

Addressing Children with Hearing Loss: Appropriate Use of Norm-Referenced Test Instruments

The purpose of this document is to explore information available regarding use of normative tests with children who are deaf or hard of hearing. Very few tests have specific norms for this population. In comparison to pre-newborn hearing screening, the population of children with hearing loss has become increasingly heterogeneous, affecting the relevance of averaged, normative responses. Also, increasingly, students are fully included in their neighborhood schools, often as the only student with hearing loss/hearing devices/sign language interpreter in their grade or school. The expectations are that they have the capability to compete in their classroom settings. Thus, it is now being strongly suggested that students be evaluated with test instruments that may not include the deaf/hard of hearing population in the norming group; with the caveat that communication during testing be maximized, and the purpose of the testing is to assess the student's skills in comparison to the performance of classroom peers.

The following information has been identified as being pertinent to this topic. Highlighting has been added for emphasis. Readers are encouraged to refer to original source information.

1. 2015 Guidance about the WPPSI-IV. Normative data section, page 3. This same paragraph is provided in 2015 guidance about the WISC-V.

“Examiners must determine whether the general normative sample is an appropriate comparison group for the child. While normative information for the general population is provided on the WPPSI-IV/WISC-V to assist with interpretation of scores, the WPPSI-IV/WISC-V normative sample did not include individuals with uncorrected hearing loss. Thus, comparison of standard scores for some deaf and hard of hearing children with the normative population may be limited, particularly for those without corrected hearing loss and/or whose primary language is some form of signed communication. In contrast, **for deaf and hard of hearing children who use assistive technology, such as cochlear implants or hearing aids, and who are primarily spoken language users, a comparison with the normative sample may be appropriate.**”

Comment: Most students are hard of hearing and are included in the mainstream with expectations that, with necessary supports and services, they perform at the same rate and to the same level as their class peers who are typically hearing. Comparison of their skills to this normative sample would therefore, usually be appropriate assuming communication optimization at testing occurs.

2. 2011 <http://www.isrc.us/sites/default/files/pdf/psychguidelines2011.pdf> Page 4, number 3.

“The use of standardized tests to determine the cognitive abilities, academic achievement, and mental status of people who are deaf or hard of hearing may result in inaccurate or misleading results. Few tests have been normed on deaf and hard of hearing populations. **Comparison norms are made to English-speaking, same-age students without a hearing loss. Assessment results need to be considered and interpreted in this light.** Misdiagnosis can follow an individual throughout his/her lifetime. **Scores from standardized tests should be interpreted in conjunction with other assessment information.**”

Comment: The evaluator must always take the impact of the hearing loss on communication and attention into account during the assessment process. Most students designated as hard of hearing may be the only one in their grade or school to have hearing loss and use hearing devices. Comparison of their skills to the averaged responses of the very heterogeneous population of students who are deaf or hard of hearing can arguably be seen as less relevant for educational planning than comparison to their typically hearing peer group.

3. 2011 <http://www.isrc.us/sites/default/files/pdf/psychguidelines2011.pdf> Page 9

“VI. Guidelines for Selecting Tests

1. General Considerations

- a. Few standardized tests include specific norms for comparisons with people who are deaf or hard of hearing.
 - b. Some standardized tests provide guidelines for administration of test items to people who are deaf or hard of hearing.
 - c. **Due to the problems encountered with standardized instruments, the inclusion of informal assessments is suggested. The use of informal assessments (such as interviews, observations, and work samples) can provide additional information on the student's skills.**
 - d. A word-for-word transliteration of standardized administration procedures may not adequately convey test instructions or student responses.
2. Achievement Testing
- a. There **are many facets to consider when selecting standardized, norm-referenced achievement tests for students with hearing loss**, considering the student's communication modality, difficulty translating questions into sign language, and the lack of validity studies of such techniques.
 - b. Achievement testing is beneficial to establish baseline levels of an individual's educational performance and to monitor their academic progress over time.
 - c. **Consider the use of hearing impaired norms (if available). This approach is valid when the desire is to compare the student with other hearing-impaired children.**
 - d. It is suggested that academic achievement testing be conducted along with a communication assessment (expressive and receptive language skills) to identify the student's strengths and needs.
 - e. Curriculum-based measurements (CBM) and criterion-referenced tests may also be used to monitor academic progress over time. With these measures, a student's performance is compared to his/her own baseline rather than same age peers without hearing loss.
 - f. Oral reading CBM measures should not be used with students who are deaf except in highly specialized circumstances.
 - g. Classroom observations and portfolios are additional sources of educational data."

Comment: Again, as most students with hearing loss are educated in the inclusive mainstream education environment, there is limited utility in assessing their performance in comparison to group norms of students who are deaf or hard of hearing. Informal assessment of the student's functional performance in the classroom, including social interactions, participation in group settings, pace of learning over time and fatigue can be very valuable in determining the adverse effect hearing loss has on educational performance.

3. NASDSE <http://www.nasdse.org/Portals/0/Documents/AssessmentTools.pdf>

"Recommended Assessment Tools: The specific tests listed under each area represent possibilities from which to choose. Many tests are usable only in part, such as the use of only visual or performance subtests from a more comprehensive standardized evaluation. **Almost all evaluation tools require some form of modification which the evaluator must note in the student's record.**"

Comment: For students who are hard of hearing with educational performance close or on par with classmates the modifications to testing may be to reduce background noise, ensure good lighting in the test space, ensure that hearing devices are functioning properly, and to control distance between the evaluator and student so that it is no more than 3-6 feet (unless an FM/DM hearing assistance technology system is in use). Note should be made of atypical number of requests for repetition, length of pauses between the question and response (processing time), and evidence of listening fatigue. These test considerations must be included in the description of test results.

4. NASP Position Statement

[file:///C:/Users/Karen%20L%20Anderson/Downloads/ServingStudentsWhoAreDeaf%20\(2\).pdf](file:///C:/Users/Karen%20L%20Anderson/Downloads/ServingStudentsWhoAreDeaf%20(2).pdf)

"Assessments and other educational support services need to address all domains in the life of the students who is deaf or hard of hearing, including social, emotional, physical, and cognitive development, and should use multiple sources of information for decision making. Due to etiological, neurobiological, and social factors, some students who are deaf or hard of hearing **may be at risk for academic, social, or emotional difficulties. A successful educational**

program should proactively address the needs of these at-risk students and provide school psychological assistance to educators and support personnel working with these populations.”

“For students who use cochlear implants or hearing aids, the school psychologist, in conjunction with other professionals, should **determine how well the student can understand and communicate with these assistive devices and whether an interpreter (e.g., sign language, oral, or cued speech) may also be needed to access the curriculum.**”

“School psychologists should **collaborate with specialists knowledgeable in working with students who are deaf or hard of hearing** (e.g., certified teachers of the deaf, speech and language pathologists, audiologists, ASL/deaf studies teachers) to **assess how the student can communicate in a variety of settings**. A mechanism should be in place to provide **ongoing progress monitoring and, when progress is deemed less than adequate, additional assessment and intervention should be provided.**”

“A certified teacher of the deaf should always be part of the team.”

Summary:

The assessment process should include professionals knowledgeable about the educational impact of hearing loss, specifically teachers of the deaf/hard of hearing and educational audiologists. The purpose of the assessment, and the group with whom it makes the most sense to compare the abilities of students who are deaf or hard of hearing, must be considered. This initial decision must be made if the results are to be most useful for eligibility and individual educational planning purposes. Administration of norm-referenced tests that do not include deaf/hard of hearing students in the norming group can be very appropriate if the student is primarily educated in the inclusive mainstream setting with few or no peers with hearing loss. The test administrator must provide an environment for optimal communication for the student who is hard of hearing, with special attention to the student’s attention, processing time, and level of listening fatigue. Students who use sign language must be tested with the involvement of their sign language interpreter, or if equally skilled, the teacher of the deaf/hard of hearing. All results must be reported specifying any significant alterations to test procedures.

Comments by experienced school psychologists with specialization in assessing students who are deaf/hard of hearing:

As a Licensed Psychologist and Teacher of the Deaf and Hard of Hearing, I have been conducting psychological and psycho-educational evaluations with students with hearing loss, as well as combined vision and hearing loss, for the past 12 years. In that time, I have seen numerous heart-wrenching situations where children’s cognitive skills have been tragically mislabeled because they were evaluated by a psychologist that either did not communicate with the student directly in the student’s primary language OR the psychologist did not have training, education or experience working with children with hearing loss or combined hearing and vision loss. These professionals were well-intentioned. They read the manuals for intelligence tests such as the widely used Wechsler Intelligence Scale for Children (WISC) and the manual suggests giving just the “non-verbal” scales to children with hearing loss. Many respected sources also recommend that the “verbal” scales of intelligence tests NOT be given to students with hearing loss due to their limited exposure to language. Students with hearing loss have less access to language than their hearing counterparts and, as the “verbal” scales of intelligence tests are based on English, it puts children with hearing loss at a disadvantage. I do not agree, however, that Deaf/Hard of Hearing students should not be given the verbal scales - even students who are profoundly Deaf and/or whose primary language is ASL. The following provides a very brief summary of why I believe it is usually necessary to give both the verbal and nonverbal scales of intelligence tests:

1. If you only give the nonverbal half of a standardized test, such as an intelligence or “IQ” test, then you remove half of the student’s opportunity to succeed. The assumption is that a child with hearing loss will not perform well on the verbal scales, but that is not always true.
2. Some students with hearing loss, even a profound hearing loss, perform better on the verbal scales of an intelligence test. I personally have tested numerous students who performed significantly higher on the verbal scales than the non-verbal scales. For example, I assessed a profoundly Deaf student who lived in a third world

country until age 7, with no exposure to any type of signed or visual language (and therefore virtually no exposure to language as he had no access to spoken language). This student moved to the United States at age 7 and received exposure to ASL. At age 9, he was given the non-verbal scales of an intelligence test and those results suggested his intelligence fell in the Low Average to Below Average range. When I tested him at age 11, I gave him both the verbal and non-verbal scales and he earned scores in the Superior range on the verbal subtests and in the Low Average range on the non-verbal subtests, but his overall IQ score came out in the Superior range due to his extremely high verbal scores. If I had followed the guidelines printed in the manual or the guidelines provided by many respected resources for Deaf/Hard of Hearing students, then this student's intelligence would have been estimated to fall within the Low Average range, instead of the Superior range. This student was struggling at school therefore his school performance did not reflect his Superior level of intelligence, either. After this testing was performed, his academic program was adjusted to include teaching strategies that focused on language (ASL, as that was his primary language) and within 18 months he was earning A's. Previously, his teachers had focused on visual teaching strategies because they assumed he would be a "visual" learner due to his lack of exposure to language and hearing loss, but he actually struggled with visual skills. This student eventually took Advanced Placement classes in high school and earned A's. The student would be considered the "prime example" of a student that should NOT be given the verbal scales due to his extreme lack of exposure to language. Had I followed that logic, this student might still be struggling with "visual" teaching strategies. Note: Identifying details were changed to protect the identity of the student.

3. It is true that some students with hearing loss do not perform well on the verbal scales, most likely due to a lack of exposure to language. If the evaluator is trained and experienced working with students with hearing loss, then he/she will know which aspects of their social/educational/medical/audiological history should be considered as part of the interpretation of scores and will provide an effective discussion of the student's scores, as well as strategies that are likely to be effective for improving the student's language skills. In order for a psychologist to provide appropriate recommendations regarding a student's cognitive skills, they need adequate information, which includes the student's verbal/language-based cognitive skills. A trained/experienced psychologist will base their estimate of the child's overall cognitive skills on a wide variety of factors, not just an IQ score. If there are lower verbal scores, a trained psychologist will interpret those in a way that includes the student's hearing loss as well as their history. That interpretation should result in specific recommendations aimed at improving their areas of need to help the student succeed. A trained evaluator should not underestimate the student's overall cognitive abilities based on a small subset of verbal scores.
4. Verbal subtest scores are very highly correlated with an individual's performance at school and work. If a student with hearing loss earns low scores on the verbal subtests (as well as any other measures of language), it is our responsibility as professionals to collect as much data about those challenges as needed to develop effective teaching strategies to improve language skills. Language skills, whether we like it or not, are highly correlated with both academic and vocational success. Refusing to test a student's "verbal" cognitive skills because the scores might be low is very unfair to students with hearing loss. Professionals need to be trained to effectively evaluate a student with hearing loss so that their overall cognitive abilities are not "underestimated" based on lowered verbal subtest scores.

- *Dr. Nanette McDevitt, Minnesota Specialist in Assessing Students who are Deaf/Hard of Hearing*

CBM/progress monitoring should be considered an important tool in tracking a student's growth and development. Children who are D/HH may start out at or close to age/grade level expectations due to intensive intervention provided during the preschool years. These interventions often taper off as the child enters the K-12 system. Deficits in communication/listening skills in the form of a slowly increasing gap in academic skills could easily be missed, or misidentified as a learning disability.

- *Retired School Psychologist with DHH Advanced Graduate Certificate in School Psychology and Deafness*

Supporting Success sincerely thanks the professionals who provided their comments on this important question.