

FLE FAQ¹

General Information about the FLE

Why was the FLE developed?

- Developed in 1993 in response to IDEA functional evaluation requirement by Johnson & Von Almon
 - 34 CFR 300.6 Assistive technology service includes
 - 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?

- To identify factors affecting classroom listening ability
- To identify listening and comprehension under various classroom conditions
- To provide evidence for accommodations
- To validate benefits of RM systems
- Can the FLE be used to determine a student's eligibility for special education?
 - It can show the educational impact from auditory access (or lack thereof); but it is only one assessment in the text battery

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

- Informs accommodations
- Informs classroom communication management strategies
- Identifies student services (self-determination/self-advocacy, communication access strategies)

Who can administer the FLE?

- Educational Audiologists
- Speech and Language Pathologists
- Teachers of the Deaf/Hard of Hearing

¹ Prepared by Cheryl DeConde Johnson, 2025, available at www.adevantage.com/resources

- Training required for administration and interpretation of results

Who are candidates? Ages?

- Students with hearing differences
- Students with auditory processing concerns
- Standard administration can generally be completed with kindergarten-age students and older (See adaptations below for other populations)

Are there norms for test performance?

- **There are no norms because there are too many variables related to levels of hearing and listening abilities. In the FLE the student is their own control across the test conditions to compare the impact of noise, visual access, and distance. Therefore, the variables of test stimuli, type of noise, and speech and noise levels, and close and far distances, must remain constant throughout the assessment.**

How often are assessments completed?

- Ideally annually as classrooms, teachers, expectations, language complexity changes each year

Is parent permission required?

- Any time a student is singled out for testing, parent permission is required. An FLE could be part of the student's eligibility assessment or annual review for which the parent provides consent.

Preparation and Set-up

How do I decide whether to use single words, phrases, or sentences?

- Stimuli need to be developmentally appropriate
 - Receptive: Minimal pairs, words, phrases, sentences
 - Expressive: Spoken (repeat), picture or object pointing
 - Try whatever works
- Speech articulation: Can you understand the student's speech?
- Stimuli need sufficient length to reflect acoustic parameters of classroom without impacting memory to repeat the stimulus
- Consider difficulty level: Common Phrases vs Nonsense phrases
 - **Nonsense phrases illustrate impact on auditory comprehension when context is removed or student learning new content with new vocabulary**
 - Nonsense phrases are preferred for mild/unilateral hearing levels
- Number of stimuli:

- Consider desired conditions, child's attention capacity
 - Format contains 8 basic conditions + 4 repeated for RM HAT
- Stimulus materials in other languages:
 - It is permissible to use lists that are in Spanish or other foreign languages because you are comparing the student's performance across the variables of noise, distance and visual access. This should not be impacted by various tonal patterns of other languages.

What sound level meter app is recommended to measure and monitor noise and speech levels?

- The NIOSH SLM app is free and well calibrated. Whichever SLM is selected it must have an "A" weighting option. <https://www.cdc.gov/niosh/noise/about/app.html>

How do I choose a classroom?

- Consider one where instruction utilizes a significant amount of discourse and/or one where the student has difficulty with their listening and comprehension
- Observe instruction and classroom management; document greatest distance from the student when instruction is delivered
- Conduct classroom acoustics measurements for noise levels and reverberation time; or ask teacher to complete a questionnaire regarding basic noise and reverberation elements in the classroom

What variations can be made when conducting the FLE?

- Modifications that may be made include:
 - Noise level: goal is to simulate classroom discourse levels (+5 to -5 dB is standard SNR presentations); for classrooms with elevated ambient noise levels you may increase noise and speech by 5 dB for +5 speech and -5 SNR presentations.
 - Distance in classroom from teacher – increase the distance from standard 10-12 feet to observed distance
 - Teacher's voice (soft/loud, accent) – consider asking teacher to repeat selected stimuli for a few conditions for comparison to tester's voice; adjust target from 50
 - Age/Developmental Level options:
 - Decrease number of stimuli to 10/condition
 - Decrease number of conditions to ones most relevant to student's situation
 - Picture pointing task using a standard word identification protocol (e.g., WIPW, NU-CHIPS)

- Collect observational data using the “Situational Observation of Listening for Children”

When should I use the Live vs the 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 than 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 with 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 student uses recorded information as part of their instructional materials or assessments, use Recorded FLE to illustrate degradation that can occur with recorded material.
- 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?

What are the steps to conduct the FLE? (see training video for set-up and presentation demonstrations)

1. Obtain the necessary materials (stimulus lists, acoustic hoop, sound level meter app, measuring tape, classroom multi-talker noise audio file, optional Bluetooth speaker, FLE protocol form, computer/ipad/notebook)
 - a. Download the auto-calculating protocol form prepared by Phonak:
www.adevantage.com/resources
 - b. Complete demographic and other data fields including any variations made in the protocol
2. Prepare the testing space with appropriate distances between tester and student
3. Determine the presentation and noise levels
4. Check the student’s personal hearing instruments (if used) and RM systems (if used in the FLE)
5. Provide instructions to the student before beginning
6. Presentation reminders:
 - All variables must stay the same except the condition that is being evaluated
 - Assess with student’s typical hearing mode, including amplification if used

- When RM HAT validation is desired, repeat distance conditions
- Use the predetermined condition order which is intended to start easy (close/quiet/aud-visual) and finish easy (distance/quiet/aud-visual)
- Use normal speaking rate and inflection

Can I perform an FLE remotely?

- Yes, see instructions for the remote delivery of the FLE (www.adevantage.com/resources)

What are the administration procedures for the Recorded FLE?

- 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>

Scoring Procedures, Interpretation, and Recommendations

What are the scoring procedures?

- Document all variations
- Score percent correct according to procedures for materials used
 - Common phrases – total phrase score is recommended
 - Nonsense phrases – all words must be correct in response
- Transfer percent correct scores to interpretation matrix if auto-calculating form not used
- Review Interpretation Matrix for average effects of conditions including with RM if assessed
- Recorded FLE – follow instructions, scores are based on number of words current for each sentence; enter scores into FLE Protocol Form

How do I use the Interpretation Matrix to explain the results?

- Compare the effects of condition scores as shown in the matrix
- Generally, scores of 90% are considered sufficient for auditory access in the classroom (Bodkin, Madell & Rosenfield, 1999)
- Usually the first condition (close/quiet/auditory - visual) is the easiest and identifies potential listening ability in ideal condition
- Identify conditions of greatest challenges; average condition scores greater than 10% difference illustrate a potential challenge area
- A comparison of performance with nonsense phrases vs common childrens phrases illustrates the benefit of context for auditory comprehension, especially helpful for explaining difficulty learning new vocabulary without full access
- Results with RM HAT close the auditory access gap

How can the results be used for recommendations?

- **HAT is often recommended to close the auditory access gap for difficult conditions**
- Describe effects of each listening condition
- Identify best listening ability
- Other accommodations for access include:
 - Seating location
 - Visual access
 - Use of sign or cued language
 - See 504/IEP Checklist for more accommodation options
- For reluctant/resistant hearing aid or RM users:
 - CADS for auditory access accommodations
 - Counseling tools (available from www.successforkidswithhearingloss.com)
 - Self-Assessment of Communication-Adolescent (SAC-A) and Significant Other Assessment of Communication-Adolescent (SOAC-A)
 - Classroom Participation Questionnaire (CPQ)
 - Many other counseling tools are available at this website

What should be included in a 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

What are limitations of the FLE?

- 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 levels and voices

Final Tips for Administration of the FLE

- 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

Links for Materials and Resources

FLE documents, protocols, training videos, FLE Kit – www.adevantage.com/resources

Phonak link for FLE Protocol

https://www.phonakpro.com/content/dam/phonakpro/gc_hq/en/resources/counseling_tools/documents/child_hearing_assessment_functional_listening_evaluation_fle_2017.pdf

Recorded FLE: Success for Kids with Hearing Loss

<https://successforkidswithhearingloss.com/product/fle-recorded-functional-listening-evaluation-using-sentences/>

Other Demonstration Links:

- Ohio Outreach Center for Deafness and Blindness (OCALI)
<https://deafandblindoutreach.org/m/1465>