAT, acoustical treatments, communication strategies, sign support) and services (counseling, HA/HAT orientation and training, teacher in-service)
- To increase teacher implementation of recommended accommodations
- To evaluate and validate the effects of accommodations and supports on classroom listening

What does the FLE contribute to a student's ability to function in the classroom?

- Informs accommodations that are needed
  - Seating position
  - Visual input
  - Access to teacher's instructions
  - Access to peers
  - Use of hearing or other assistive technologies
- Instruction: Informs classroom communication management strategies for teacher
- Student: Self-determination/self-advocacy
  - implications of various auditory and visual communication access challenges (A-V)
  - Provides evidence for adopting self-advocacy strategies for communication access

Why is auditory access important?

- Most students use audition to communicate and access instruction
- Hearing aids and CIs do not mitigate the problems of classroom listening
  - Audibility may improve but not intelligibility in adverse listening situations
  - +15- 20dB SNR improvement is needed for most students
  - Hearing Assistance Technology (HAT) can overcome many listening factors only if implemented correctly and consistently
- Output (e.g., learning) is only as good as the input (e.g., instruction)...and the *access* to the instruction

Assessment

1. Is the child ready/able to learn in the classroom learning environment under consideration?
2. Is the learning environment ready to accommodate the student?

Student
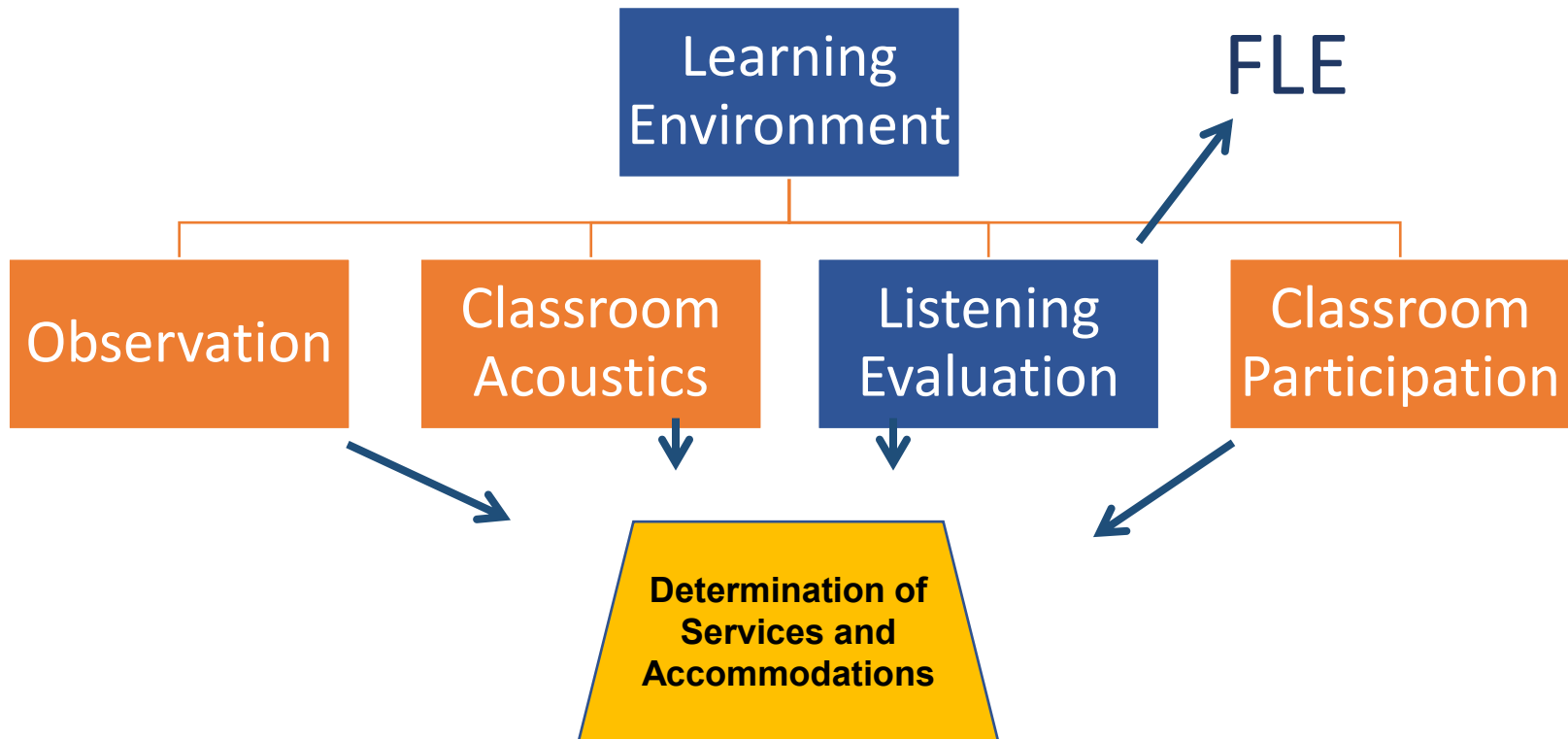
Learning Environment

Factors Affecting Classroom Listening

Internal
- Attention
- Motivation
- Familiarity with vocabulary and content
- Audibility & Speech Perception

External
- Noise
- Distance
- Visual Access
- Lighting
- Seating
- Instructional Strategies used by Teacher
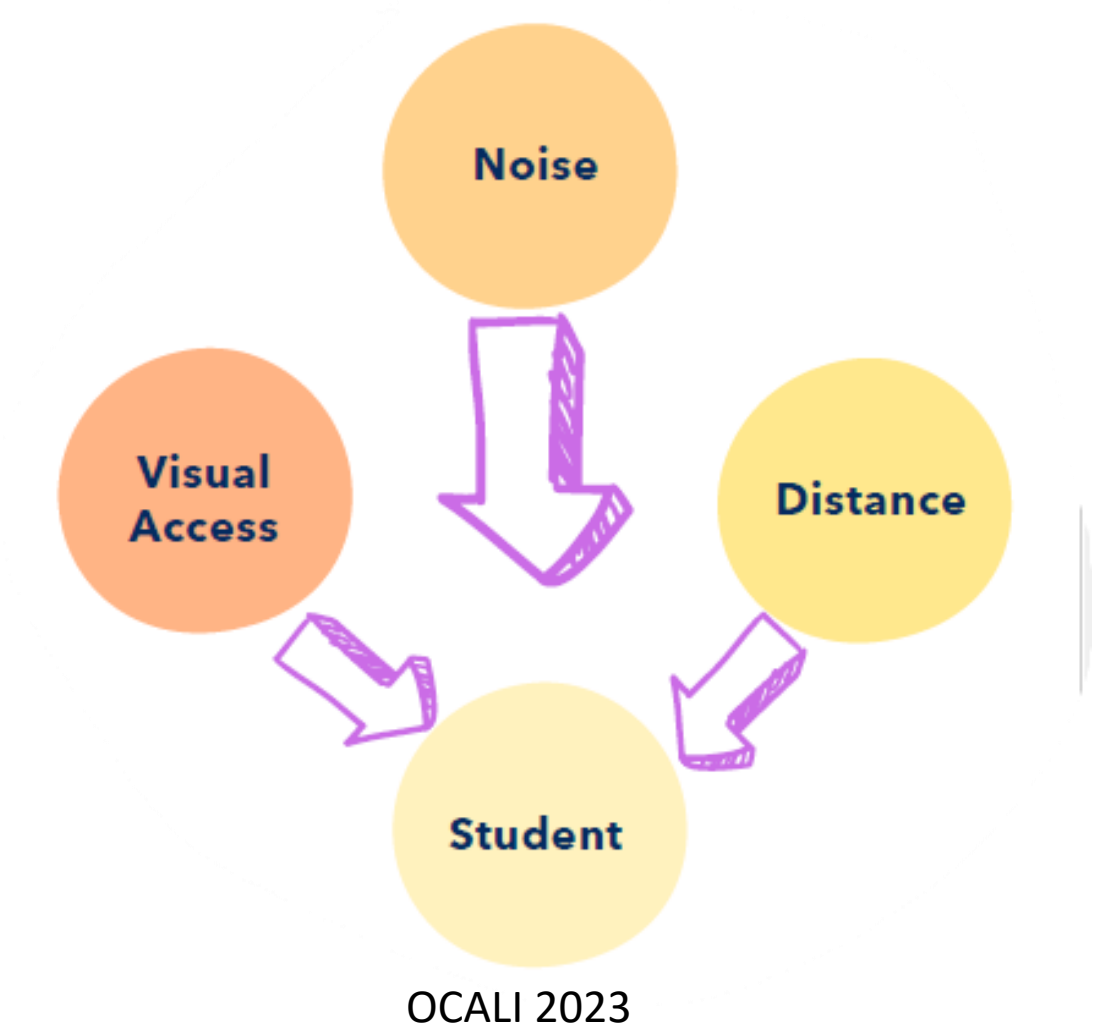
Classroom Listening Assessment Overview

FLE Procedures

What is the FLE?

A tool designed to assess the impact of noise, distance, and visual access in the student's customary listening environment.

Noise

Visual Access

Distance

Student

OCALI 2023

Who can administer the FLE?

- Educational Audiologists

- Speech and Language Pathologists

- Teachers of the Deaf/Hard of Hearing

Prior to administration, individuals should have training with the evaluation as well as an understanding of the communication implications of various levels of hearing and how they impact performance in the classroom.

Steps to Preparing and Performing the FLE

1. Obtain the necessary materials
2. Prepare the FLE set-up
3. Check student's personal hearing instruments if used
4. Conduct the FLE

Collect the FLE Materials
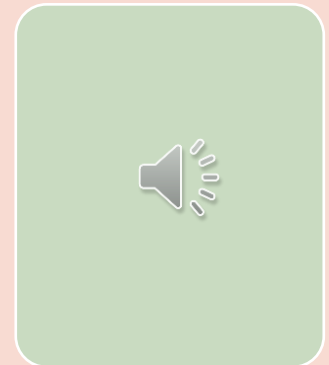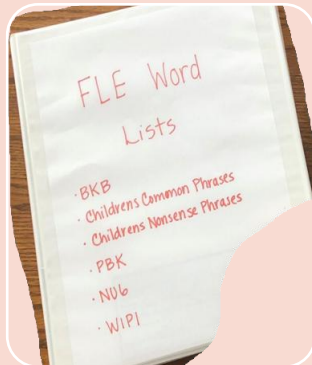
| FLE Protocol & Stimulus Materials | Listening Hoop

6-7 " diameter | Sound Level Meter

Phone with NIOSH app | Measuring Tape or pre-measured cord

3-12 Ft | Classroom Multi Talker or Cafeteria noise file

10 min length |

Optional: Masking Tape, Bluetooth speaker

Materials/Equipment Options

- Protocol: auto-calculating, fillable pdf
  - https://www.phonakpro.com/content/dam/phonakpro/gc_hq/en/resources/counseling_tools/documents/child_hearing_assessment_functional_listening_evaluation_fle_2017.pdf

- Noise File
  - https://www.youtube.com/watch?v=mYt6-Soa9IE, https://www.youtube.com/watch?v=h95EMzTulkI, Computer, iPad, iPod, iPhone

- Sound Level Meter or Sound Level App
  - NIOSH is recommended
  - Computer, iPad, Phone
  - App needs "A" weighting

- Word/Phrase/Sentence materials
  - Hand scoring: worksheet or computer
  - Autocalculating

Functional Listening Evaluation (FLE)

by Cheryl DeConde Johnson, Ed.D.

PHONAK
life is on

1. Obtain the necessary materials
2. **Prepare the FLE set-up**
3. Check student's personal hearing instruments if used
4. Conduct the FLE

Steps to Conduct the FLE

Stimulus Materials (click on video box)

Determine Stimulus Materials

- Developmentally appropriate or to serve a more diagnostic purpose:
  - Options
    - Receptive: Minimal pairs, words, phrases, sentences
    - Expressive: Spoken (repeat), picture or object pointing
    - Try whatever works
- Ideal: Sufficient length to reflect acoustic parameters of classroom
- Speech articulation: Can you understand the student's speech?
- Difficulty Level: Common Phrases vs Nonsense phrases
  - Nonsense phrases
    - mild/unilateral HL
    - Illustrates the impact on auditory comprehension when context is removed or student learning new content with new vocabulary
- Number of stimuli:
  - Consider desired conditions, child's attention capacity
  - Number of Lists: 8 basic conditions + 4 for RM HAT

Common & Nonsense Phrases

Common Children's Phrases

1. He fell down.
2. Clean this up.
3. It's not for you.
4. Can you see me?
5. Can I play now?
6. Look over there.
7. It's lunch time.
8. Can you help me?
9. Close your eyes.
10. Let me have it.

Nonsense Phrases

1. Down fell he boat.
2. Up this clean floor.
3. You table not.
4. Me you see can.
5. Now play I go.
6. There over look.
7. Lunch not time do.
8. Help you can me.
9. Eyes yours on blue
10. Have me let ball.

Stimulus Material Options

Sentence	Phrase	Words	Picture – Closed Set
• **Hearing in Noise-Test-C (HINT-C)** • SPIN (Speech in Noise) • Pediatric Sentence Identification (PSI) • WIPI sentences • BKB sentences	• **Common Children's Phrases** • **Children's Nonsense Phrases** *(Available in Spanish)*	•PBK •NU-6	• WIPI • NU-CHIPS

FLE Protocol (click on video box)
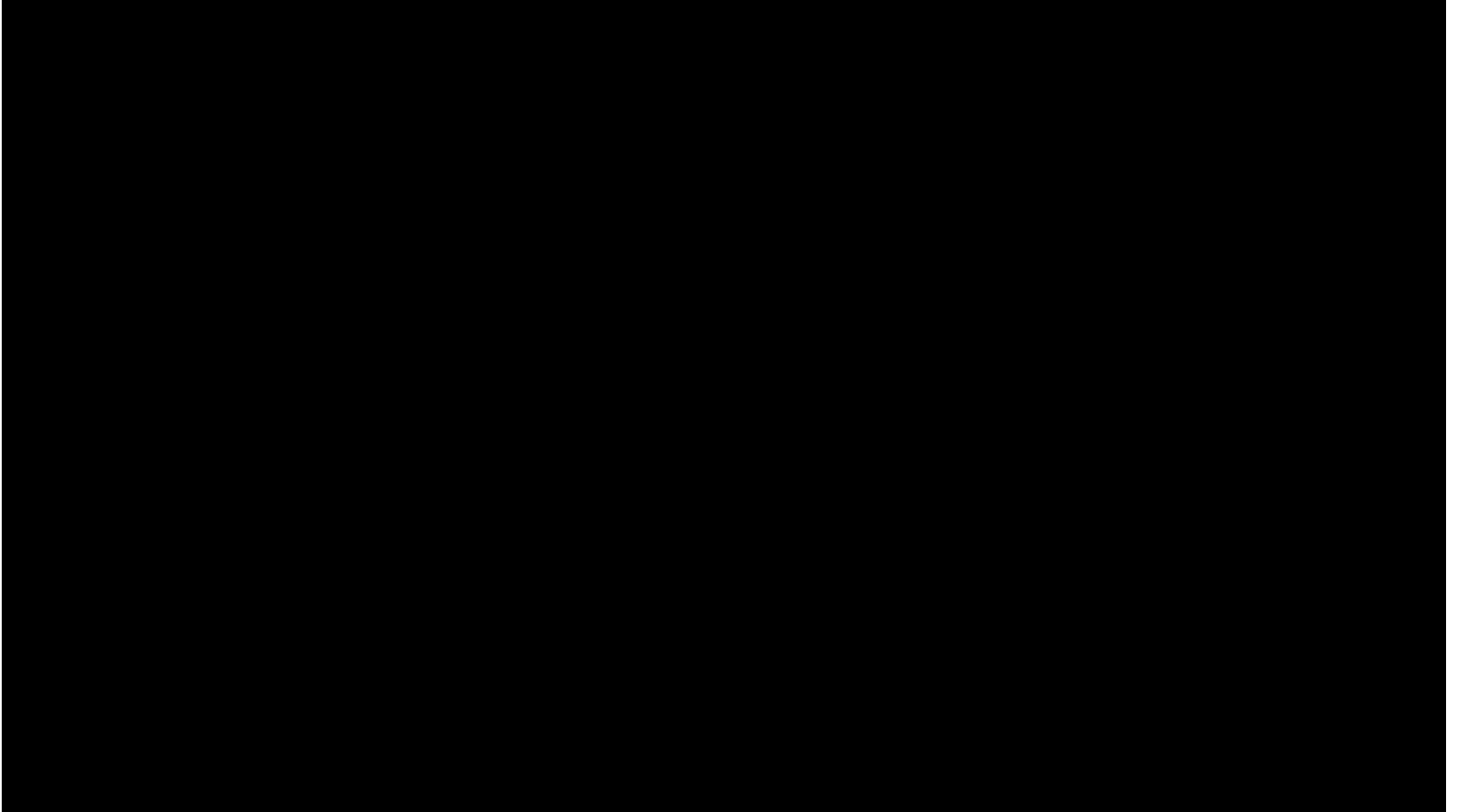
Fill out the autocalculating form created by Phonak: www.adevantage.com/resources

Autometric results

Hearing sensitivity
Pure Tone Ave: Right Ear ___ dB
                Left Ear ___ dB

Word recognition
Right Ear ___ % @ ___ dBHL
Left Ear ___ % @ ___ dBHL

Sound field
Aided ☐   Unaided ☐
Quiet ___ % @ ___ dBHL
Noise ___ % @ ___ dBHL @ ___ S/N

Functional Listening Evaluation conditions

Amplification
☐ None
☐ Hearing aid(s)
☐ Cochlear implant(s)
☐ Bone-conduction device

Hearing assistance technology
☐ Personal FM
☐ Classroom
☐ Other ___

Classroom noise level
Unoccupied: ___ dBA SPL
Occupied: ___ dBA SPL

Assessment material: ___

Distance at far conditions: ___ ft

Noise stimulus: ☐ Multitalker
                 ☐ Classroom
                 ☐ Other ___

Speech level @ listener's ear: ___ dBA SPL
              @ 1 ft from examiner: ___ dBA SPL
Noise level @ listener's ear: ___ dBA SPL

Approximate speech to noise levels: close + ___ dB
                                     far − ___ dB

Modifications in protocol:

Functional listening scorebox

	close/quiet	close/noise	far/quiet	far/noise
auditory-visual	1	3	8	5
auditory	2	4	7	6
			11	10

Updated 2013 by C.D. Johnson. Based on Functional Listening Evaluation by C.D. Johnson & P. Von Almen, 1993   8

Functional listening scorebox

	close/quiet	close/noise	far/quiet	far/noise
auditory-visual	1	3	8	5
			12	9
auditory	2	4	7	6
			11	10

Updated 2013 by C.D. Johnson. Based on Functional Listening Evaluation by C.D. Johnson & P. Von Almen, 1993   8

Interpretation matrix

Noise

	quiet	noise
close – aud	2	4
close – aud/vis	1	3
far – aud	7	6
far – aud/vis	8	5
Average scores:	0.0 %	0.0 %
	quiet	noise

Distance

	close	far
quiet – aud	2	7
quiet – aud/vis	1	8
noise – aud	4	6
noise – aud/vis	3	5
Average scores:	0.0 %	0.0 %
	close	distant

Visual input

	aud/vis	aud
close – quiet	1	2
close – noise	2	4
far – noise	5	6
far – quiet	8	7
Average scores:	0.0 %	0.0 %
	aud/vis	aud

With hearing assistance technology:

Noise

	quiet	noise
far – aud/vis	12	9
far – aud	11	10
Average scores:	0.0 %	0.0 %
	quiet	noise

Visual input

	aud/vis	aud
far – quiet	12	11
far – noise	9	10
Average scores:	0.0 %	0.0 %
	aud/vis	aud

Protocol Fields

- Audiometric Data
- FLE conditions
  - Amplification
  - Classroom Noise levels (occupied/unoccupied)
- Assessment Stimulus Material
- Distance at far condition
- Noise stimulus
- Speech presentation level
- Noise presentation level
- Speech to Noise levels for close and far
- Variations in the protocol

Variations in Protocol

Elevated ambient noise levels

Classroom size/distance from the teacher

Teacher's voice (soft/loud; accents)

Teacher may deliver sentences

Age/Development Level

See Situational Observation of Listening for Children

Scorebox:

1-8 Standard conditions;
9-12 used for RM or other condition comparison

Functional listening scorebox

	close/quiet	close/noise	far/quiet	far/noise
auditory–visual	1 — 95	3 — 70	8 — 50 / 12 — 90	5 — 75 / 9 — 90
auditory	2 — 80	4 — 70	7 — 75 / 11 — 95	6 — 50 / 10 — 95

Appendix

Common children's phrases[1]

Phrase vs Word Scoring

Selecting A Room (click on video box)

Environment for Testing

1. Select classroom
2. Observe and measure classroom conditions-record on form
   - Classroom Noise Levels-unoccupied/occupied
   - Far condition distance
   - Type of noise
3. Seating
   - Seating at a table as shown in the video provides room for the computer with the noise file and the SLM to both be placed 3 ft from student
4. Other
   - Check for lighting/glare
   - Minimize distractions

NIOSH Sound Level Meter 4+

EA LAB
Designed for iPhone

★★★★★ 4.7 • 11.4K Ratings

Free

Microphone Orientation

Do not hold SLM

LAeq: average sound level in dBA

Lmax: highest level recorded

12:21

Sound level meter ⑦

Instantaneous level [dB(A)]

50.0

Total Run Time	00:00:18
Instantaneous level	50.0 dB(A)
LAeq	59.4 dB
Lmax	64.6 dB
LCpeak	78.1 dB
TWA	dB
Dose	%

dB — Sound level meter | Saved | Noise info | Settings

12:20

⑦

Settings

SOUND LEVEL METER

🎤 Microphone	Internal ⟩
⊷ Calibration	⟩

NOISE AT WORK

§ Standard	NIOSH ⟩
↑ Threshold level	90 dB ⟩
⟲ Exchange rate	3 dB ⟩
⟋ Time weighting	Slow ⟩
⌒ Frequency weighting	A ⟩

Frequency weighting applies only to the instantaneous level.

SAVING

♡ Apple Health	⬤

dB — Sound level meter | Saved | Noise info | Settings

Physical Set-Up (click on video box)

Diagram A – Close

Student

3 FT   3 FT

Noise source   Examiner

Diagram B – Far

Student

3 FT

Noise source   12–15 FT

Examiner
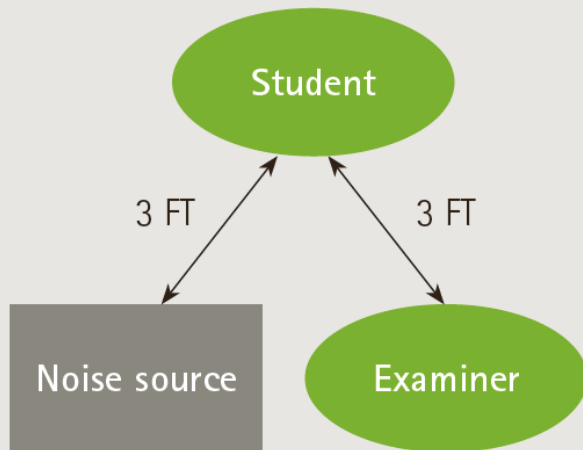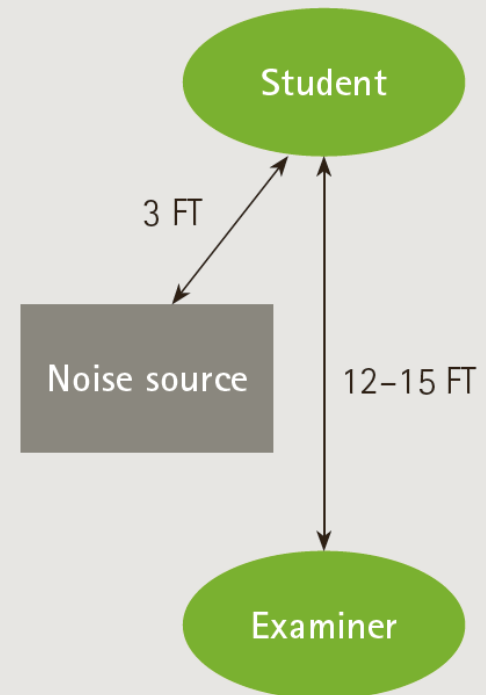
Presentation Levels: Setting Up the Sound Level Meter (click on video box)
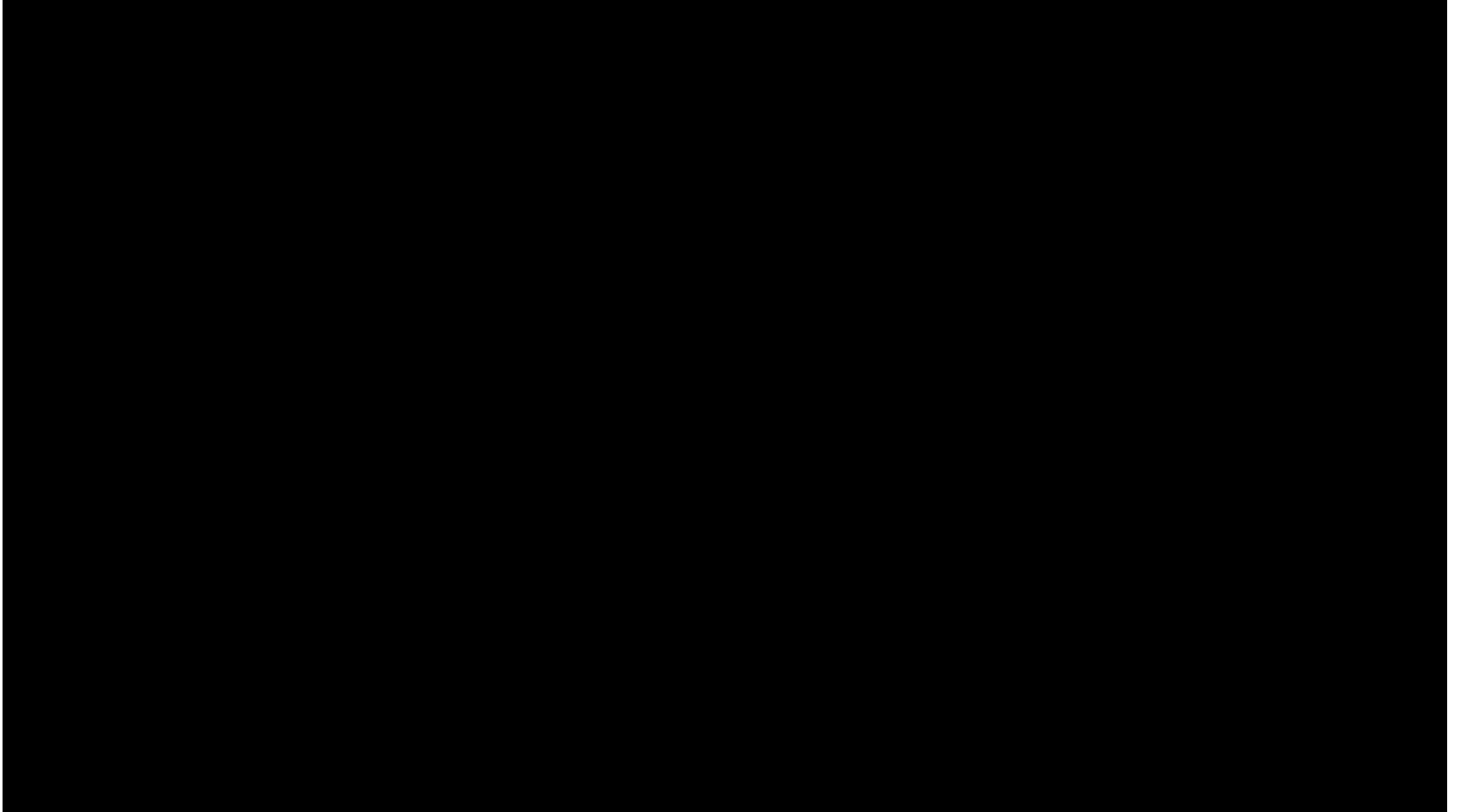
Noise Considerations

Type of noise

- Multi-talker babble – most representative of classroom chatter
- Noise generated by computer

Level of presentation

- Target is same as normal conversation: 50 dB HL/65 dB SPL on SLM
- SNRs: - +5 to -5 dB (more than one level may be helpful)
  - Goal is to simulate classroom
  - Use student as their own control across situations to understand impact of noise, visual access, and distance

Visual Support

- Assess impact of auditory vs auditory-visual input to consider speech reading benefit

Note: Bluetooth speaker may be used to deliver noise source from computer, ipad, or phone to student

Acoustic Hoop (click on video box)
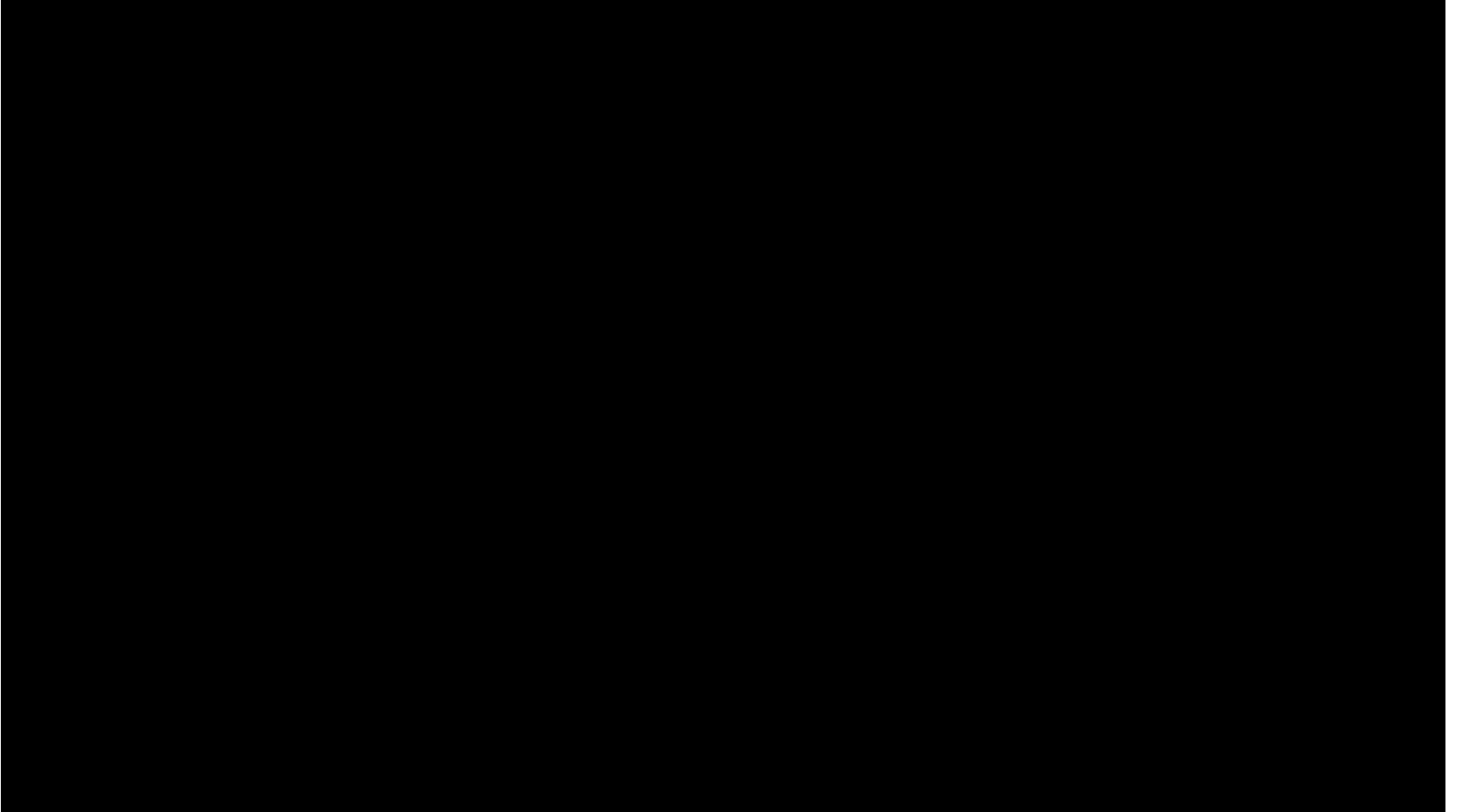
Presentation Protocol

Eight conditions

Variables must stay the same except condition that is being evaluated

Student's typical hearing mode including amplification is used

When RM HAT validation is desired, repeat distance conditions (4)

Predetermined order to start easy and finish easy (quiet)

Use normal speaking rate and inflection

1. Obtain the necessary materials
2. Prepare the FLE set-up
3. **Check student's personal hearing instruments if used**
4. Conduct the FLE

Steps to Conduct the FLE

Before you start--

1. Check student's personal hearing devices.

Are they working as intended?

2. Describe activity to the student: "you will be hearing short phrases; please repeat what you hear. Sometimes there will be some noise in the background that will make it harder to understand the words – please do your best to repeat them; it is ok to guess. "

1. Obtain the necessary materials
2. Prepare the FLE set-up
3. Check student's personal hearing instruments if used
4. Conduct the FLE

Steps to Conduct the FLE

Presentation Level: CLOSE

Recommended: +5dBA SNR

- Voice calibration with SLM:
  - Measure your voice at 3 ft. from examiner (the student's ear location) (ave. ~65 dBA)
  - Practice reading a passage to maintain steady voice level
  - Note: If you cannot read the SLM at 3 ft, bring SLM to 1 ft and verify your voice level (ave.~68 dBA)
- Noise source calibration with SLM:
  - Adjust volume to ave. 60 dBA at student's ear

Record on form:

- Speech level at listener's ear
- Speech level 1 ft. from examiner if used
- Noise level at listener's ear
- Approximate speech to noise levels for close conditions
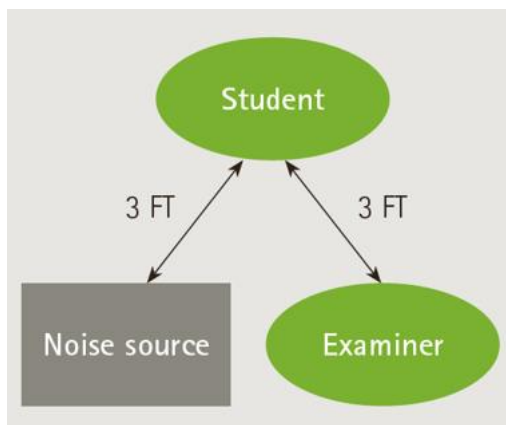
Presentation Level: FAR

Recommended: -5dBA (far/noise)

- Noise source volume is unchanged; remains at ave. 60 dBA and stays at same location
- Examiner moves to distance location with SLM
  - Maintain ave 65dBA voice level as measured on the SLM (or at 1 ft. - ave.~68 dBA)
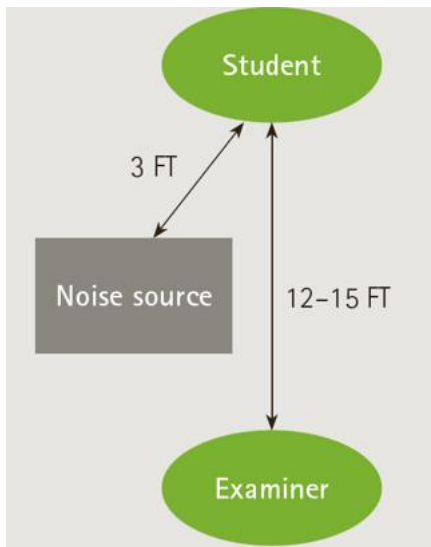
Record on form:

- Approximate speech to noise levels for far conditions.

Student

3 FT

Noise source

12–15 FT

Examiner

Condition 1: Close, Quiet, AV
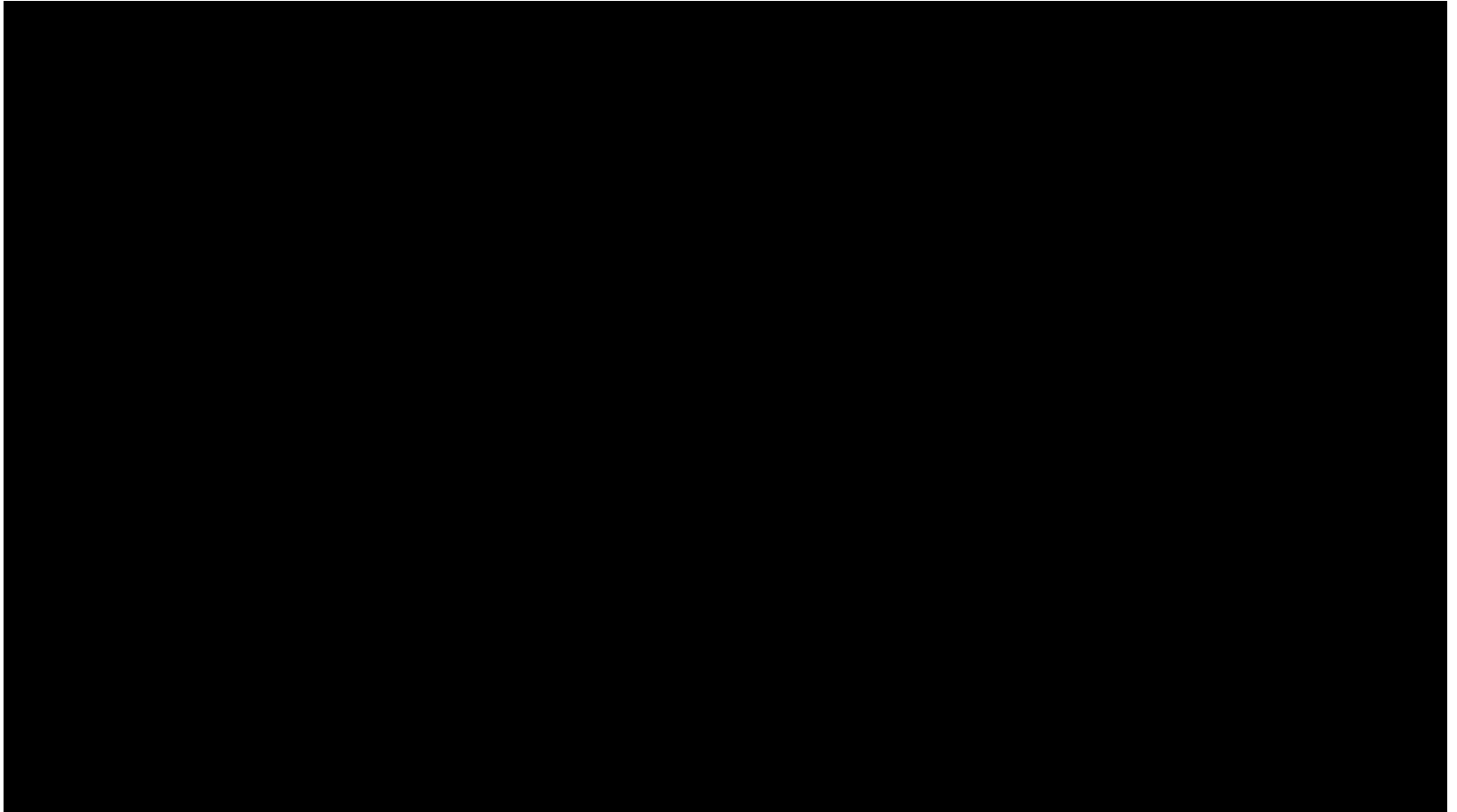
Condition 2: Close, Quiet, Auditory Only

Condition 3: Close, Noise, AV

Condition 4: Close, Noise, Auditory Only

Condition 5: Distant, Noise, AV

Condition 6: Distant, Noise, Auditory Only
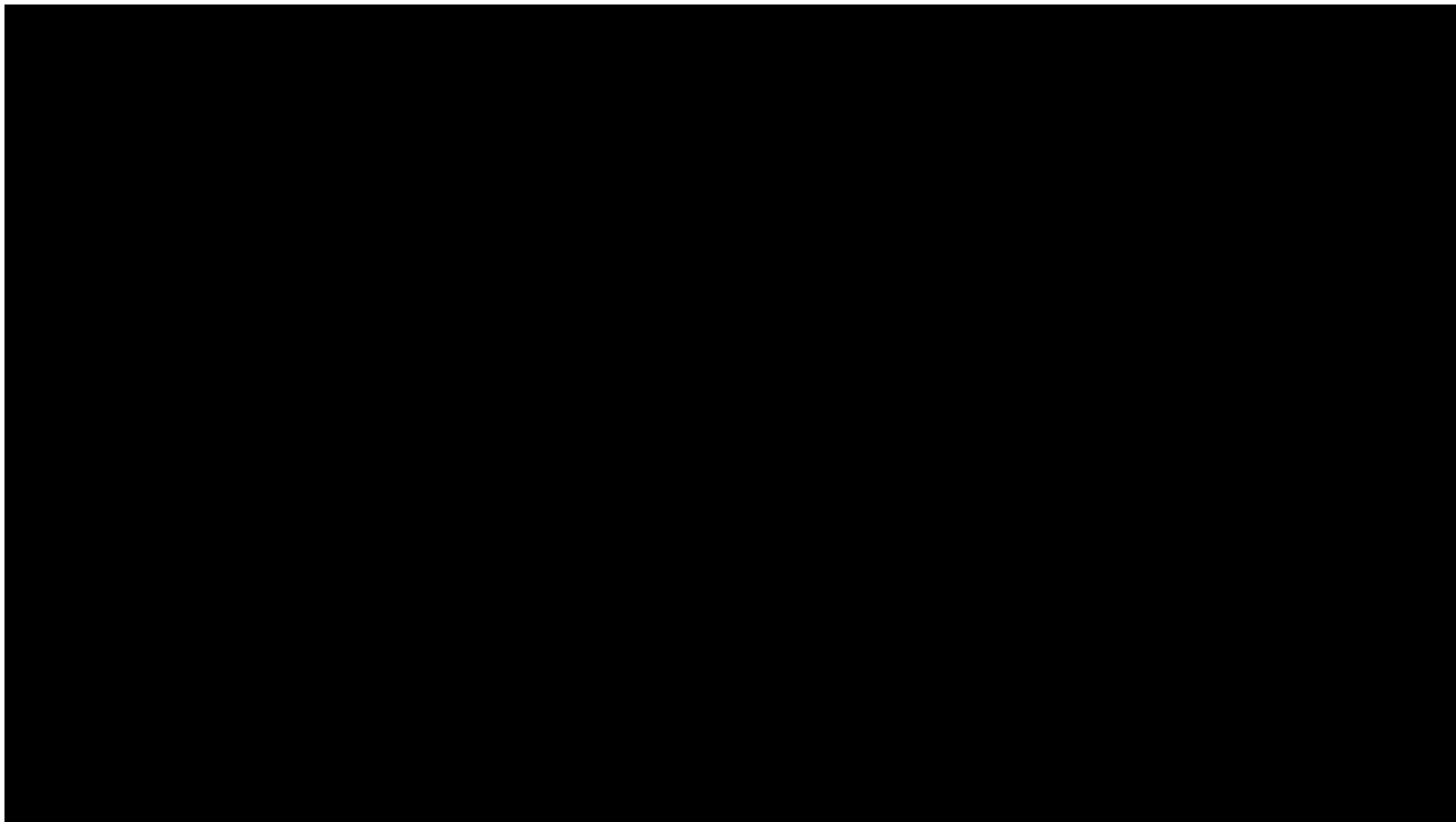
Condition 7: Distant, Quiet, AV

Condition 8: Distant, Quiet, AV

Recorded FLE

Evaluation Materials

Recorded FLE Using Sentences (Johnson & Anderson, 2013)
- Hearing in Noise Test (HINT-C) 5 word sentences (15 lists of 10 sentences)
- Noise condition: pre-calibrated at +5 SNR for all conditions
- Auditory-Visual condition – must be mouthed
- Presented at comfortable loudness level
- Eliminates need for noise file, hoop, and calibrating for presentation levels
- RM validation is live voice using the noise from the audio file
- Practice sentences: 3 quiet and 3 noise
- Available from https://successforkidswithhearingloss.com
- Download Directions https://www.youtube.com/watch?v=lf-DK6R_1Sc
- Download and Delivery explanation https://www.youtube.com/watch?v=4tOxoMaKXG4

Instructions

- Load test file to phone or computer
  - If using phone you may want a Bluetooth speaker to improve audio quality
- Adjust volume in close position to comfortable listening level for student – record volume setting and maintain throughout the test
  - Place computer or phone <u>next to examiner</u> for both close and distant conditions
- Close- Distance set-up: same as FLE
  - 4 sentence lists close, 4 distance (Recorded Lists 1-8)
  - Auditory –visual conditions: mouth in sync with audio
- RM assessment:
  - Distance/Noise, Examiner speaks the sentences: Lists 9: auditory only (use acoustic hoop), List 10: auditory-visual
- Do the practice sentences to orient the student to the task
- Score is based on words correct; mark off words that are incorrect; Record percent correct scores (into FLE Auto fillable scoresheet for each conditions.

THE RECORDED FUNCTIONAL LISTENING EVALUATION USING SENTENCES: SUMMARY & INTERPRETATION FORM

Name:_____ Date:_____ Evaluator:_____ Grade:_____

Directions: The sentence worksheet is ordered to coincide with the presentation order of the conditions in the Scorebox. Lists 4–13 can be used to retest the far conditions with FM or other hearing assistance technology. Present close conditions at 3 feet and far conditions at 10–15 feet from the speaker of the recorded test source. Adjust the presentation level to a comfortable teacher loudness level for the student in the close-quiet condition. Record this level below and do not change the volume for the remaining conditions. To conduct the auditory-visual conditions, the evaluator will need to mouth the sentences in sync with the audio recording. Begin with the practice sentences on page 3 of the sentence worksheet. Scores from the sentence worksheet will autocalculate and populate this worksheet.

AUDIOMETRIC RESULTS

Hearing Sensitivity: Pure Tone Ave: Right Ear:____dB Left Ear:____dB

Word Recognition: Right Ear____% @ ____dBHL Left Ear____% @ ____dBHL

Sound Field: Aided Unaided

Quiet____% @ ____dBHL

Noise____% @ ____dBHL @ ____dBN

FUNCTIONAL LISTENING EVALUATION CONDITIONS

Amplification: ☐ None ☐ Hearing Aid(s) ☐ Cochlear Implant(s)

☐ Bone-conduction device

Hearing Assistance Technology: ☐ Personal FM ☐ Classroom ☐ Other:_____

Distance at far condition:____ft Distance at close condition:____ft

Test loudness @ listener's ear:____dBA SPL

Modifications in protocol:_____

FUNCTIONAL LISTENING SCOREBOX

	close/quiet	close/noise	far/quiet	far/noise
auditory-visual	1 ____%	3 ____%	5 ____% / 12 ____%	6 ____% / 9 ____%
auditory	2 ____%	4 ____%	7 ____% / 11 ____%	8 ____% / 10 ____%

INTERPRETATION MATRIX

Noise
	quiet	noise
close-aud	2 ____%	4 ____%
close-aud/vis	1 ____%	3 ____%
far-aud	7 ____%	8 ____%
far-aud/vis	5 ____%	6 ____%

Distance
	close	far
quiet-aud	2 ____%	7 ____%
quiet-aud/vis	1 ____%	5 ____%
noise-aud	4 ____%	8 ____%
noise-aud/vis	3 ____%	6 ____%

Visual Input
	aud/vis	aud
close-quiet	1 ____%	2 ____%
close-noise	3 ____%	4 ____%
far-noise	5 ____%	8 ____%
far-quiet	5 ____%	7 ____%

Average scores:
quiet 0.0 % noise 0.0 %
close 0.0 % far 0.0 %
aud/vis 0.0 % aud 0.0 %

With Hearing Assistance Technology:
Noise
	quiet	noise
far-aud/vis	13 ____%	9 ____%
far-aud	11 ____%	10 ____%
far-aud	12 ____%	

Visual Input
	aud/vis	aud
far-quiet	13 ____%	11 ____%
far-noise	9 ____%	10 ____%

Average scores:
quiet 0.0 % noise 0.0 %
aud/vis 0.0 % aud 0.0 %

INTERPRETATION AND RECOMMENDATION

C. D. Johnson & K. L. Anderson, 2013; Based on Functional Listening Evaluation by C.D. Johnson & P. Von Almen, 1993. The Recorded FLE with Sentences is available from www.successforkidswithhearingloss.com

FLE Scoring, Interpretation, Recommendations

Scoring

All variations must be documented!

According to procedures for materials used; score percent correct

- Common Children's Phrases –total phrase (preferred) or word
- Nonsense Phrases – all words must be correct

Transfer percent correct scores to interpretation matrix

- Auto-Calculating pdf

Review Interpretation Matrix for average effects of conditions

- Child's performance is compared across all conditions
  - Without RM HAT
  - With RM HAT

Audiometric results

Hearing sensitivity
Pure Tone Ave: Right Ear [ ] dBHL
Left Ear [ ] dBHL

Word recognition
Right Ear [ ] % @ [ ] dBHL
Left Ear [ ] % @ [ ] dBHL

Sound field
Aided [ ] Unaided [ ]
Quiet [ ] % @ [ ] dBHL
Noise [ ] % @ [ ] dBHL @ [ ] SNR

Functional Listening Evaluation conditions

Amplification
[ ] None
[ ] Hearing aid(s)
[ ] Cochlear implant(s)
[ ] Bone-conduction device

Hearing assistance technology
[ ] Personal FM
[ ] Classroom
[ ] Other [ ]

Classroom noise level
Unoccupied: [ ] dBA SPL
Occupied: [ ] dBA SPL

Assessment material: [ ]

Distance at far conditions: [ ] ft

Noise stimulus: [ ] Multitalker
[ ] Classroom
[ ] Other [ ]

Speech level @ listener's ear: [ ] dBA SPL
@ 1 ft from examiner: [ ] dBA SPL
Noise level @ listener's ear: [ ] dBA SPL

Approximate speech-to-noise levels: close [ ] dB SPL
far [ ] dB SPL

Modifications in protocol:
[ ]

Functional listening scorebox

	close/quiet	close/noise	far/quiet	far/noise
auditory-visual	1 [ ]	3 [ ]	8 [ ] / 12 [ ]	5 [ ] / 9 [ ]
auditory	2 [ ]	4 [ ]	7 [ ] / 11 [ ]	6 [ ] / 10 [ ]

Interpretation matrix

Noise

	quiet	noise
close – aud	2 [ ]	4 [ ]
close – aud/vis	1 [ ]	3 [ ]
far – aud	7 [ ]	6 [ ]
far – aud/vis	8 [ ]	5 [ ]
Average scores:	0.0 % quiet	0.0 % noise

Distance

	close	far
quiet – aud	2 [ ]	7 [ ]
quiet – aud/vis	1 [ ]	8 [ ]
noise – aud	4 [ ]	6 [ ]
noise – aud/vis	3 [ ]	5 [ ]
Average scores:	0.0 % close	0.0 % distant

Visual input

	aud/vis	aud
close – quiet	1 [ ]	2 [ ]
close – noise	3 [ ]	4 [ ]
far – noise	5 [ ]	6 [ ]
far – quiet	8 [ ]	7 [ ]
Average scores:	0.0 % aud/vis	0.0 % aud

With hearing assistance technology:

Noise

	quiet	noise
far – aud/vis	12 [ ]	9 [ ]
far – aud	11 [ ]	10 [ ]
Average scores:	0.0 % quiet	0.0 % noise

Visual input

	aud/vis	aud
far – quiet	12 [ ]	11 [ ]
far – noise	9 [ ]	10 [ ]
Average scores:	0.0 % aud/vis	0.0 % aud

Interpretation and recommendations

[ ]

Functional Listening Matrix (Scorebox)

	Close/Quiet	Close/Noise	Far/Quiet	Far/Noise
Auditory-Visual	95%	85%	90%	80%
Auditory	85%	65%	80%	35%

Interpretation Matrix: Effects of Noise

	Quiet	Noise
Close/Auditory	85%	65%
Close/Auditory-Visual	95%	85%
Far/Auditory	80%	35%
Far/Auditory-Visual	90%	80%
Average of Scores:	87.5%	66.25%

Interpretation Matrix: Effects of Distance

	Close	Far
Quiet/Auditory	85%	80%
Quiet/Auditory-Visual	95%	90%
Noise/Auditory	65%	35%
Noise/Auditory-Visual	85%	80%
Average of Scores:	82.5%	71.25%

Interpretation Matrix: Effects of Visual Input

	Auditory-Visual	Auditory
Close/Quiet	95%	85%
Close/Noise	85%	65%
Far/Noise	80%	35%
Far/Quiet	90%	80%
Average of Scores:	87.5%	66.25%

Interpretation Matrix: Effects of Remote Microphone HAT (Note: scores are rounded)

	No RM	RM
Quiet	88%	93%
Noise	66%	94%
Close	83%	91%
Far	71%	95%
Auditory-Visual	88%	94%
Auditory	66%	93%

Interpretation Matrix: Effect of RM HAT
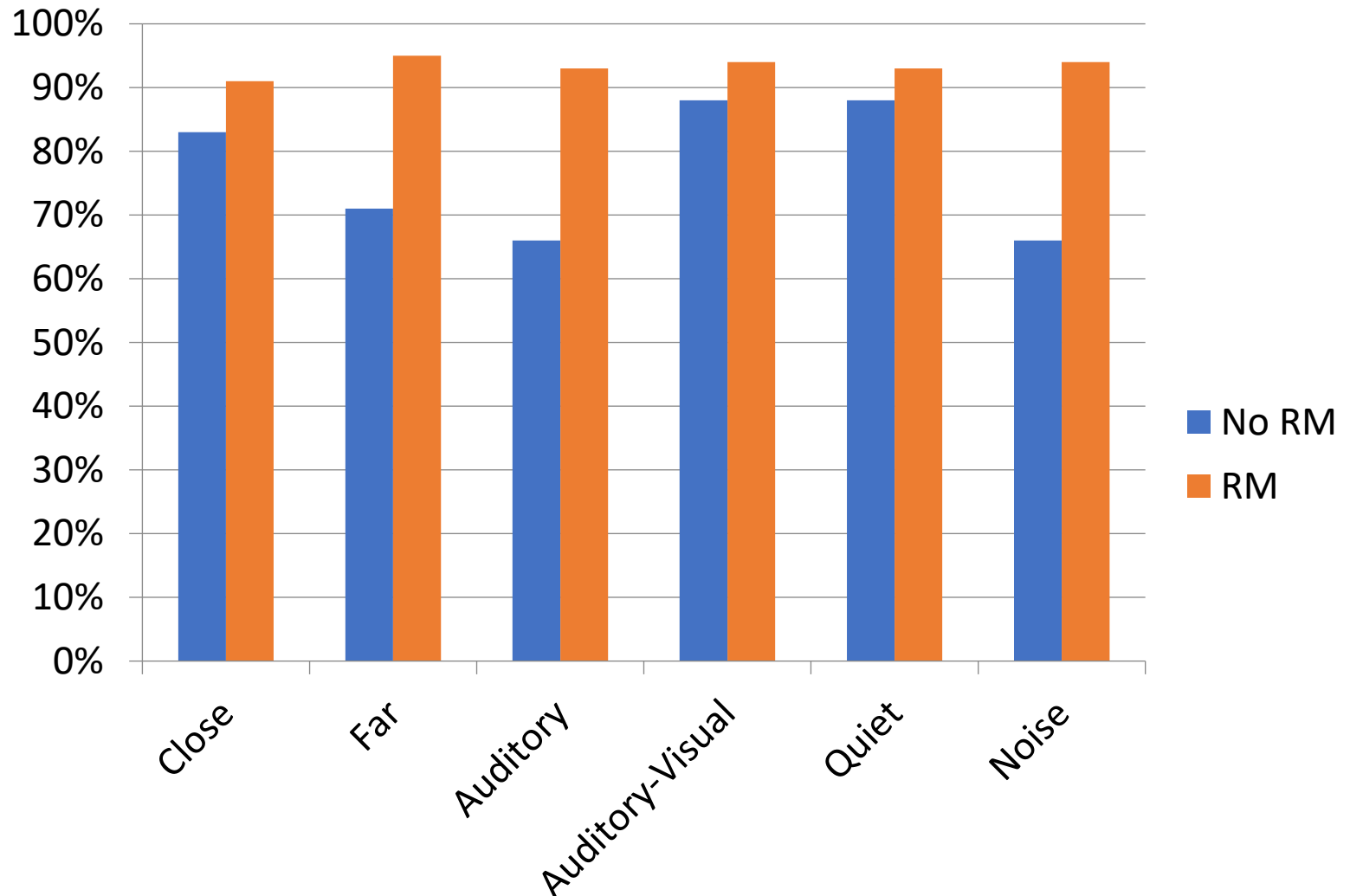
Functional Listening Evaluation / Amplification, Familiarity, Noise, Distance, Visual Input, FM

NAME_____ DATE_____ _Audiologist_____

Functional Listening Matrix:

		CLOSE				DISTANT				
		5. QUIET NO HA/FM	6. NOISE NO HA/FM	7. QUIET HA	8. NOISE HA	9. QUIET NO HA/FM	10. NOISE NO HA/FM	11. QUIET HA	12. NOISE HA	13. NOISE HA+FM
1.	Auditory Only/ *Unfamiliar* Material									
2.	Auditory Only/ *Familiar* Material									
3.	Auditory-Visual/ *Unfamiliar* Material									
4.	Auditory-Visual/ *Familiar* Material									

Interpretation Matrix:

	AVG		AVG	
Quiet Scores (5,7,9,11)		Noise Scores (6,8,10,12)		Degradation Percentage for **Noise**
Close Scores (5,6,7,8)		Distance Scores (9,10,11,12)		Degradation Percentage for **Distance**
Familiar Scores (2,4)		Unfamiliar Scores (1,3)		Degradation Percentage for **Unfamiliar Material**
Auditory-Only Scores (1,2)		Auditory-Visual Scores (3,4)		Improvement Percentage for **Visual Input**
Unamplified Scores (5,6,9,10)		Amplified Scores (7,8,11,12)		Improvement Percentage for **Amplification**
No FM in Noise Scores (12)		FM in Noise Scores (13)		Improvement in **Noise w/FM System**

Interpretation & Recommendations:_____

_____

THE FUNCTIONAL LISTENING EVALUATION

Name: AW   Date: April 18, 2008   Examiner: MS, Audiologist   DOB: October 26, 2000   SCHOOL:

AUDIOMETRIC RESULTS

Hearing Sensitivity: Mild sensorineural loss .5 to 2 kHz right ear & .5 to 1.5 kHz left ear

Pure Tone Ave: Right Ear 30 dB HL   Left Ear 20 dB HL

PTA used: √ 500, 1K, 2K   ☐ 1K, 2K, 4K

Word Recognition: Right Ear 100% @ 50 dBHL   Left Ear 92% @ 40 dBHL

Sound Field: Unaided   Quiet 96 % @ 50 dBHL

Noise 88 % @ 50 dBHL @ 0 S/N

Sound Field: With FM   Noise 100 % @ 50 dBHL @ 0 S/N

FUNCTIONAL LISTENING EVALUATION CONDITIONS

Amplification: None √   Hearing Aids ☐   FM √   Cochlear Implant

☐ Sound Field ☐   Other_____

Classroom Noise Level: Unoccupied < 50 dBA SPL ; Occupied N/A dBA SPL

Assessment Material: Children's Nonsense Phrases

Distance (distant condition): 12 ft   Noise Stimulus: Multitalker √

Speech level at listener's ear: 65 dBA SPL

Speech level @ 1ft from examiner's mouth: 70 dBA SPL

Noise level @ listener's ear: 60 dBA SPL

Approximate speech to noise levels: close +5 dB   distant -5 dB

Modifications in protocol: *Completed in standard room at North Delta Public Health Unit as student's customary classroom unavailable. Classroom noise level not measured for this reason.*

FUNCTIONAL LISTENING SCOREBOX

	close/quiet	close/noise	distant/quiet	distant/noise
auditory-visual	[1] 95%	[3] 85% / 95%	[8] 90% / 90%	[5] 80% / 95%
auditory	[2] 85%	[4] 65% / 90%	[7] 80% / 100%	[6] 35% / 95%

INTERPRETATION MATRIX

Noise

	quiet	noise
close-aud	[2] 85	[4] 65 / 90
close-aud/vis	[1] 95	[3] 85 / 95
distant-aud	[7] 80 / 100	[6] 35 / 95
distant-aud/vis	[8] 90 / 90	[5] 80 / 95

Distance

	close	distant
quiet-aud	[2] 85	[7] 80 / 100
quiet-aud-vis	[1] 95	[8] 90 / 90
noise-aud	[4] 65 / 90	[6] 35 / 95
noise-aud/vis	[3] 85 / 95	[5] 80 / 95

Visual Input

	aud-vis	aud
close-quiet	[1] 95	[2] 85
close-noise	[3] 85 / 95	[4] 65 / 90
distant-noise	[5] 80 / 95	[6] 35 / 95
distant-quiet	[8] 90 / 90	[7] 80 / 100

Average of above scores:
87.5 % quiet   66.25% noise   82.5% close   71.25% distant   87.5% aud/vis   66.25% aud

With Hearing Assistance Technology :
Average of above scores:
92.5% quiet   93.75% noise   91.25% close   95% distant   93.75% aud/vis   92.5% aud

INTERPRETATION AND RECOMMENDATIONS

Presences of noise and distance from the speaker as well as lack of visual cues all have a significant detrimental effect on AW's speech reception. These are common elements in most classrooms. Use of an FM system significantly reduces these negative effects.
Recommendations :

- *Provide AW with use of an FM system in the classroom*
- *When possible, reduce noise, decrease distance from AW, and provide visual cues in the classroom setting.*
- *Further discussion available on Audiological Report of April 27, 2008.*

How often are assessments completed?

Some Indicators for repeating the FLE:

- Excessively noisy classroom
- Monitor use of accommodations
- Student struggling to hear in class or performance declining
- Teacher with accent, facial hair or other issues that may affect speech intelligibility

- Ideally: At least annually for every student with reduced hearing on an IEP or 504 Plan
  - Why?
    - Classrooms and teachers change
    - Listening skills change
    - Accommodations may need to be modified accordingly

- Annually for other students with known listening problems or when listening problems are suspected in other students

Interpretation and Recommendations

A score of 90%* is considered the level at which a student has sufficient auditory access to information in the classroom.

*Bodkin, Madell, & Rosenfield (1999).

Interpretation:

- Generally, the condition of close/quiet/auditory-visual is the student's best score
- Describe effects of listening conditions
- Identify best listening ability

Recommendations:

- **HAT is often recommended to close the auditory access gap for difficult conditions**
- Other accommodations for access
  - Seating location
  - Visual access
  - Use of sign or cued language
  - See 504/IEP Checklist

Normative Data

- In Quiet/Auditory Only/Close condition – normal hearing children perform at 96-99% , at +5 SNR 93-97% *

	Age 3-5 Male - Female	Age 6-8 Male - Female	Age 9+ Male - Female
Quiet @ 50 dB	98-98%	98-98%	99-96%
Quiet @ 35 dB	95-96%	97-98%	98-96%
50 dB @ +5 SNR	93-94%	94-95%	97-93%
50 dB @ 0 SNR	91-92%	91-93%	95-93%
35 dB @ 0 SNR	90-92%	91-90%	91-90%

*Bodkin, Madell, & Rosenfield (1999).

- 126 typically hearing children ages 3-17
- Open set single words

Eligibility and IEP Goals

www.successforkidswithhearingloss.com

- FLE is an assessment to support eligibility
  - FLE provides data on auditory access limitations that occur as a result of an auditory disorder
  - Suggests accommodations and the potential need for specially designed instruction
- IEP Goals
  - Link FLE results to potential goal areas
  - EX: Self-Advocacy: Student will indicate to the teacher when she needs information repeated using a pre-determined signal at least 3 times daily during social studies class

Strategies for Convincing the IEP Team
By Janet DesGeorges (Odyssey, 2013)

The strategies that we used to convince the IEP team that our daughter needed additional support (i.e., a sign language interpreter) to access classroom communication included:

- **Objective testing/data**, i.e., *The Functional Listening Evaluation* indicated need

- **Subjective beliefs**, i.e., I, as a parent, was able to articulate to the team in a practical manner with support from research and articles what my daughter needed

- **Mastering details about who, what, when, why, and how** interpreting services would be used in Sara's particular case, including the need to build Sara's sign language skills in order to access interpreting effectively

- **Considering future needs**, as the IDEA specifies that the purpose of special education services is "to prepare students for further education, employment, and independent living" (U.S. Department of Education, 2004).

- **Agreeing to a time-limited pilot** to see if indeed this support service would be beneficial

The FLE Report

- Student Background Information
  - Current educational placement
  - Description of hearing levels including functional interpretation
  - Use of hearing instruments
  - Interventions
  - Educational history
- Classroom observations (if conducted)
- Purpose of FLE and test description, test modifications, if made
- FLE results
- Recommendations
  - Accommodations, modifications for classroom environment, teaching strategies

FLE Limitations
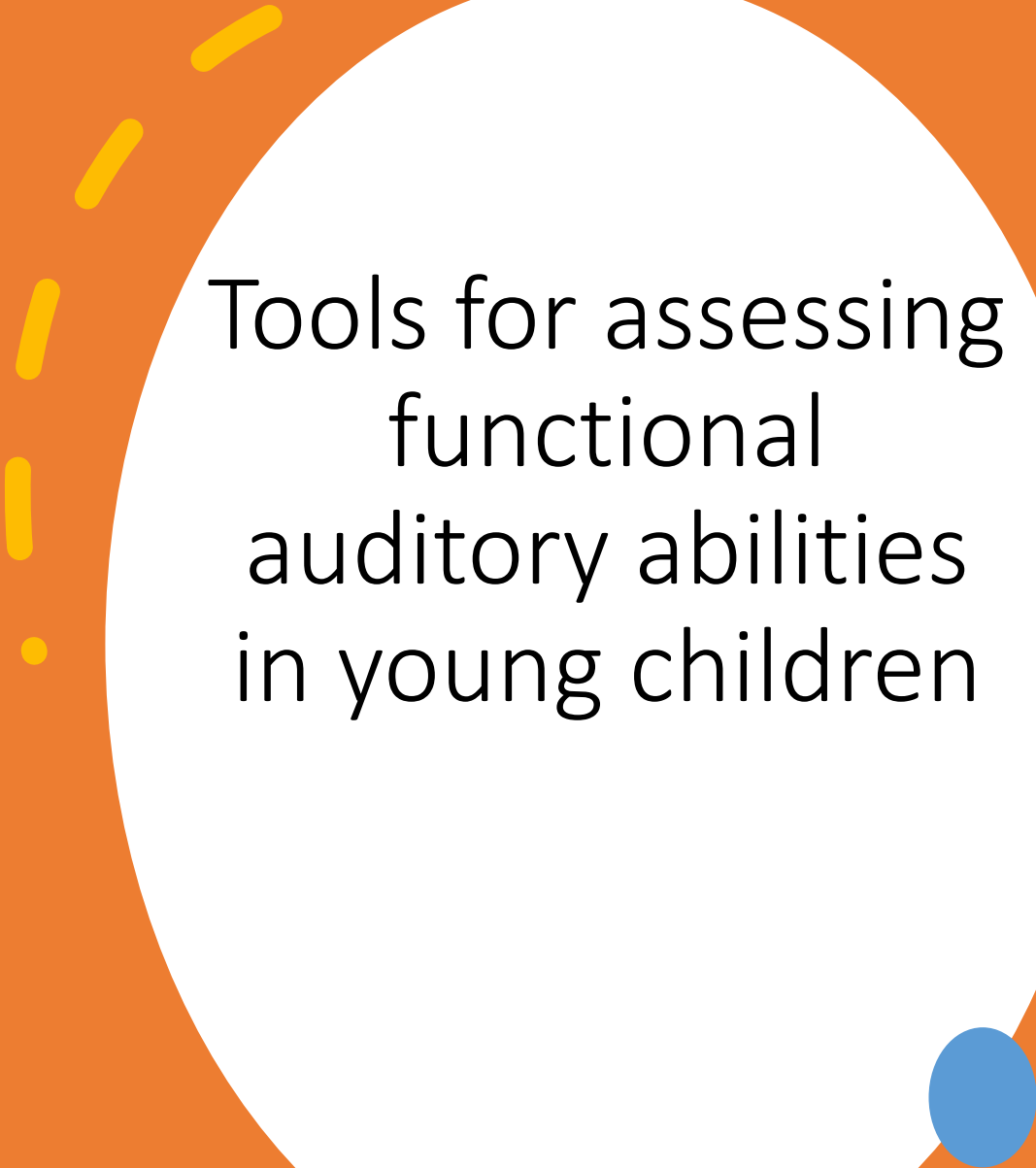
- Measures access to spoken language, not comprehension of the language

- May not be representative of all classrooms depending on room acoustics, student familiarity with vocabulary and content, speech of teacher

- Examiner differences in presentation

When to use Live vs Recorded FLE

- Consider noise level in classroom – if it seems excessive, do live version
- If student has significantly reduced audibility, the "comfortable" presentation level of Recorded FLE may be greater that the teacher's typical voice level – use live version
- If performance in noise is a primary concern – do the live version to get lower SNR (-5 dB)
- Male vs Female voice preference
- If older student, Recorded FLE may be too easy – use live version (nonsense phrases)
- If speech reading is a concern – do live version
- Need flexibility - do live version
- If examiner has an accent or other speech variation – use recorded version
- If examiner is deaf - use recorded version accommodated by a hearing person who can score the sentences
- If you are short on time – use recorded version
- Personal preference?

Tools for assessing functional auditory abilities in young children

SITUATIONAL OBSERVATION OF LISTENING FOR CHILDREN

Part 1. Without Amplification or with Personal Hearing Instruments

Name:_____ Date of Birth:_____

Completed by:_____ Date:_____

Rater: ☐ parent ☐ audiologist ☐ teacher/EI provider ☐ other-specify_____

Type of instrument: ☐ no amplification ☐ hearing aid ☐ cochlear implant ☐ bone conduction

☐ combination (describe)_____

Instrument brand/model:_____ Length of instrument use:_____

DIRECTIONS: Using structured observation, please rate the following skills based on the child behavior or performance on typical days. To score, subtract any NA (not applicable) items from total, and then determine percent for each situation as directed and total performance. Enter scores in the Score Box in the column, Hearing Instrument Only/Without Amplification, at the bottom of page 4.

	SELDOM		SOMETIMES		USUALLY	
1. Child responds to his/her name when spoken to:						
a. In a quiet room, within 3 feet	1	2	3	4	5	N
b. In a quiet room, at 10 feet	1	2	3	4	5	N
c. In a noisy room, within 3 feet	1	2	3	4	5	N
d. In a noisy room, at 10 feet	1	2	3	4	5	N
e. Without visual cues	1	2	3	4	5	N
f. From another room	1	2	3	4	5	N
g. Outside/in the community	1	2	3	4	5	N
2. Child attends to person speaking:						
a. In a quiet room, within 3 feet	1	2	3	4	5	N
b. In a quiet room, at 10 feet	1	2	3	4	5	N
c. In a noisy room, within 3 feet	1	2	3	4	5	N
d. In a noisy room, at 10 feet	1	2	3	4	5	N
e. Without visual cues	1	2	3	4	5	N
f. From another room	1	2	3	4	5	N
g. Outside/in the community	1	2	3	4	5	N
3. Child distinguishes between words that sound alike (e.g., boy for toy, ball for doll, or sun for fun):						
a. In a quiet room, within 3 feet	1	2	3	4	5	N
b. In a quiet room, at 10 feet	1	2	3	4	5	N
c. In a noisy room, within 3 feet	1	2	3	4	5	N
d. In a noisy room, at 10 feet	1	2	3	4	5	N
e. Without visual cues	1	2	3	4	5	N
f. From another room	1	2	3	4	5	N
g. Outside/in the community	1	2	3	4	5	N

	SELDOM		SOMETIMES		USUALLY	
4. Child responds accurately to simple spoken directions and/or questions (e.g., Where is Daddy? Bring me your bottle):						
a. In a quiet room, within 3 feet	1	2	3	4	5	NA
b. In a quiet room, at 10 feet	1	2	3	4	5	NA
c. In a noisy room, within 3 feet	1	2	3	4	5	NA
d. In a noisy room, at 10 feet	1	2	3	4	5	NA
e. Without visual cues	1	2	3	4	5	NA
f. From another room	1	2	3	4	5	NA
g. Outside/in the community	1	2	3	4	5	NA
5. Child comprehends oral instruction & concepts (e.g., put the ball under the table):						
a. In a quiet room, within 3 feet	1	2	3	4	5	NA
b. In a quiet room, at 10 feet	1	2	3	4	5	NA
c. In a noisy room, within 3 feet	1	2	3	4	5	NA
d. In a noisy room, at 10 feet	1	2	3	4	5	NA
e. Without visual cues	1	2	3	4	5	NA
f. From another room	1	2	3	4	5	NA
g. Outside/in the community	1	2	3	4	5	NA

Information on personal device, if used:

	SELDOM		SOMETIMES		USUALLY	
Personal device is easy to operate:	1	2	3	4	5	NA
Personal device has remained in good working order:	1	2	3	4	5	NA
Personal device is comfortable for child to use:	1	2	3	4	5	NA
Child tries to turn personal device off:	1	2	3	4	5	NA
Feedback (whistling noise) is present with ersonal device:	1	2	3	4	5	NA

Indicate types of activities the personal device is used for?

__ snacks   __ play   __ story-time/reading   __ playground   __ walks

__ listening/language/speech therapy   __ shopping   __ car   __ stroller

other (describe) _____

For which of the above activities do you think the personal device was most beneficial?

What do you think is the greatest benefit(s) of the personal device?

What do you think is the greatest challenge(s) with the personal device?

How has your communication with your child changed when using personal device?

SITUATIONAL OBSERVATION OF LISTENING FOR CHILDREN

> **Part 2. Amplification: Personal Hearing Instrument or Remote Microphone (RM) System**

Name:_____ Date:_____

Type of instrument (personal or RM System): _____

Instrument brand/model:_____ Length of use:_____

> **DIRECTIONS:** The rater should be the same as in the baseline condition and ratings determined under comparable conditions. Check the box for the conditions you are comparing: "No Amplification" to "Personal Hearing Instrument" or "Personal Hearing Instrument" to "RM system". To score, subtract any NA (not applicable) items from the total, and then determine the percentage for each situation and total performance. Enter scores in the appropriate Score Box columns. Subtract the percentages in the first column from the second column to obtain the perce of change.

	SELDOM		SOMETIMES		USUALLY	

1. Child responds to his/her name when spoken to:

	SELDOM		SOMETIMES		USUALLY	
a. In a quiet room, within 3 feet	1	2	3	4	5	NA
b. In a quiet room, at 10 feet	1	2	3	4	5	NA
c. In a noisy room, within 3 feet	1	2	3	4	5	NA
d. In a noisy room, at 10 feet	1	2	3	4	5	NA
e. Without visual cues	1	2	3	4	5	NA
f. From another room	1	2	3	4	5	NA
g. Outside/in the community	1	2	3	4	5	NA

2. Child attends to person speaking:

a. In a quiet room, within 3 feet	1	2	3	4	5	NA
b. In a quiet room, at 10 feet	1	2	3	4	5	NA
c. In a noisy room, within 3 feet	1	2	3	4	5	NA
d. In a noisy room, at 10 feet	1	2	3	4	5	NA
e. Without visual cues	1	2	3	4	5	NA
f. From another room	1	2	3	4	5	NA
g. Outside/in the community	1	2	3	4	5	NA

3. Child distinguishes between words that sound alike (e.g., boy for toy, ball for doll, or sun for fun):

a. In a quiet room, within 3 feet	1	2	3	4	5	NA
b. In a quiet room, at 10 feet	1	2	3	4	5	NA
c. In a noisy room, within 3 feet	1	2	3	4	5	NA
d. In a noisy room, at 10 feet	1	2	3	4	5	NA
e. Without visual cues	1	2	3	4	5	NA
f. From another room	1	2	3	4	5	NA
g. Outside/in the community	1	2	3	4	5	NA

4. Child responds accurately to simple spoken directions and/or questions; (e.g., Where is Daddy? Bring me your bottle):

	SELDOM		SOMETIMES		USUALLY	
a. In a quiet room, within 3 feet	1	2	3	4	5	NA
b. In a quiet room, at 10 feet	1	2	3	4	5	NA
c. In a noisy room, within 3 feet	1	2	3	4	5	NA
d. In a noisy room, at 10 feet	1	2	3	4	5	NA
e. Without visual cues	1	2	3	4	5	NA
f. From another room	1	2	3	4	5	NA
g. Outside/in the community	1	2	3	4	5	NA

5. Child comprehends oral instruction & concepts (e.g., put the ball under the table):

a. In a quiet room, within 3 feet	1	2	3	4	5	NA
b. In a quiet room, at 10 feet	1	2	3	4	5	NA
c. In a noisy room, within 3 feet	1	2	3	4	5	NA
d. In a noisy room, at 10 feet	1	2	3	4	5	NA
e. Without visual cues	1	2	3	4	5	NA
f. From another room	1	2	3	4	5	NA
g. Outside/in the community	1	2	3	4	5	NA

Information on RM system use:

RM system is easy to operate:	1	2	3	4	5	NA
RM system has remained in good working order:	1	2	3	4	5	NA
RM system is comfortable for child to use:	1	2	3	4	5	NA
Child tries to turn RM system off:	1	2	3	4	5	NA
Feedback (whistling noise) is present with RM system:	1	2	3	4	5	NA

Indicate types of activities the RM system is used for?

__ snacks   __ play   __ story-time/reading   __ playground   __ walks

__ listening/language/speech therapy   __ shopping   __ car   __ stroller

other (describe) _____

For which of the above activities do you think the RM system was most beneficial?

What do you think is the greatest benefit(s) of the RM system?

What do you think is the greatest challenge(s) with the RM system?

How has your communication with your child changed when using RM system?

Score Box Analysis

Condition Score:	☐ Hearing Instrument Only ☐ No Amplification	☐ Hearing Instrument ☐ RM system	Percent Change
Quiet (a,b):	____/ (50) = ☐%	____/(50) = ☐%	☐%
Noise (c,d,g):	____/(75) = ☐%	____/(75) = ☐%	☐%
Auditory only (e):	____/(25) = ☐%	____/(25) = ☐%	☐%
Distance (b,d,f):	____/(75) = ☐%	____/(75) = ☐%	☐%
Total Score (1-5)	____/(175) = ☐%	____/(175) = ☐%	☐%

Early Listening Function LING (ELFING)

ELFING

Ling Sound
Listening Bubble Checklist
For Young Children

Child_____ Date(s)_____ Age_____ Hearing Age_____Evaluators_____

As a child gets ready to exit early intervention, the interventionist can work with the family to complete the *Early Listening Function (ELF)* checklist. The *ELF* is a discovery tool that provides 12 listening activities that are presented at varying distances ranging from responding to someone from the next room (>15 feet) to responding at a distance of only 6 inches. In practical terms, the task is to identify the size of the child's listening bubble. The *ELF* procedure has been adapted below so that, in addition to the listening activities presented, the child can be asked to point to or repeat the Ling sounds at the different distances. Care must be taken that no cues are given, such as allowing the child to view the speaker's face or the child detecting the breath of the speaker when the /th/ and /s/ are presented from a close distance. It can be assumed that if a child can respond to a sound at a far distance that he will also be able to detect it at a close distance. In other words, if a child can identify the EE sound at 10 feet then it is not necessary to see if he can do so at 6 feet, 3 feet and 1 foot. One result of this process is that it is likely find that the child will need to be quite close to the speaker to detect/identify /voiceless th/ and /s/ sounds. In other words, these sounds become undetectable for many children from just a few feet away. This is a powerful illustration of the necessity of close proximity, or the listening bubble concept. Refer to the ELF for more information on procedure.

Listening to Ling Sounds at Different Distances

Based on the child's responses to sound, place Y (Yes), M (Maybe/Inconsistent), or N (No) in the boxes.
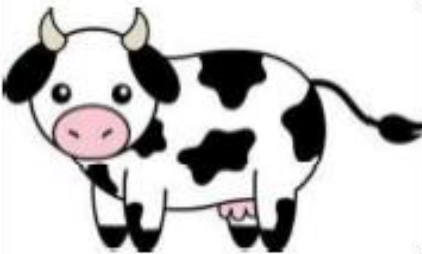
QUIET ☐	NOISE ☐ Source_____		AMPLIFICATION _____		
Ling Sound	**15 FEET** Next Room	**10 FEET**	**6 FEET**	**3 FEET**	**1 FOOT**
OO					
AW					
EE					
M					
SH					
S					

Comment:

QUIET ☐	NOISE ☐ Source_____		AMPLIFICATION _____		
Ling Sound	**15 FEET** Next Room	**10 FEET**	**6 FEET**	**3 FEET**	**1 FOOT**
OO					
AW					
EE					
M					
SH					
S					

Comment:

AHHH

OOOO

EEEE

SHHH

SSSS

MMMM

TH

QUIET

Tips

- You must use the same procedures across all conditions so that you can evaluate the condition effect
- Practice ahead of time
- Use the SLM app to monitor your voice level- it will be the same for all conditions
- Ask the classroom teacher to score the student's responses on the worksheet during the FLE
- Get familiar with the process; it can be adapted to address other areas of concern
- Use the data to advocate for accessibility for students with auditory disorders

Case Studies

- : Mandy Longo at The Resource Materials and Technology Center for the Deaf/Hard of Hearing (RMTC-DHH), St Augustine, FL (FLE-2016)

Case Study 1: HA vs no HA
Case Study 2: HAT comparison (CADS- Personal FM)
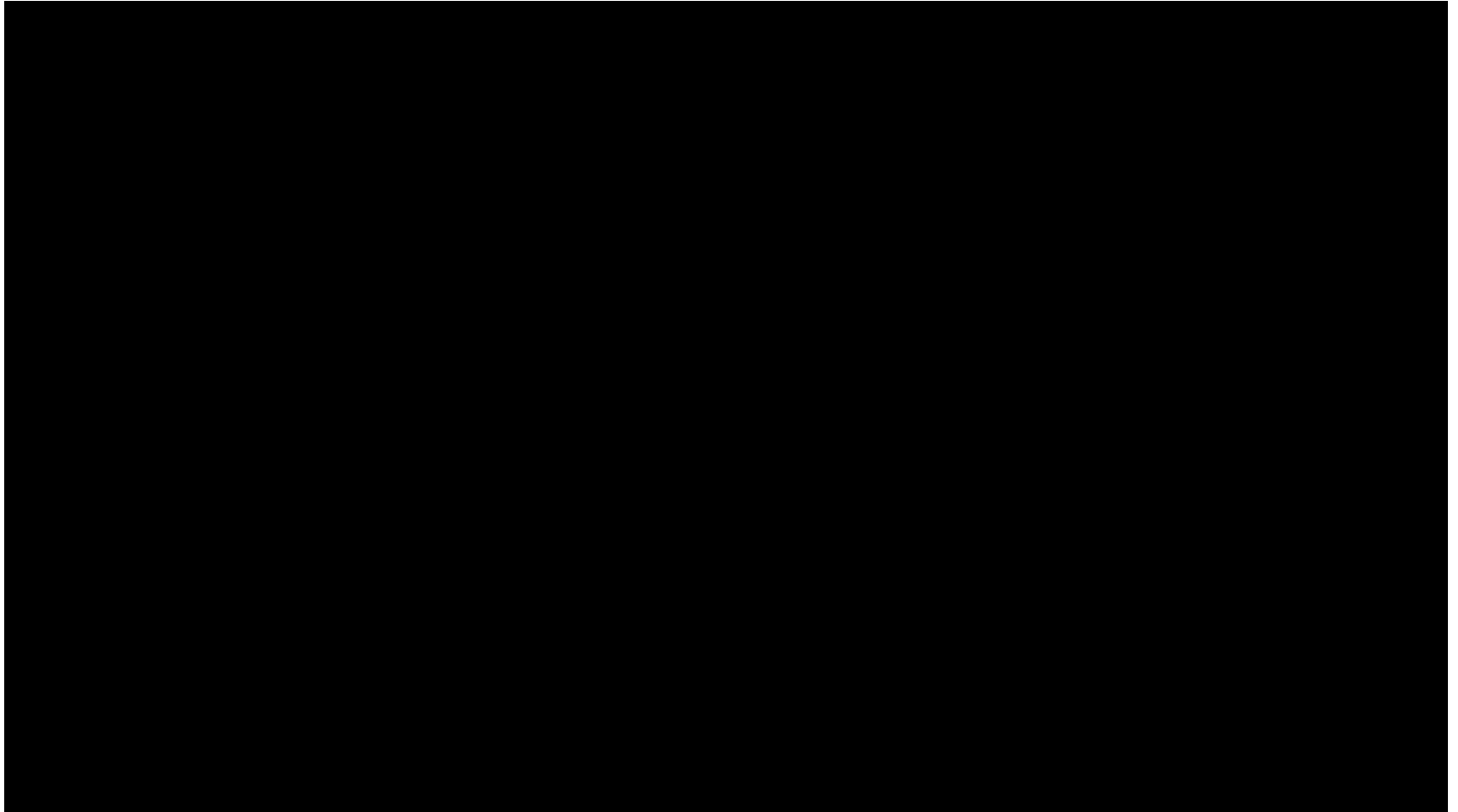
Using Modified FLE to Evaluate Benefit from Interpreter

- All conditions: 12 foot distance with noise, repeated single words to see effect of unpredictable context;

- sign language interpreter: 6 ft in front of student, student could request 2nd sign presentation, if no sign, word was fingerspelled

- CADS speaker: 8 ft behind student
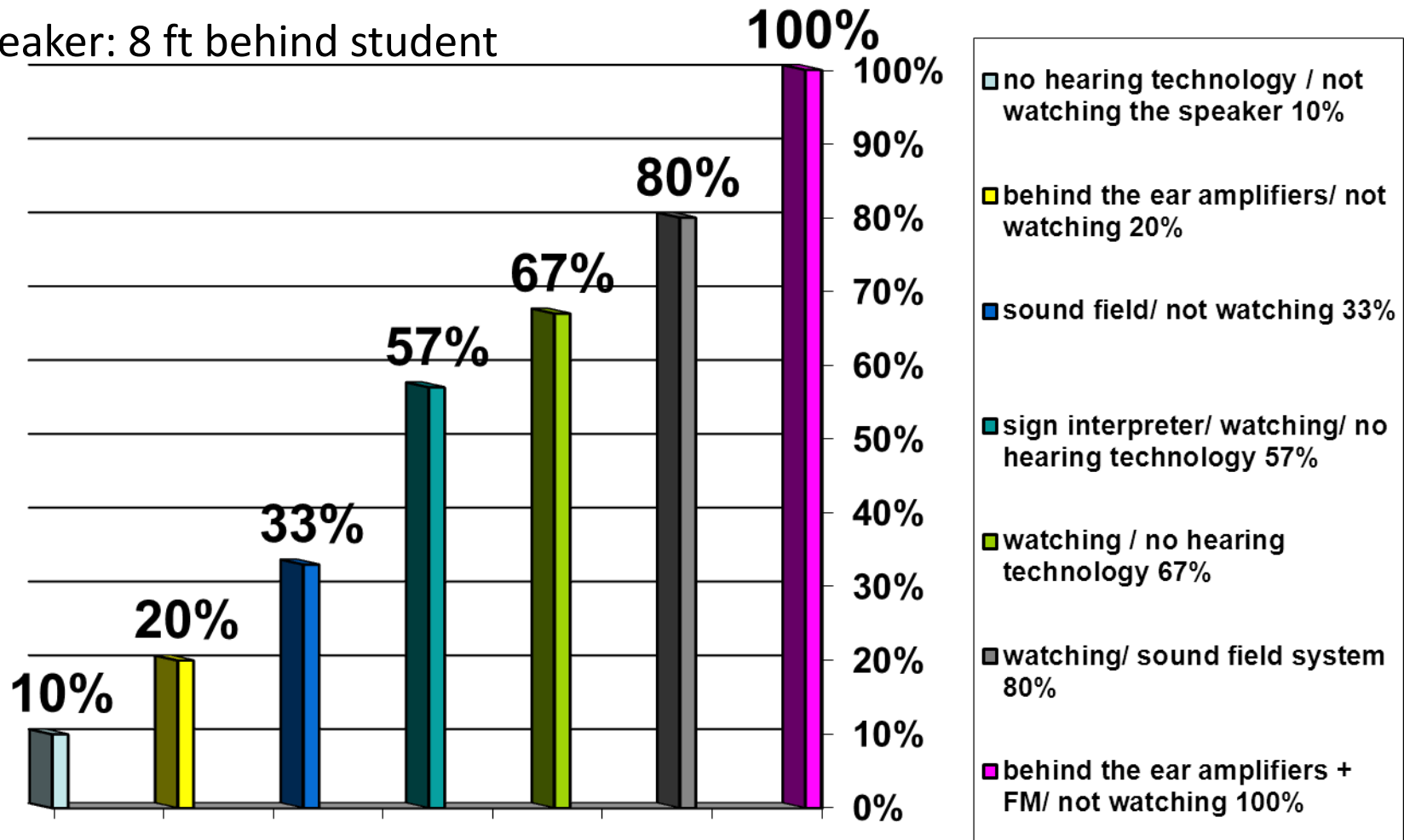
Legend:
- no hearing technology / not watching the speaker 10%
- behind the ear amplifiers/ not watching 20%
- sound field/ not watching 33%
- sign interpreter/ watching/ no hearing technology 57%
- watching / no hearing technology 67%
- watching/ sound field system 80%
- behind the ear amplifiers + FM/ not watching 100%

Bar values: 10%, 20%, 33%, 57%, 67%, 80%, 100%

3rd grade student with autism and normal hearing acuity. Children's Common Phrases used due to deficits in language and literacy including auditory processing.

Functional listening scorebox

	close/quiet	close/noise	far/quiet	far/noise
auditory-visual	1: 80	3: 75	8: 70 / 12:	5: 65 / 9:
auditory	2: 75	4: 75	7: 70 / 11:	6: 65 / 10:

Interpretation matrix

Noise

	quiet	noise
close – aud	2: 75	4: 75
close – aud/vis	1: 80	3: 75
far – aud	7: 70	6: 65
far – aud/vis	8: 70	5: 65
Average scores:	73.8 % quiet	70.0 % noise

Distance

	close	far
quiet – aud	2: 75	7: 70
quiet – aud/vis	1: 80	8: 70
noise – aud	4: 75	6: 65
noise – aud/vis	3: 75	5: 65
Average scores:	76.3 % close	67.5 % distant

Visual input

	aud/vis	aud
close – quiet	1: 80	2: 75
close – noise	3: 75	4: 75
far – noise	5: 65	6: 65
far – quiet	8: 70	7: 70
Average scores:	72.5 % aud/vis	71.3 % aud

3rd grade student with autism and normal hearing acuity. Children's Common Phrases used due to deficits in language and literacy including auditory processing.

Distance, noise and lack of visuals have an impact on CT's speech perception. Recommendations:

- CT should be seated closer to the teacher. The class is in a U shape already, so sitting closer to the teacher will give him greater access to the content.

- The teacher should use a RM system when lecturing. This will help CT to be able to identify the teachers voice when there is other classroom noise.

- Teacher should incorporate visuals in the lecture that can help CT make connections between the speech and the content.

FLE Case Study: Single –Sided Deafness Speech/Language Evaluation

- CELF-5
  - Significant difference in understanding language and ability to express himself
  - Significant difference between semantic knowledge and ability to apply memory to language tasks
- Summary: Difficulty with the metalinguistic skills needed to interpret and utilize complex language; as a result, we would expect difficulties with both processing and production of language to have a significant negative impact on the performance of the complex academic tasks required of adolescents.

Language Indexes	Standard Score*	Percentile Rank
Core Language	107	68
Receptive Language	105*	63
Expressive Language	89*	23
Language Content	116**	86
Language Memory	83**	13

Mean = 100, with standard deviation of +/-15
*Statistically significant difference
** Statistically significant difference

Test Effort

- Struggled to create sentences: frustration, banging his chin on the table and actually crying.

- Productions characterized by false starts, stopping, restarting, and very long pauses while he reformulated his sentences mentally; frequently made multiple self-corrections including after an item had passed.

- "In a classroom, if ███ is rethinking things, the rest of the class is moving ahead, and he is likely to be frequently "lost" throughout his school day. Overall, ███ scores may appear to be better than his actual functioning, as a great deal of effort and self-correction was noted, and in a rapidly-paced classroom, he does not have the luxury of time that the testing environment affords."

FLE Case Study Single-Sided Deafness Functional Listening Evaluation

Averaged Results: Common Phrases vs Nonsense Phrases

- Common Phrases (able to use linguistic knowledge to fill in the blanks)
  - Effect of Noise – quiet 99%, noise 96%
  - Effect of Distance – close 99%, distant 96%
  - Effect of Visual Input – auditory + visual 98%, auditory only 98%
- Nonsense Phrases (ability to understand words without topic knowledge)
  - Effect of Noise – quiet 74%, noise 51%
  - Effect of Distance – close 66%, distant 59%
  - Effect of Visual Input – auditory + visual 66%, auditory only 59%

SPEECH UNDERSTANDING NONSENSE PHRASES	Close/quiet	Close/noise Effect of noise	Distant/quiet Effect of distance	Distant/noise Effect of noise + distance
Auditory and visual	70%	65%	75%	50%
Auditory only Effect of loss of visual input	70%	60%	80%	30%

FLE Case Study Single-Sided Deafness Classroom Participation Questionnaire

- Stinson, Long, Reed, Kreimeyer, Sabers, Antia (2006).

- Desirable Ratings: 3.5-4.0, Negative Affect 1.0-2.0

- Available from www.adevantage.com

Desirable ratings are in the 3.5-4 range.

1 - Almost Never   2 - Seldom   3 – Often   4 - Almost Always

Subscale	Question Number	Questions	Ratings 1	2	3	4
Understanding Teacher (4)	1	I understand my teacher.			■	
	9	I understand my teacher when she gives me homework assignments.		■		
	10	I understand my teacher when she answers other students' questions.			■	
	11	I understand my teacher when she tells me what to study for a test.			■	
		Mean of the Subtotal 11 / 4 = **2.75**				
Understanding Student (4)	2	I understand the other students in class.			■	
	3	I join in class discussions.		■		
	12	I understand other students during group discussions.		■		
	13	I understand other students when they answer my teacher's questions.			■	
		Mean of the Subtotal 14 / 4= **2.5**				
Positive Affect (4)	4	I feel good about how I communicate in class.		■		
	8	I feel relaxed when I talk to my teacher.	■			
	14	I feel happy in group discussions in class.	■			
	15	I feel good in group discussions in class.	■			
		Mean of the Subtotal 5 / 4 = **1.25**				

Desirable ratings are in the 1-2 range.

Subscale	Question Number	Questions	Ratings 1	2	3	4
Negative Affect (4)	5	I feel frustrated because it is difficult for me to communicate with other students.			■	
	6	I get upset because other students cannot understand me.				
	7	I get upset because my teacher cannot understand me.	■			
	16	I feel unhappy in group discussions in class.			■	
		Mean of the Subtotal 10 / 4 = **2.5**				

3.25

3.67

3.25

1.5
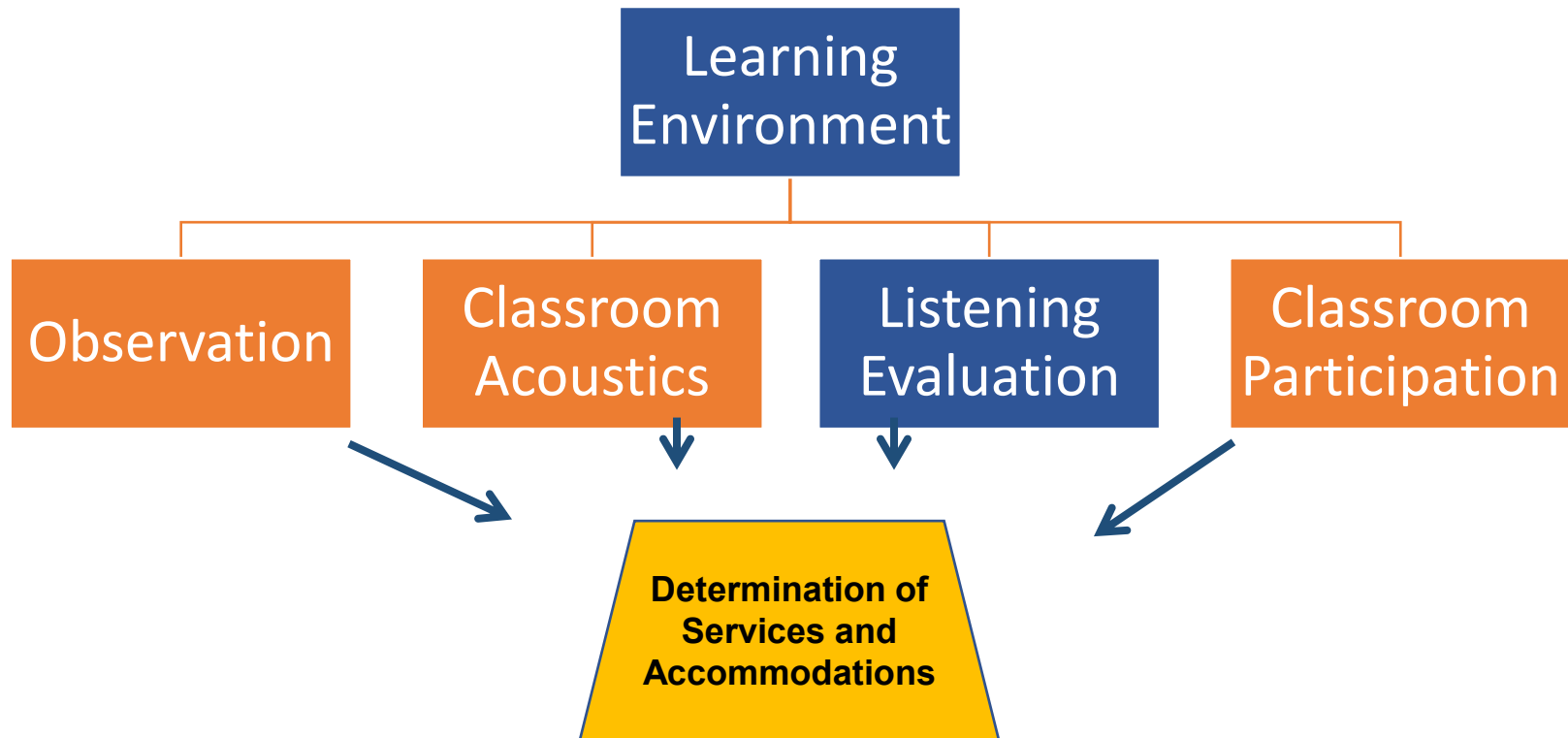
SSD Summary -

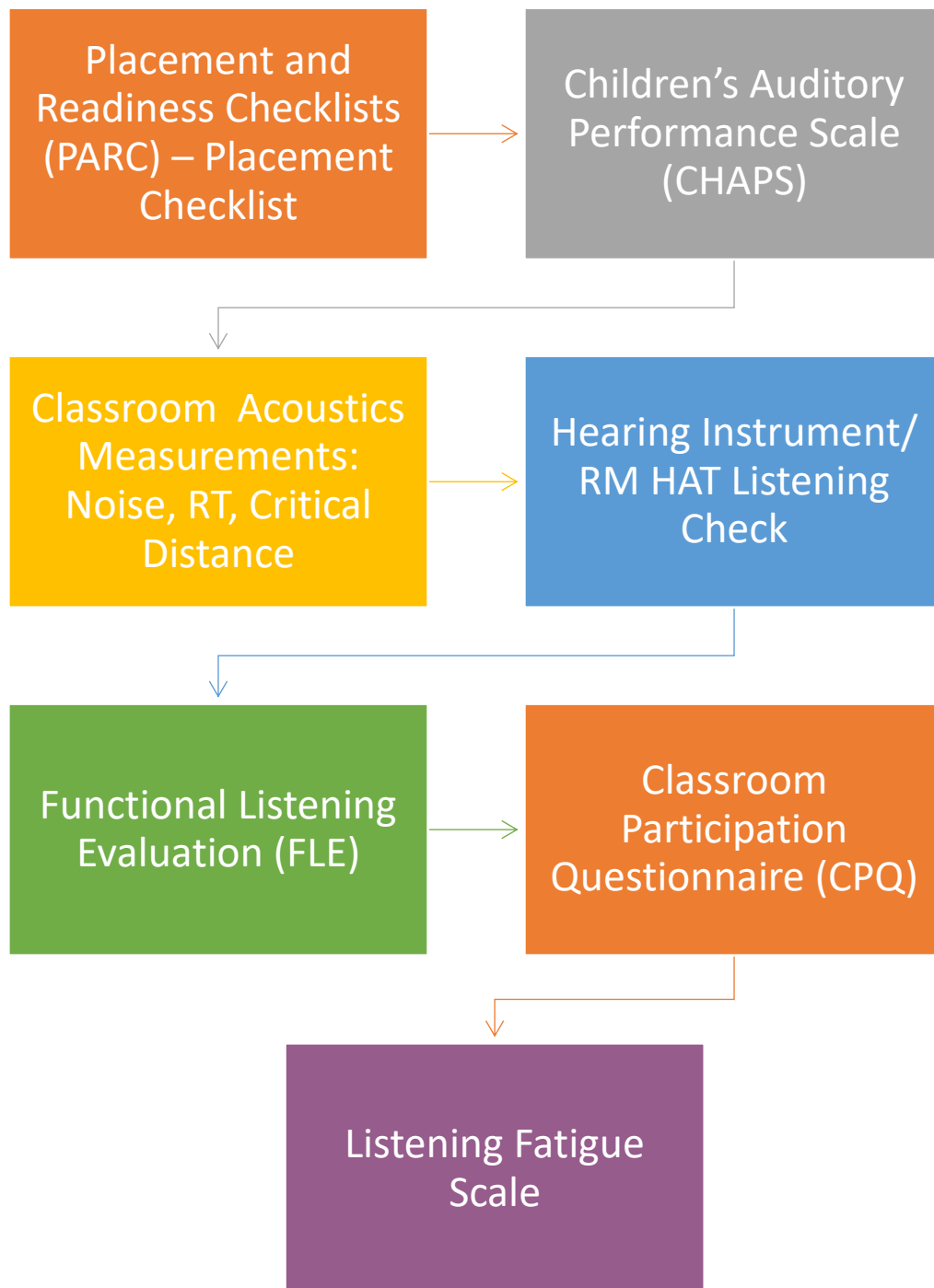"An unawareness of the effects that SSD can have on a child's academic performance can lead to a reactive or "failure-based" approach towards intervention. By recognizing the significant effect of ██████ hearing loss, support and intervention efforts can be proactive and can lead to successful academic and social functioning". (SLP)

Classroom Listening Assessment Overview

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┌─────────────────────────┐         ┌─────────────────────────┐
│ Placement and           │         │ Children's Auditory     │
│ Readiness Checklists    │────────▶│ Performance Scale       │
│ (PARC) – Placement      │         │ (CHAPS)                 │
│ Checklist               │         │                         │
└─────────────────────────┘         └─────────────────────────┘
                                                 │
          ┌──────────────────────────────────────┘
          ▼
┌─────────────────────────┐         ┌─────────────────────────┐
│ Classroom  Acoustics    │         │ Hearing Instrument/     │
│ Measurements:           │────────▶│ RM HAT Listening        │
│ Noise, RT, Critical     │         │ Check                   │
│ Distance                │         │                         │
└─────────────────────────┘         └─────────────────────────┘
          ┌──────────────────────────────────────┘
          ▼
┌─────────────────────────┐         ┌─────────────────────────┐
│ Functional Listening    │         │ Classroom               │
│ Evaluation (FLE)        │────────▶│ Participation           │
│                         │         │ Questionnaire (CPQ)     │
└─────────────────────────┘         └─────────────────────────┘
                                                 │
                              ┌──────────────────┘
                              ▼
                    ┌─────────────────────────┐
                    │ Listening Fatigue       │
                    │ Scale                   │
                    └─────────────────────────┘
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Summary: Critical Concepts for Children who use Audition for Listening and Learning

- Audiogram Interpretation
  - Audibility only opens the door to listening and learning
  - Audibility vs intelligibility
  - Degree of HL does not equal auditory access
  - Make the audiogram meaningful
- Hearing instrument fitting is an essential first step to audibility; it must be done correctly (OCCHL)
- Consider the role of classroom acoustics
- Evaluate functional listening in the classroom
- Advocate for the benefit of RM-HAT
  - Auditory access in the classroom
  - +15-20 SNR
  - Proper implementation & support to teachers
- Provide students opportunities to learn about their hearing and support development of self-determination and self-advocacy skills

Other FLE Training Resources

• Ohio Outreach Center for Deafness and Blindness
https://deafandblindoutreach.org/m/1465

Administering the Functional Listening Evaluation
A How-To Module
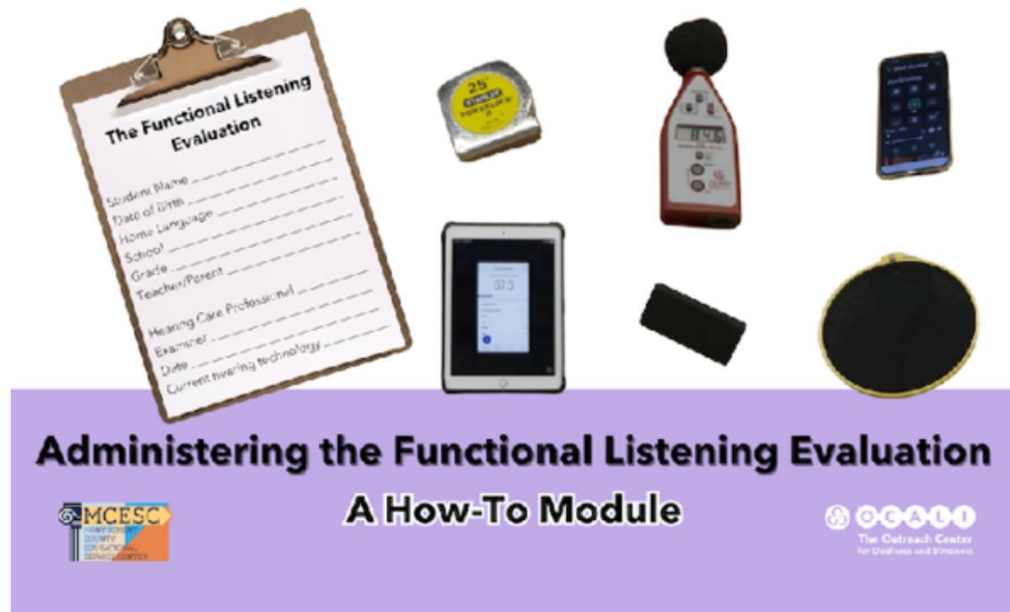
The Functional Listening Evaluation originally published by Cheryl DeConde Johnson, Ed.D., can provide critical information to support a learner's access across educational environments, but training on how to administer this assessment is variable in higher education programs. This module was created to walk you through the purpose of a Functional Listening Evaluation, the steps in conducting one, the materials you will need in order to administer, and how to utilize the data to determine appropriate accommodations. A demonstration of the assessment along with the use of case studies will deepen your learning and provide you with the information necessary to administer the assessment with your own learners.