

Alternative Gifted Identification Methods for Culturally and Linguistically Different Students

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Historically, culturally and linguistically different students are underrepresented in gifted programs (Ford, 1998). The processes by which students are identified vary widely from school district to school district, and involve myriad testing and performance measures (Lohman, 2005a). These include performance assessments, individually administered tests of aptitude, group-achievement tests, creativity tests, and/or grades. Traditional methods for identifying gifted students, however, have relied on IQ tests (Baldwin, 2005) or some other normed test of ability and/or achievement (Naglieri & Ford, 2003) as the sole or the primary measure of giftedness. These measures have continued to under-identify students from culturally and linguistically diverse backgrounds, and have been cited by some researchers as being culturally biased (Ford, 1998; Frye & Vogt, 2010; Shaunnessy, Karnes, & Cobb, 2004).

Many school districts are looking to alternative means of assessing ability, with the idea that such measures will reduce or eliminate the language barrier that often excludes English language learners (ELLs) from gifted programming (Lohman, Korb & Lakin, 2008). Additionally, alternative methods are being employed as a more “culture fair” method for assessing student ability in minority populations (Lewis, DeCamp-Fritson, Ramage, McFarland, & Archwamety, 2007; Lohman, 2005b; Lohman et al., 2008; Naglieri & Ford, 2003).

Among the alternative methods for identifying diverse populations of learners are nonverbal assessments such as the Naglieri Nonverbal Abilities Test ([NNAT], 2003), and Raven’s Standard Progressive Matrices ([SPM], 2003). Performances tasks and use of local norms to interpret test results are options being employed as well. This is an inclusive, not exhaustive list, but due to space constraints, this author will briefly critique each of these measures as part of a trend among American school districts’ efforts to reduce the underrepresentation of minority students in gifted education programs.

It is important to note that recent research finds traditional tests of ability to be fair, valid and not culturally biased (Erwin & Worrell, 2011; Lohman, 2005a). In other words, these tests accurately measure what they were designed to measure (Lohman, 2005b), and the results indicate underrepresentation among minority groups mirror the achievement gap rather than cultural bias (Erwin & Worrell, 2011). Lohman (2005a, 2005b) found that the Cognitive Abilities Test (CogAT) is a strong predictor of school academic success, and serves a valuable purpose in identifying academically gifted students. Lohman (2005a) agreed that minorities are underrepresented in gifted and

talented programming, but this phenomenon is not due to the CogAT. The CogAT will be briefly described in support of this argument.

STANDARDIZED TESTS

Naglieri Nonverbal Abilities Test

The Naglieri Nonverbal Abilities Test (NNAT) is a norm-referenced, group-administered test that measures general ability using geometric shapes and figures. This test is timed and leveled according to the examinee’s grade level. The NNAT is normed using nationally stratified, random sampling. It does not require the examinee to read or write. Rather, the test items are placed into a matrix that arranges figures and geometric shapes and asks the examinee to respond using only the information found in the matrix. This method of assessment requires fluid reasoning on the part of the examinee, rather than crystallized reasoning.

Crystallized reasoning is a factor of general intelligence that relies on a person’s experience and acquired knowledge, as well as one’s ability to problem solve using words and numbers (Cattell, 1963). Crystallized knowledge resides in one’s long-term memory and its use is commonly associated with achievement tests such as the Iowa Tests of Basic Skills (ITBS) and the verbal and quantitative batteries of the CogAT.

Conversely, fluid reasoning employs inductive and deductive reasoning and refers to a person’s ability to recognize relationships in novel stimuli and to solve problems without the use of acquired knowledge. The nonverbal section of the CogAT assesses a broad range of functions, requiring verbal and quantitative reasoning as well as figural reasoning (Lohman, 2012). This nonverbal battery requires both fluid and crystallized reasoning. Research suggests that minority students score higher on tests requiring fluid reasoning rather than crystallized reasoning (Pierce et al., 2007; VanTassel-Baska, Feng, & Evans, 2007).

Naglieri and Ford (2005) assert that the NNAT is a more culture fair method for assessing the abilities of minority students and English language learners (ELLs) than other traditional measures of ability (e.g., Weschler Intelligence Scale for Children, Stanford Binet Intelligence Scales). Because the NNAT is virtually word-free, and the orally delivered directions for the test are minimal, then the results can more accurately measure the abilities of these populations of students. The figure drawings on the NNAT utilize minimal color and assume little to no knowledge of vocabulary. The NNAT requires problem solving rather than verbal ability.

The NNAT has undergone numerous empirical and comparative studies (Lewis et al, 2007; Naglieri & Ford, 2003; Naglieri & Ronning, 2000; Shaunessy et al., 2004). Naglieri and Ford (2003) showed small mean differences between European Americans, African Americans, and Hispanic students on the NNAT. They argue that because minorities scored similarly with European Americans, tests such as the NNAT are effective in assessing the ability of students in a way that does not underrepresent minorities. Lewis et al. (2007) found that although the NNAT identified more ethnically diverse students having potential than did the ITBS, it found fewer minority students with the potential for school success than the Raven's Standard Progressive Matrices. Shaunessy et al. (2004) found similar results when comparing the NNAT, Raven's Standard Matrices, and the Culture-Fair Intelligence Test ([CFIT], Cattell & Cattell, 1960). All of these studies recommended, however, that the use of nonverbal tests (in general) as part of an identification process would identify more minority students.

Raven's Standard Progressive Matrices

The Raven's Standard Progressive Matrices is the oldest and most widely used nonverbal test (Kaplan & Saccuzzo, 2009). It is a norm-referenced, group-administered nonverbal test of higher-level thinking (Raven, Raven, & Court, 1998). The SPM is untimed, arranged into five increasingly difficult sections, and asks examinees to complete a series of patterns on 4x4, 3x3, or 2x2 matrices. The SPM uses local norms, although national norms are reported. Like the NNAT, the SPM does not require the examinee to read or write, and utilizes fluid reasoning on the part of the examinee.

In comparative studies (Lewis et al., 2007; Shaunessy et al, 2004; Lohman et al., 2008), the SPM has been shown to identify more minority students showing potential for school success than the NNAT, the CFIT, and the ITBS. However, Lohman et al. (2008) found that the SPM overestimates the scores of the students it identifies as gifted by more than 10 points ($M = 100$, $SD = 15$). Further, they cite norming issues as one causal factor in the high number of students being identified by this test. It should be noted that in a later study, Lohman (2012) recommended the use of local norms (which is how the SPM is normed) as one way to identify more minority gifted students. Shaunessy et al. (2004) found that more students scored at or above the 80th percentile on the SPM than did students taking the NNAT or the CFIT.

Cognitive Abilities Test

The Cognitive Abilities Test (CogAT) is a norm-referenced, group-administered test consisting of three assessment areas, or batteries: the verbal battery, the quantitative battery, and the nonverbal battery. Each battery of this timed test assesses a different cognitive function. The verbal and quantitative batteries require predominantly crystallized reasoning on the part of the examinee, while the nonverbal battery requires both crystallized and fluid reasoning.

Lohman (2005b) opined that gifted students should be identified according to how well they score on assessments that predict their ability to achieve success in school. He defined aptitude as a readiness to learn and achieve in a particular domain. For the purposes of academic giftedness, these domains consist of one or more school-taught areas (Lohman, 2005a).

The best way to predict future success (or aptitude) is to measure current levels of achievement (Lohman, 2005b). The CogAT, which Lohman was instrumental in creating, is a predictor of academic success in language arts and mathematics. The verbal battery measures logical reasoning as well as knowledge of vocabulary and word usage. The quantitative battery measures knowledge of logic and problem solving as well as that of vocabulary and word usage. Both the verbal and quantitative batteries require the student to draw on acquired knowledge (crystallized) as well as problem-solving (fluid) skills. The nonverbal battery measures the student's problem-solving ability (fluid reasoning), but is not a measure of giftedness, unless accompanied by a high (though it need not be stellar) score on the verbal and/or the quantitative battery (Lohman, 2005b).

Standardized tests have been used to measure intelligence since Terman (1916) and Hollingworth (1942) began administering Binet (Stanford-Binet) IQ tests at the turn of the 20th century. At first glance, standardized tests appear to be accurate measures of aptitude because they are identically administered to all students. However, closer examination reveals that it is the sameness that excludes culturally and linguistically different students. Standardized tests such as the CogAT assume experiences and verbal skills that students may or may not have (Naglieri & Ford, 2005). Other standardized measures such as the NNAT and SPM gauge cognitive ability and do not rely on learned experiences. An accurate measure of intelligence must account for cultural and linguistic differences.

PERFORMANCE TASKS

One aspect of the gifted identification process that researchers agree upon is that standardized tests should be only one part of a larger set of criteria used to identify students for gifted and talented programming (Baldwin, 2005; Callahan, 2005; Lohman, 2005a, 2005b, 2012; Naglieri & Ford, 2003; Shaunessy et al., 2004; VanTassel-Baska, Feng, & Evans, 2007). Performance tasks are assessments that employ fluid reasoning and examine the process by which the student arrived at the answer rather than whether or not he or she quickly arrived at the correct answer (VanTassel-Baska, Feng, & Evans, 2007). These open-ended assignments can be used in conjunction with nonverbal tests to garner a more complete understanding of the student's abilities.

A comparative study of traditionally identified (ability and achievement tests) low-income and minority gifted students and those identified via performance tasks found that although the students who were performance-task identified scored consistently lower on achievement tests

of state standards than the students who were traditionally identified, the differences in the test scores were minimal (VanTassel-Baska, Feng, & deBrux, 2007). This suggests that performance tasks are an effective means of identifying low-income and minority students.

Performance tasks are a strong addition to the gifted identification process because they can give a clearer picture of the student's area of strength to be accelerated (Erwin & Worell, 2011). Additionally, they may assist in highlighting a student's verbal ability that a nonverbal test would miss (VanTassel-Baska, Feng, & de Brux, 2007). Because performance tasks are open-ended, and have potentially myriad "right" answers, they offer more academic information, about the student such as process skills and creative approaches to problem solving that a standardized test may not reveal (Pierce et al, 2007).

An example of a performance task in an elementary classroom might be the building of one or more simple machines from a given set of random materials. The student demonstrates knowledge of simple machines and how they work by designing, building and demonstrating its use. In the gifted identification process, a student may be shown a picture and then asked to create a story and title for the picture. A quantitative task may ask the student to devise multiple ways of solving the same problem: The answer is 8, what is the question? Performance tasks are open-ended and untimed. They can produce many "right" answers and demonstrate the student's fluid thinking.

USE OF LOCAL NORMS

Learning is a social, cultural construct (Lohman, 2005b). Intelligence, ability, and learning cannot exist outside of motivation, experience, and culture. Giftedness, therefore, cannot be measured outside the context of one's culture (Sternberg, 1985, as cited in Lohman, 2005b). Ability is not static or innate; it is dynamic and grows with time and experience in one's surroundings. Lohman (2005b) further stated that the purpose of school is to equip students with knowledge of a domain that is valued by a culture.

Based on this assertion, all students' abilities should be measured against other students who have similar opportunities and cultural experiences. The performance of a local group of students rarely mirrors that of a national distribution (Lohman, 2005a). Local norms accomplish this. They give an accurate picture of how students in a local school district scored on a test of ability. Local norms may even compare the ability of one student measured against his or her classmates. Decisions regarding gifted programming can be better tailored to a group of students who are measured against their classmates, given the large variance between school districts and indeed schools in average ability and opportunity (Lohman, 2012). This is especially true if characteristics of the group are different from the nationally normed sample (Jordan, Bain, McCallum, & Mee Bell, 2012).

Census testing within school districts should be conducted if local norms will be used to make programming decisions. Census testing refers to the

district-wide screening of a particular sample of students (e.g., all students in Grade 1). Generally, the scores represent the abilities of students for the year in which the test was administered. The small sample size may pose validity issues. However, this may not be problematic for school districts making decisions based on a rank system (Lohman, 2012).

Empirical evidence, though limited, shows small or no mean score differences when local norms are utilized on scores from gifted rating scales. Similar scores were found between gifted Caucasian and gifted African American students on the GRS-School Form (Pfeiffer & Jarosewiah, 2007) and on the Universal Multiple Abilities Scales (Jordan et al., 2012) when local norms were employed. Additionally, this group of students scored significantly higher than nongifted African American and nongifted Euro-American students using the same scale and local norms.

DISCUSSION

The underrepresentation of racially diverse populations of students from gifted programs has been documented since the early 20th century (Jenkins, 1936). In recent years, students from low socioeconomic backgrounds (SES) and English language learners (ELLs) have also been recognized as underserved populations. Heated debates have played a vital role in raising awareness of this nationwide phenomenon (Erwin & Worrell, 2011; Lohman, 2005b; Naglieri & Ford, 2003). The current trend in identification processes in many school districts across the United States is to employ alternative measures of ability rather than traditional standardized tests of IQ and achievement. Minority students display intellectual abilities not necessarily found in school curricula (Naglieri & Ford, 2005). Therefore, educators must look for ways that illuminate those intelligences.

Nonverbal measures of ability are often regarded as equalizers in their ability to level the playing field for minority students and ELLs (Naglieri & Ford, 2003). Minority and low-SES students often arrive to school with less verbal ability than their Caucasian classmates, and nonverbal tests of ability remove that element from the equation, measuring students' fluid problem-solving skills, rather than acquired knowledge.

Performance tasks allow students to demonstrate abilities that may not appear on a normed test of scholastic achievement. These assessments also afford educators the opportunity to gain a clearer picture of which domains to accelerate or enrich. When used in conjunction with a nonverbal assessment, a performance task may highlight verbal ability that such a measure would miss (VanTassel-Baska, Feng, & de Brux, 2007). Finally, performance tasks focus on process more than product, allowing the student's fluid reasoning and problem-solving abilities to be more evident than an achievement test would reveal (VanTassel-Baska, Feng, & Evans, 2007).

The use of local norms is a controversial trend (Erwin & Worrell, 2012). There is limited empirical evidence analyzing its use. However, what little research exists supports the idea that comparing students' abilities against

other students of similar background experiences, culture, and opportunities successfully identifies more minority, disadvantaged, and ELL students (Lohman, 2012). In other words, comparing apples to apples tends to level the playing field for all students.

Learning, knowledge, and intelligence cannot exist outside of experience and culture (Lohman, 2005b). In order to accurately measure a student's ability in one or more domains, the student must be measured against students of similar circumstance and opportunity for development of that ability (Lohman, 2012). Consequently, Lohman (2012) suggested that school districts use multiple norming scenarios when making decisions about the identification of minority students as gifted. The use of local norms will compare students of similar demographic, circumstance, socioeconomic status, and opportunity for talent development.

At the heart is this debate is the lack of a mutually agreed upon conceptualization of what it means to be gifted. Lohman (2005b) stated that giftedness must be measured in terms of verbal, quantitative, and spatial reasoning because these are the tools by which our society measures academic success. Naglieri and Ford (2005) stated that intellectual giftedness exists outside of the confines of a school building and verbal and quantitative assessments are unfair to students who have limited exposure to these constructs due to cultural or socioeconomic differences.

A lack of shared meaning exists in defining the three As: aptitude, ability and achievement. Many nationally normed tests of ability actually measure achievement rather than ability (Naglieri & Ford, 2005). Many teachers believe that aptitude, like IQ, is an innate, fixed characteristic of intelligence (Lohman, 2005a, 2005b). Others define aptitude as a measure of readiness to learn (Lohman, 2005a) that grows and changes with experience.

Predictors of academic success in school are assessments that measure current achievement domains taught in school: verbal and quantitative skills (Lohman, 2005b). If what Lohman (2005b) stated remains the measure for identifying gifted students, then minority students and students from low-SES backgrounds will remain underrepresented. Academic achievement is not the only indicator of intelligence (Naglieri & Ford, 2005). Many students exhibit intellectual giftedness and possess poor academic skills. Therefore, students should be identified intellectually gifted rather than academically gifted, and their giftedness should be measured commensurate with their label (Naglieri & Ford, 2005).

National norms on intelligence tests that are widely used to identify gifted students reveal scores that mirror the achievement gap (Erwin & Worrell, 2012). Nationally normed tests measuring academic achievement should show this result, because the achievement gap exists. This calls into question what is actually being measured when administering tests for the purpose of identifying gifted students: ability, aptitude, or achievement? Researchers disagree on the basic constructs underlying their identification processes.

IMPLICATIONS FOR EDUCATORS AND ADMINISTRATORS

The argument has been made that ability is acquired through a combination of experience, motivation, and culture (Lohman, 2005b). If this is so, then how can a single assessment be culturally fair for all students? The commonwealth of Virginia, like most states, mandates a multiple criteria gifted identification process in its regulations for educating the gifted (Virginia Department of Education, 2012). Gifted education researchers agree that no single measure could or should include or exclude a student from identification (Baldwin, 2005; Callahan, 2005; Lohman, 2005a, 2005b, 2012; Naglieri & Ford, 2003; Shaunessy et al., 2004; VanTassel-Baska, Feng, & Evans, 2007). The difficulty rests in choosing which assessment measures should be employed to cast the widest possible net to identify all gifted students, regardless of culture, language or SES.

The confusion and lack of shared meaning about the basic constructs associated with the gifted identification process serve to exacerbate the dilemma faced by gifted education coordinators. The current trend of utilizing alternative identification measures seems to be effective in identifying more minority, disadvantaged, and ELL students. The use of combinations of these measures may make the process even more culturally fair. For example, the use of a nonverbal assessment, recommendations from teachers and parents, and performance tasks may give a gifted identification committee a clearer picture of a student's potential than a single test of academic achievement. However, school districts must be clear about what is being assessed, and how that information will be used when making placement decisions.

A reality that many school districts face is lack of funding for gifted identification. Group-administered standardized tests are expensive to purchase and score, even though many of them can be administered by a classroom teacher with minimal training. The use of local norms requires census testing (i.e., a district-wide screening) to maintain validity. This may be a cost that a school district is not willing to absorb for its gifted programming. Consequently, the choice of standardized test must be made with careful consideration given to all aspects of a gifted program.

The trend of utilizing alternative identification methods for the purpose of identifying more minority, disadvantaged, and ELL students is a move in the right direction for meeting the needs of all students. However, all of these measures lose their impact if teachers are not trained in how to administer and interpret them. Further, ongoing professional development is needed in recognizing gifted behaviors in students outside of a teacher's culture. Teachers are very often the gatekeepers to gifted programming because they are relied upon to recommend students for gifted identification. It is imperative that they are trained in understanding the unique characteristics of gifted minority students. Unless all students are census tested each year, the gifted identification process cannot

even begin until a nomination is made, and this most often comes from the classroom teacher (McBee, 2006).

CONCLUSION

The use of alternative identification methods is a trend that will, in this author's opinion, ultimately become a matter of course among gifted identification processes across the United States. Our ever-increasing diversity among school children demands that educators become more culturally responsive, and the same mandate must be so for gifted education. Students demonstrate different abilities in different ways. In order to successfully meet the needs of all learners, educators and administrators must equip themselves with enough of the right tools to accurately measure this myriad of ability. Ongoing research is needed to gauge the effectiveness of these alternative measures so that gifted students will be identified regardless of culture, language or socioeconomic condition.

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