



# Systematizing Functional Listening Evaluations of Toddlers

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# Disclosures



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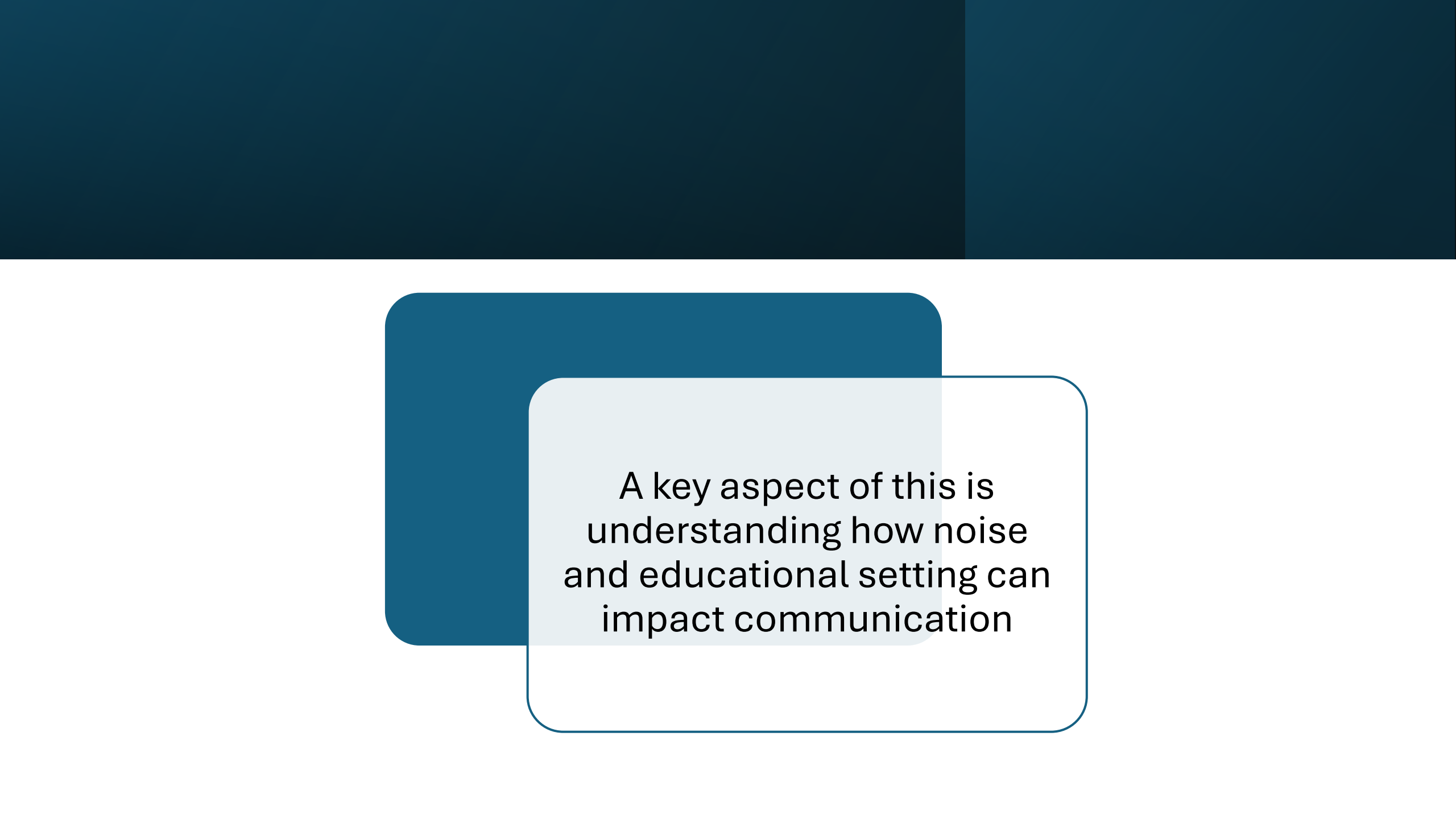
# Background

Important for educational teams to consider ecological validity when conducting transition meeting from Part C to Part B services

(Carden et al., 2025)

# Ecological validity

How well an assessment reflects real-world listening environments



A key aspect of this is  
understanding how noise  
and educational setting can  
impact communication

# Contrast these settings



# Listening Challenges in Preschool Environments

Background noise

Movement and play

Multiple speakers

Variable distance

Reverberation

Inconsistent visual access

# What tools do teams have to do this?



FUNCTIONAL LISTENING EVALUATION (FLE; DE CONDE  
JOHNSON, 2013)



[HTTPS://WWW.PHONAKPRO.COM/CONTENT/DAM/PHONAKPRO/GC\\_HQ/EN/RESOURCES/COUNSELING\\_TOOLS/DOCUMENTS/CHILD\\_HEARING\\_ASSESSMENT\\_FUNCTIONAL\\_LISTENING\\_EVALUATION\\_FLE\\_2017.PDF](https://www.phonakpro.com/content/dam/phonakpro/gc_hq/en/resources/counseling_tools/documents/child_hearing_assessment_functional_listening_evaluation_fle_2017.pdf)

## Physical set-up of test environment

Due to room size and instructional style variations, the occupied classroom should be observed to determine maximum listening distances. Record this as the "far" distance on the Summary and Interpretation Form. When setting up for the close conditions, measure the 3 foot distance from the student's ear to the examiner's mouth.

**Close:** Noise and examiner are 3 feet in front of the student (see Diagram A).

**Far:** Noise remains 3 feet in front of the student; the examiner moves back to the pre-determined distance (12 to 15 feet in this example) from the student (see Diagram B).

Diagram A – Close

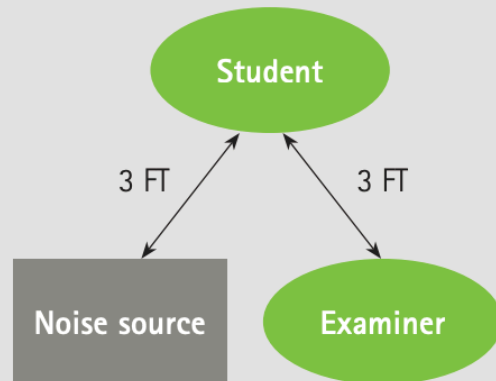
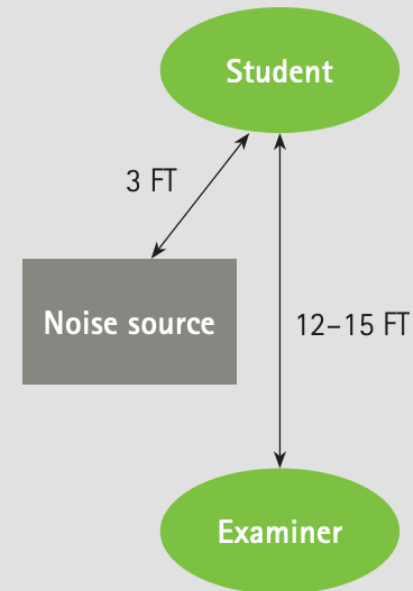


Diagram B – Far



# Advantages of the FLE

Evaluates listening in **real-life conditions**

Identifies the Impact of **Noise, Distance, and Visual Access**

Helps **demonstrate technology benefits**

Supports **accommodation decisions**

Uses **structured, repeatable protocol**

# Limitations of the FLE

Was not designed for toddlers in a pre-school setting:

Tasks **require sustained attention** for a long period of time

Requires **verbal repetition of sentences**

**Listening scenarios are not ecologically valid** for toddler communication

Play-based interaction  
Joint attention context

# Challenges of implementation with Part C



CONTROL OF  
ENVIRONMENT



EXPERIENCE/EXPERTISE  
OF THOSE TAKING DATA



TIME

# FLE Implementation Example

## Repeat sentence:

- "The dog is running in the yard."

## Toddler response:

- silence
- repeats only one word
- disengages

## But in play:

- "Put the hat on Mr. Potato Head!"
  - Child responds immediately.

# Pilot

- This study aims to develop a structured, ecologically valid assessment tool for evaluating the listening abilities of DHH children aged 2–3 years in natural preschool settings

# What is needed

Description  
vs. control

Flexibility

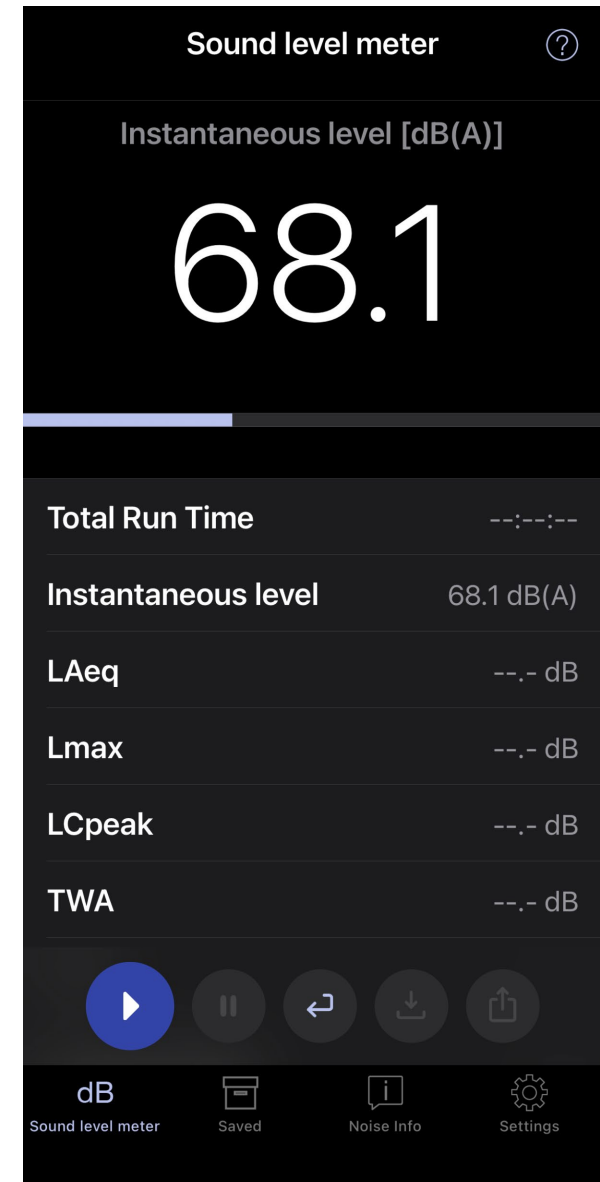
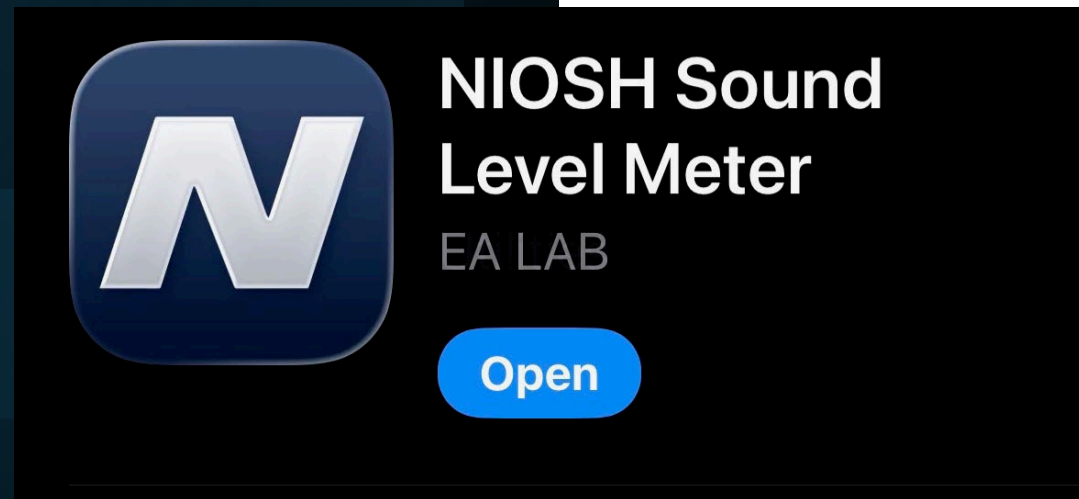
# Tools that can be used

Noise App on  
phone

Mr. Potato  
Head task

Observation(s)

# Noise apps on phone



# Sound Levels in Preschool

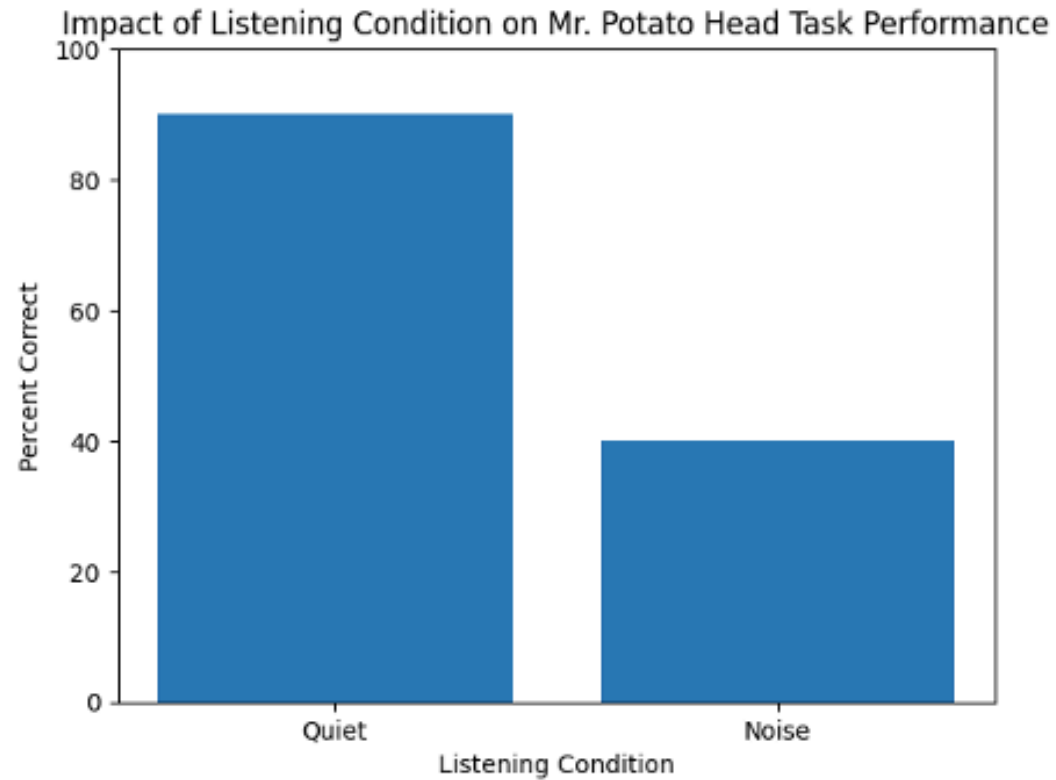
Activity	Average dB Level	What is sounds like
Very quiet classroom	35-40 dB	Quiet library
Recommended level for learning	<35 dB	Ideal listening environment
Typical preschool during structured activity	45-65 dB	Calm conversation(s)
Small group play center	55-75 dB	Busy typical classroom
Free play/transition	65-75 dB	Loud classroom
Very noisy activities (indoor recess, music, clean up)	75-85 dB	Very loud/difficult listening

(Brachtl & Trimmel ,2023; Degotardi et al., 2025)





# Results



- Quiet: Student focused and followed directions (9/10 correct)
- Noise: Student distracted, often paused or stared before responding (4/10 correct)

# Observation Tools

## Classroom-at-a-Glance: Observation Checklist

Student: \_\_\_\_\_ Age: \_\_\_\_\_ Grade: \_\_\_\_\_ Date: \_\_\_\_\_

School: \_\_\_\_\_ Teacher: \_\_\_\_\_ Observer: \_\_\_\_\_

### I. Physical Characteristics

#### 1. Type of School

- open space
- modified open space
- traditional
- other \_\_\_\_\_

#### 2. Room Size

- large
- medium
- small

#### 3. Number of Students in Class \_\_\_\_\_

#### 4. Number of Teacher Aides

Part-time \_\_\_\_\_ Full-time \_\_\_\_\_

#### 5. Type of Seating

- desks
- tables and chairs
- combination
- other \_\_\_\_\_

#### 6. Lighting

- adequate
- inadequate

#### 7. Windows

- complete wall
- individual windows
- window/glare treatment
- other \_\_\_\_\_

#### 8. Floor Surface

- rubber tile
- concrete
- hardwood
- carpeting

#### 9. Wall Surface

- concrete/brick
- wood
- wallboard
- other \_\_\_\_\_

#### 10. Ceiling Surface

- acoustical tile
- other \_\_\_\_\_

#### 11. Writing Boards

- chalkboards
- whiteboards
- combination
- accessible to student

#### 12. Room Location

- near external noise sources

#### 13. Room Noise Level

- high  average  quiet
- SPL \_\_\_\_\_ dBA

#### 14. Classroom Technology

- Smart Board
- video monitor
- computers (# \_\_\_\_\_)
- captioning
- other \_\_\_\_\_

### II. Teacher-Student Characteristics

#### 15. Student's Seating

- appropriate and flexible
- inappropriate

#### 16. Teacher's Speech/Voice

- Level:  loud  average  soft  
Modulation:  good  problem  
Articulation:  good  problem  
Voice quality:  good  problem  
Speechreading:  good  problem

#### 17. Teacher's Speaking Manner

- faces student when speaking
- moves while speaking
- uses hand gestures
- talks with back to class

#### 18. Student's Attention to Speaker/

##### Interpreter

- always
- usually
- sometimes
- rarely
- varies—describe \_\_\_\_\_

#### 19. Student's Speech/Voice

- Intelligibility:  good  problem  
Loudness:  loud  average  soft

#### 20. Student's Speechreading Skills

- does not speechread
- skills are effective
- skills are emerging

#### 21. Student's Class Participation

- volunteers information
- answers questions accurately most of the time
- answers questions inaccurately most of the time
- asks questions when he/she does not understand
- pretends to understand when he/she does not understand
- does not participate

#### 22. Friends of Student

- none
- some

#### 23. Student's Social Interactions

- tries to interact with other students
- other students try to interact with student
- joins group activities
- plays alone

#### 24. Student's Attendance

- regular
- irregular
- # of days missed this year \_\_\_\_\_

#### 25. Amplification

- none
- personal hearing instrument:
  - HA  CI
  - other \_\_\_\_\_
- HAT:
  - remote Mic
  - classroom (CADS)
  - targeted area
- used consistently
- used inconsistently

# Discussion

Understanding impact of noise is an essential part determining of ecological validity and child's performance during transition to Part C to Part B

Teams need to understand tools (informal and formal) to capture this

Advantage of including into graduate training to experience this firsthand

# Future Directions

- Refine structured protocol
- Examine reliability across providers
- Test across preschool environments
- Develop guidance for early intervention teams

# References

