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Research Article

Assessment of Deaf & Hard of Hearing Students from Culturally & Linguistically Diverse Backgrounds

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ABSTRACT

Although multiculturalism, within the United States, has been a major educational reform movement since the early 1990s, there remains a significant gap in the literature regarding assessing deaf and hard of hearing (D/HH) students from culturally and linguistically diverse (CLD) backgrounds. This article provides an analysis of common forms of classroom and special education assessments and provides two recommendations for aligning best practices when assessing D/HH students from CLD backgrounds.

Keywords: Accommodations; Assessment; Culturally & Linguistically; DiverseDeaf; Hard of Hearing; Interpreter; Multiculturalism

INTRODUCTION

In antiquity, researchers recognized there have been several significant problems when assessing deaf and hard of hearing (D/HH) students (see Fitzpatrick & Neild, 2014 & 2017; Neild & Fitzpatrick, 2020) and have systematically worked to develop valid, reliable, and meaningful ways to assess this student population. The literature is replete with abysmal misdiagnoses of D/HH students because of ineffective assessment protocols, limited knowledge of Deaf culture, and lack of understanding of their unique learning needs. The ineptitude of assessor(s) who administered normed assessments—for hearing students—invalidated findings leading to an overrepresentation of D/HH students being misdiagnosed as intellectually disabled (see Anglin-Jaffe, 2013; Brueggemann, 2004; Fitzpatrick & Neild, 2014 & 2017; Moore & Levitan, 2005; Mu˜noz-Baell & Ruiz, 2000) or institutionalized (Neild & Fitzpatrick, 2019).

According to Gordon, Stump, and Glaser (1996) D/HH students often encounter several significant difficulties when accessing the general education curriculum, accommodations, and modifications compared to their hearing peers. However, these factors are exacerbated for individuals from culturally and linguistically diverse (CLD) backgrounds. As briefly noted above, the dearth of appropriate assessment protocols have created inequities for all D/HH students but the compounding issues for individuals from CLD backgrounds continues to be problematic.

The purpose of this article is to provide (a) a truncated history of multicultural education within the United States, (b) how this paradigm shift informed special education (SPED), (c) how multicultural education impacted assessing D/HH students, and (d) aligning best practices for assessing D/HH students from CLD backgrounds.

Multicultural Education

Within the United States, Madeline Hunter's instructional approaches were considered the industry standard because her pedagogy permeated all educational sectors. Despite Hunter's approaches holding the weight of water for nearly a century, during the early-to-mid 90s multicultural education became a prevalent movement. Although there were numerous factors which were foundational for this paradigm shift, three primary drivers were shifting demographics (see Freidus, 2020; Hollingworth & Dude, 2009; Holme, Diem, & Welton, 2014; Fitzpatrick & Knowlton, 2009; Portes & Smagorinsky, 2010), transientism, and significant influx of students from CLD backgrounds (see Garcia-Joslin, Carrillo, Guzman, Vega, Plotts, & Lasser, 2016; Pewewardy & Fitzpatrick, 2009).

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This educational reform impacted teacher preparation programs, the way teachers taught, and how students learned. Further, multicultural education initiatives resulted in a momentous transition from traditional teacher centered instruction towards a convergence of student centered approaches. For example, direct instruction was replaced by data informed instruction, cooperative learning, and experiential engagement. Another emerging thrust during this time was teachers putting theory-into-practice (i.e., closing the research-to-practice gap).

Since its inception, there has been a significant—ever growing—body of literature ranging from editorials-to-scholarly research and several attempts to define multicultural education. We are living in an era of globalization (Fitzpatrick, 2010) and for the purpose of this article, the authors incorporated sections of the National Association for Multicultural Education's (2020) definition primarily because they (a) are a professional consortium with established standards (i.e., Board of Directors, annual conference, scholarly journal, etc.), (b) have a longstanding commitment to advancing multicultural education, (c) impacted education on a global level, and (d) defined a complex paradigm holistically. For the purpose of this article, the following are segments which serve as a foundation to define multicultural education:...Affirms our need to prepare students for their responsibilities in an interdependent world. It recognizes the role schools can play in developing the attitudes and values necessary for a democratic society. It values cultural differences and affirms the pluralism that students, their communities, and teachers reflect. It challenges all forms of discrimination in schools and society through the promotion of democratic principles of social justice.

Select tenets of the National Association for Multicultural Education's (2020) definition include:

- Highest levels of academic achievement for all students.
- Developing a positive self-concept by providing knowledge about the histories of cultures & contributions of diverse groups.
- Providing the knowledge, dispositions, and skills for the redistribution of power & income among diverse groups.
- Advocates the belief that students & their life histories & experiences should be placed at the center of the teaching & learning process.

As noted above, disaggregating the National Association for Multicultural Education's (2020) definition serves as a foundation for how multicultural education has impacted SPED and assessment practices for D/HH students from CLD backgrounds.

Multicultural Education Impact on Special Education

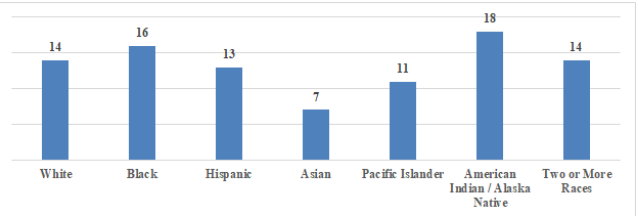
One of the primary goals of SPED is to provide a free and appropriate public education for eligible students ages 3–21, towards this end the Individuals with Disabilities Education Improvement Act (IDEIA, 2004) advanced the precepts of previous SPED legislation (see P.L. 94-142, 1975; P.L. 101-476, 1990; P.L. 105-17, 1997). Despite 45 years of advocacy and litigation, policy making, funding, and training students with disabilities, regardless of category, continue to face significant barriers when transitioning from high school to work, community, and/or postsecondary opportunities.

Further, it is well documented that SPED has a longstanding history of overrepresentation of students from CLD backgrounds (see Pewewardy & Fitzpatrick, 2009; Zhang & Katsiyannis, 2002). The disproportionality is not necessarily categorical in nature, rather a function of inadequate teacher preparation and administering culturally biased assessments. Essentially SPED became a proverbial dumping ground. However, within recent years, the over-representation gap has been decreasing comparatively to the last 10-to-15 years. According to the National Center for Education Statistics (2020) during the 2018-2019 academic school year 7.1 million students between 3-21 received SPED services. Table 1 provides the percentage of students by disability category whereas figure 1 represents the percentage served under IDEIA (2004) by race/ethnicity.

Table 1: Percentage of Disability by Category.

Category	Percent
Specific Learning Disability	33%
Speech or Language Impairment	19%
Other Health Impairment	15%
Autism	11%
Developmental Delay	7%
Intellectual Disability	6%
Emotional Disturbance	5%
Multiple Disabilities	2%
Hearing Impairment	1%
Orthopedic Impairment	1%

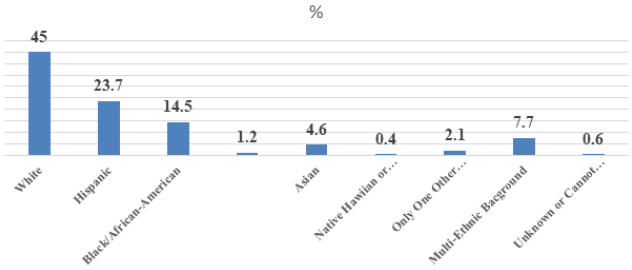
Figure 1: Percentage Served by Race/Ethnicity.



National Center for Education Statistics (2020)

(Figure 2) represents the percentage of D/HH students by race/ethnicity. This data was collected by Gallaudet University through its Deaf and Hard of Hearing Children & Youth Annual Survey (2014).

Figure 2: Percentage of D/HH Students by Race/Ethnicity.



Gallaudet University through its Deaf and Hard of Hearing Children & Youth Annual Survey (2014)

Given deafness and hard of hearing is typically diagnosed using audiological assessments (i.e., Newborn Hearing Screening, Auditory Brainstem Response Test, etc.) race and ethnicity are not necessarily directly correlated to an individual's ability to hear. However, it is important to note, socioeconomic status and other environmental influencers such as limited access to quality pre-and-post natal health care, early childhood programs, therapy (e.g., speech language pathology, physical therapy, etc.), and community resources (i.e., social services) may create long term issues, especially for those living in extremely under resourced communities. Therefore when the multidisciplinary team assesses D/HH students from CLD backgrounds to determine if they qualify for SPED services they should use culturally responsive accommodations (discussed below).

Multicultural Education Impact on Classroom Assessment

As addressed above, D/HH students from CLD backgrounds often encounter several significant barriers during their infant, toddler, and early childhood years (i.e., birth-to-preschool) and these challenges can evolve as they transition into the K-12 educational setting. One area in which teachers can help minimize obstacles is to select appropriate assessment protocols when assessing D/HH students from CLD backgrounds in the classroom. It is critical teachers administer multiple types of assessments which helps diminish cultural bias, language deficiencies, and socioeconomic issues (see Cawthon, 2011; Pizzo & Chilvers, 2016). The more robust data teachers can provide will assist the Student Intervention Team (SIT) should they determine if the student meets eligibility criteria for the SPED prereferal process.

Formative & Summative Assessments

Ideally teachers should be employing multicultural responsive pedagogy and teaching to the whole child. From this perspective their formative and summative assessments—which are most prevalent in the K-12 educational setting—should already be aligned and developed to address cultural competencies. For example, teachers typically use formative assessments such as pre-and-post tests, essays, quizzes, or projects to check student understanding. Whereas summative assessments are used to determine student mastery of a specific skill or set of skills over a period of time using end of unit, chapter tests, or final exams.

The teacher should have already embedded multicultural education standards throughout their curriculum, instruction, and environment. Therefore, formative and summative assessments are critical for D/HH students from CLD backgrounds because these tests allow them to demonstrate mastery. Additionally, the multicultural education standards are aligned to the formative and summative assessments allowing the teacher to use outcome data for progress monitoring [1-10].

Informal & Formal Assessments

Similar to formative and summative assessments, informal and formal assessments provide teachers with student data. Informal assessments are typically content and performance driven while formal assessments use standardized measures. For example, a teacher can use an informal assessment by having students hold up a card, whiteboard, or chalkboard with their response to a question. Whereas state achievement tests, Scholastic Assessment Test (SAT), American College Testing (ACT), and General Educational Development (GED) are examples of formal assessments. Tables 2 and 3 provide examples of informal and formal assessments.

Table 2: Informal Assessments.

Type	Definition	Examples
Curriculum-Based Assessment	Systematic process of instruction, data collection, & progress monitoring to improve student learning outcomes.	Running Records Direct Reading Assessment
Portfolio Assessment	A collection of artifacts demonstrating student mastery of predetermined learning objectives & evaluated using rubrics either individually or by a team	ePortfolio Physical / Tangible
Direct Observation	Observation conducted by the teacher, ancillary staff member, or other professional of the student (i.e., work habits, on-&-off task behavior, etc.) in the natural environment	Anecdotal Notes & Records Time Samples Video-Based

Table 3: Formal Assessments.

Type	Definition	Examples
Standardized Assessment	Assessments designed to demonstrate an individual student's skill level compared to their peers within	SAT GED

	the school, state, & Nation	
Criterion-Referenced Assessment	Assessments which evaluate student learning against a set of pre-specified criteria, without reference to the achievement of others (Brown, 1998; Harvey, 2004)	ACT Driving Test

Informal assessments are similar to formative and summative assessments in their ability to allow D/HH students from CLD backgrounds to demonstrate mastery and provide teachers with present level outcome data. However, formal assessments typically use a standardized approach, are normed on a disparate population (which may or may not include D/HH students from CLD backgrounds), and data is traditionally unavailable ranging from one month to over a year. Although formal assessments tend to provide a depth of data, the duration limitation can be prohibitive for remediating the teaching and learning process.

Multicultural Education Impact on Special Education Assessment

Assessments help determine if a D/HH student has another disability (Stewart & Kluwin, 2001) and the aforementioned assessments—including work samples, attendance and health records, and other anecdotal reports—should be used during the prereferal process. Once the school's SIT determines a student should be tested for SPED a multidisciplinary team is assembled to select which battery of protocols to use to determine eligibility (discussed below).

Diagnostic Assessments

IDEIA (2004) mandates that all students who are being tested for SPED services are entitled to a nondiscriminatory evaluation consisting of (a) individualized intelligence test, (b) individualized achievement test, (c) direct observation in the natural environment (i.e., classroom, lunchroom, playground, home & community, etc.), (d) ecological assessment (as appropriate), (e) curriculum-based assessment, and (f) behavior rating scale (as appropriate).

Cognitive Assessment

Prior to selecting or administering, given the complexities of assessing D/HH students, especially those from CLD backgrounds, it is important for the assessor to become familiar with the student's background, have a firm knowledge of Deaf culture, have an interpreter who is familiar with the student, and determine if the interpreter should be used for sign, spoken language, or both. Additionally, as appropriate, selecting assessments that have been normed based on race and/or ethnicity, but not necessarily among the D/HH community, is important [11-14].

When selecting cognitive assessments for D/HH students from CLD backgrounds it is important to draw information from language assessments. However, it should be noted it may be difficult to accurately assess this student population because the vast majority of standardized cognitive assessments contain heavy use of vocabulary and language rich contexts. The following are cognitive tools that are often used with D/HH students (Douglas, Lawson, Mauerman, Rosenthal, & Santa-Teresa, 2011) but have some applicability for those from CLD backgrounds (a) Universal Nonverbal Intelligence Test (UNIT), (b) Wechsler Intelligence Scale for Children (Nonverbal Based Subtest), (c) Leiter International Performance (Revised), (d) Differential Ability Scales, Second Edition (DAS-II) (Nonverbal Scale), (e) Kaufman Assessment Battery for Children (KABC-II) (Nonverbal Scale), (f) Woodcock-Johnson IV Tests of Cognitive Skills (WJ-IV) (Selected Subtests), and (g) Mullen Scales of Early Learning.

Common Assessments used for D/HH Students from CLD Backgrounds

(Table 4) contains various assessment protocols to use with D/HH students. Although many of these tests may only have sections that are appropriate for D/HH students (Neild & Fitzpatrick, 2020) it should be noted these protocols typically do not assess influencing variables such as cultural or linguistic diversity. Thus, as noted above the limited availability of valid and reliable assessment tools to assess D/HH students from CLD backgrounds has the potential to impede access to the general education curriculum in the least restrictive environment with their non-disabled peers.

Table 4: Assessments for Deaf and Hard of Hearing Students.

Assessment	Publisher or Author	Summary
The American Sign Language Comprehension Test (ASL-CT)	Hauser, et. al., 2015	Administered electronically measures ASL receptive skills.
The American Sign Language Proficiency Assessment (ASL-PA)	Supalla, 1995	Language samples are elicited from different environments and then ASL expressive skills are evaluated.
The American Sign Language Receptive Skills Test (ASL RST)	Enns & Herman, 2011	Measures s child's receptive knowledge of ASL in eight grammatical categories.
Brigance	Curriculum Associates, 1982-2013	Assesses receptive and expressive language, literacy, and numeracy. Data is collected through school/home observations, interactions, and feedback.

Carolina Picture Vocabulary Test (for Deaf and Hard of Hearing) (CPVT)	Pro-ED, 1985	Measures receptive sign vocabulary for children whose primary language is visual (ASL).
Checklist of Emerging ASL Skills	Easterbrooks & Baker, 2002	The checklist provides a list of indicators to assess if the child uses ASL components in their communication system. The evaluation should be completed by three different individuals fluent in ASL and familiar with the child.
Grammatical Analysis of Elicited Language, Pre-Sentence Level (GAEL-P) and Complex Sentence Level (GAEL-C)	Central Institute for the Deaf (CID), 1978-1985	GAEL-P contains three sections readiness skills, single words, and word combinations. The evaluator uses play and pictures to elicit language in these areas.
Meadow-Kendall Social-Emotional Assessment Inventory for Deaf and Hard of Hearing Students (SEAI)	Laurent Clerc National Education Center, 1983	Assesses social adjustment, self-image, and emotional adjustment. Behavior checklists are completed by the evaluator.
Peabody Picture Vocabulary Test (PPVT)	Pearson, 1959-2007	Assesses a child's receptive vocabulary.
The Placement and Readiness Checklist (PARC)	Johnson, Darr, Elliott, 2011	The PARC focuses on strengths and challenges in academics, communication, and social skills.
The MacArthur Communicative Development Inventory for American Sign Language (ASL-CDI)	Anderson & Reilly, 2002	Parent report that measures early sign production.
The MacArthur Communication Development Inventory: Words, Gestures, and Sentences (CDI)	Paul H. Brookes Publishing, Co, 1992-2007	Checklists ask family members and/or teachers to identify varies words that the child either says or signs.
Systematic Analysis of Language Transcripts (SALT)	SALT Software, LLC, 2009-2010	A 30 minute play session is videotaped and spoken/signed language is transcribed. The analysis includes the number and types of spontaneous communication between the child and caregiver.
Test of American Sign Language (TASL)	Prinz, 1994	TASL has two production measures and four comprehension measures.
Test of Auditory Comprehension of Language (TACL)	Pro-ED, 1973-2014	TACL measures auditory comprehension skills. The child is presented with a picture and points to the phrase or sentence that matches what is heard.
Transition Competence Battery for Deaf and Hard of Hearing Adolescents and Young Adults	James Stanfield Co., Inc., 1993	This assessment measures work and social skills necessary to work and live in the community.
Visual Communication Sign Language Checklist for Signing Children (VCSL)	Simms, Baker, & Clark, 2013	VCSL is a comprehensive checklist of visual language development that allows learning goals to be set and gaps in learning to be identified.

It is important to note that "Linguistic bias can manifest itself in many ways throughout the assessment process" (Pizzo & Chilvers, 2016, p. 59). Therefore, multidisciplinary teams should consider using accommodations—as appropriate—for the assessments which are commonly used to test D/HH students from CLD backgrounds. Further, Qi and Mitchell (2011) recommended that accommodations should be based on each individual's need and not universally applied on the basis of the student's language. The next section provides an analysis of two accommodations for aligning and operationalizing best practices when evaluating D/HH students from CLD backgrounds.

Aligning Best Practices

As noted above, multiple assessments are necessary to gain a holistic understanding of the student's present level of performance when being evaluated for SPED services. However, given the unique characteristics of D/HH students from CLD backgrounds, multidisciplinary teams should identify what—if

any—accommodations are necessary to align and operationalize best practices when assessing this student population. According to Dale and Neild (2019) multidisciplinary teams should be cognizant that accommodations for D/HH are not necessarily static but are ever changing based on individual need [15-20].

From these perspectives, it is not unreasonable to assume virtually all assessments may require one form of modification or another, which the evaluator should document in the student's record. Additionally, providing accommodations can assist with gaining an equitable and accurate measure of student's knowledge and understanding (Dale & Neild, 2019). Finally, it should be noted that each of the recommendations have applicability when assessing non D/HH students from CLD backgrounds.

Interpreter

D/HH students typically require one-or-more visual accommodation based on the assessment (e.g., IQ or academic). Therefore an interpreter may be necessary to either (a) translate the test question into sign language, (b) translate the student's response verbally to the diagnositican, and/or (c) both. However, D/HH students from CLD backgrounds may require both an American Sign Language and a Japanese speaking interpreter to help increase efficacy and mitigate misinterpretations and/or misunderstandings. Given interpreters have unique nuances when signing, it is advantageous to assign an interpreter who is familiar and comfortable working with the student who is being assessed (Morgan & McCay, 1994) [21-28].

Technology

As SPED assessments transition to an online format including but not limited to the Wechsler Intelligence Scale for Children Fifth Edition and Woodcock-Johnson IV Test of Cognitive Abilities, one technological accommodation that may be beneficial is providing D/HH students hearing assistive technologies such as a frequency modulation (FM) or digital modulation (DM) system. If a FM or DM system is used, the student will need to be introduced and taught how to use the technology (IDEIA, 2004) prior to evaluation and would ideally have used it the classroom before starting collecting data for the SIT. Regardless if the assessment is administered face-to-face or online, the D/HH student may still require an interpreter especially for those whose primary language is not English.

CONCLUSION

Based on the limited body of research and literature related to D/HH students from CLD backgrounds it is advantageous to conduct further investigation to begin filling in the gaps for this student demographic when being assessed in the classroom or evaluated for SPED services. Therefore the intent of this article was to provide readers with an overview of multiculturalism and its impact on assessment in the United States. Two recommendations were provided specifically to accommodate D/HH students from CLD background who are being evaluated for SPED services [29].

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