

MISUSE OF TESTS IN IDENTIFYING GIFTED AND TALENTED CHILDREN

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Abstract

After many years of discussions and policy formulations, the identification of gifted and talented children remains an issue of concern to third-world countries, particularly with respect to testing and identification. Identification of the gifted and talented has not taken the expected dimension specially in Nigeria. Many students continue to be underrepresented in programs for the gifted and talented because of assessment instruments that are predominantly targeted at the achievement abilities of students. Meanwhile, the multidimensionality and sociocultural facet are highly neglected in many identification tests for giftedness. Strong arguments are evolving on the development and appropriate use of tests for gifted identification. It is against this backdrop that this article presents the areas of danger in the misuse of tests in gifted and talented identification. It also looks at the appropriate consideration for the development, standardization, and use of tests in the identification procedure of giftedness and talents in youngsters.

Keywords: Tests Misuse, Gifted and Talented, Gifted Identification,

Introduction

The identification of gifted children in Nigeria is a challenging task for educators primarily due to the complexity of the phenomenon, the difficulty of clearly conceptualizing giftedness within certain bounds, and most importantly, the fact that there are no or limited local tests for the assessment of giftedness and talents. The multi-dimensionality of the concept suggests that intelligence is not sufficient to explain giftedness even though it plays a key role. This role of intelligence in giftedness has over the years coveted all the attention of researchers in terms of test development and programming to the detriment of other aspects of giftedness and has flawed the identification process due to the wrong use of tests. Few researchers and educational

institutions have therefore included other psychological dimensions of giftedness in terms of test development and program placement (Gagnéth 2015). The understanding of the multi-dimensionality of giftedness not only places a demand on reorienting researchers and professionals in Nigeria but most important task them to develop reliable and validated tests specific to each dimension of giftedness to be identified. Misuse of tests in this context is the use of single-score tests that are biased against the multi-dimensionality of giftedness, one-size-fits-all tests, and the use of tests that lack reliability and validity in identifying gifted students.

Recent orientation recommends the use of comprehensive assessment instruments in order

to capture the broad spectrum of high ability (Hernández-Torrano, Férrandiz, Ferrando, Prieto & Fernández, 2014). The diagnostic evaluation also usually requires protocols that exceed the classic IQ tests approach that include other components or characteristics associated with high capacities. Following the knowledge about the characteristics to be identified, schools need to select the appropriate identification tools. This means schools are not expected to use every tool every time, but to make a selection that best matches your context. This avoids a situation where one instrument or inappropriate instruments are used to measure domains the test was not meant to measure. For instance, literature reviews show that most giftedness identification systems are based only on intelligence measures usually when a student receives a test score of two standard deviations above the mean, although cut-off scores are controversial since usually are determined in an arbitrary manner according to local needs as pointed by Lichtenberger, Volker, Kaufman, and Kaufman (2006). The use of a wrong test not only ensures that many gifted students are missed out but also compromises the objectives for which the program was designed (Gallagher, 2005). Identifying a child as gifted based on standardized tests alone is a compromised practice that fails to get to know the child as a whole.

Teachers, policyholders, and school districts often possess a one-sided perspective of identifying giftedness, especially with minority students. They fail to realize the significance of differentiating and using appropriate testing just the way they differentiate instruction. Schools and program planners are required by sound practice to ask questions such as what domains of giftedness is this program targeting. What tests are appropriate for identifying such traits? Are there tests reliable and valid for the intended purpose?

To identify gifted youth in a sociocultural diverse context like Nigeria, one usually needs not only an adequately differentiated set of appropriate instruments, but also has to consider the scale and the test quality characteristics, such as objectivity, reliability, and validity. The identification procedure involves several steps: First, a general

screening takes place. This means that a less exact, but wider, range of factors and instruments is included, e.g. checklists – often in combination with rating scales. In the next step, more precise tests are employed for the determination of the individual talent dimensions. Finally, individual and social moderator variables are collected which are relevant to the training gifted program or special educational measures. The final selection is thus more accurate than the screening which helps to reduce the danger of not recognizing talents. Such selection decisions generally include risks. The risk of type I or *alpha error* consists of a person being identified as (highly) gifted when he or she is, in fact, not (highly) gifted. Already, determined in the screening phase (exhausting quota according to Pegnato & Birch, 2010). It is the more important of the mentioned criteria in identifying as many of the gifted as possible.

One of the primary issues involved in the identification of potentially gifted students lies in the types of tests used in gifted identification. Many researchers (Winsler, Karkhanis, Kim, & Levitt, 2013) consider tests designed to measure intelligence to be biased against culturally, linguistically, and economically diverse students not because the test is not good but because these tests look for traits not found in this group of students regardless of the fact that they are gifted in some other traits. These traditional tests do not recognize the existence of non-cognitive and personality abilities that are sociocultural relevant both to the individual and the society where the individual lives (Fulabi, 2018).

Also, methodological issues concerning identification include various aspects, such as problems with the definition of relevant indicators, sources of diagnostic information, or measurement problems (Winsler, Karkhanis, Kim, & Levitt, 2013). Furthermore, diagnostic decision strategies with respect to specific sources of error, and the economy of the selection of talented students for appropriate gifted programs are also included. According to the currently more favoured multidimensional concepts of giftedness and talent, the following behavioral characteristics are considered to be indicators of a special talent in childhood and

adolescence: cognitive aptitudes like intellectual precocity, quick comprehension and high speed of learning, being quick to pick up concepts, often ahead of the usual time, distinct curiosity, a large vocabulary for one's age, creative (original) ideas and methods to solve complex problems, the individual challenging tasks or questions, eminent cognitive abilities to think convergent (as indicators of intelligence) and divergently, sensitivity for problems, spontaneous inclination toward challenging and difficult tasks and thought problems, distinctive metacognitive competencies (Jarosewich, Pfeiffer & Morris, 2000).

In the procedure of assessing the influence of non-cognitive personality factors, as well as socio-cultural conditions of the individual's environment, the following items are considered as moderators: intrinsic achievement motivation and striving for success, willingness to take risks or persistence and striving for perfection, preference for independent learning style, coping with stress, test anxiety or control expectations among others. Thus, using the traditional tests to identify all these non-cognitive and personality dimensions of giftedness is a misnomer and becomes a misuse or wrong use of tests. Such misuse of tests produces results that deviate from the expectation which at the foundational level compromises the objectives of any intended program. Based on this background, this paper focuses on exploring different ways tests are considered misused in identifying a group of gifted and talented students. This may include:

Reliability and Validity of Construct

Test selection to identify gifted and talented students is a difficult and problematic task faced by schools and educators. For a test not to be misused, it is important that the evaluation of tests should include consideration of the reliability and the validity of instruments according to the specific purpose for which they are being used, the population on which they will be used, and the other characteristics considered vital for fair test use. No theoretically based definition of giftedness will fit all programs and circumstances as well as the domain for which a particular test was intended to measure (Roach & Bell, 2016). Thus, the criteria or test selecting gifted students

in any circumstance must match the original rationale or dimension of giftedness intended by the school or institution to harness and develop. The credibility of the identification decision-making process rests on the test and strategies that allow for reliable and valid measurement relative to the construct under consideration.

Most programs for the gifted continue to focus on general intellectual ability and specific academic areas (Johnsen, 1986). While tests of intelligence provide relatively objective, reliable, and valid measures of general intellectual ability in the sense of predicting general school achievement, they give little information about specific talents, even in the intellectual domain (Goldberg, 1986). Assessment using only traditional intelligence tests appears questionable for assessing across all the constructs within the broadened conception of giftedness and inappropriate for use in identifying ability in specific academic areas, the arts, creativity, or leadership.

Several questions have been raised about the validity of instruments used for the identification of giftedness across all definitions and components of giftedness. Studies examining the viability of assessing gifted children in the area of general intellectual ability, for example, have produced varying findings as to whether the instruments had a strong relationship to the construct being assessed (Carvajal & McKnab, 1990). In another domain, that of creativity, Runco (2016) found that the assessments of the various constructs lack discriminate validity. Predictive validity related to gifted program performance has not been established for most instruments used in the identification of gifted students (O'Tuel, Ward, & Rawl, 2013). Further, intelligence, achievement, and creativity tests have failed in establishing predictive validity for adult success within the gifted population (Kirschenbaum, 1983). It behoves educators at all levels to examine the predictive validity of instruments used to identify gifted students.

Despite the arguments that assessments of less traditional aspects of giftedness do not lend themselves readily to standardization and quantification and that assessments generally

depend on some form of pooled judgments, it is still imperative that any test, rating scale or other assessment tool have suitable evidence of reliability and validity for assessing the area of talent being considered. If there are differences in the underlying constructs of the ability necessary to create artistic products and scientific breakthroughs, the identification of talent in these domains must be distinct with both instrument selection and identification procedures based on the underlying concept of talent in that domain. There are no "one-size fits all" instruments (Ojuagi, 2010).

Inappropriate tests for the identification of giftedness and talents in Nigeria

The obvious lack of adequate tests for the identification of the broad spectrum of giftedness and talents in Nigeria has resulted in misuse and abuse of the unreliable and invalidated available cognitive-based tests in use over the decades. Governments, schools, and organizations have most of the times resorted to employing randomly generated test items in sciences and the English language without reliability and validity procedures to determine eligibility for gifted programs, scholarships, or some advantages for smart test takers in the name of giftedness (Ojuagi, 2010). Nigerian society is endowed with an immeasurable wealth of gifts and talents that school-based tests cannot recognize but unfortunately, these biased tests have been the sole criterion for eligibility for gifted programs.

Use of test outside test domain

Misapplication of tests for identifying gifted and talented expresses itself when a particular test is used outside of the domain it was developed to measure. For instance, the use of the traditional test as a criterion for eligibility in some specific talent or talent search programs. The use of an arbitrarily rigid cut-off IQ score or summed matrix score as the basis of identification has been widely criticized in the literature (Renzulli & Delcourt, 2000). Educators must know that tests are limited within the domain for which they were designed to measure and any misapplication compromises the whole process of identification and the intended objectives of the program. Further, the score of an individual on a single instrument is best conceived as a range of scores,

not a single point, due to errors in measurement (Kirschenbaum, 2003). Yet, many schools or institutions have used cut-off scores as the sole basis of identification either independently or because of the guidelines or the stated policies (Treffinger, 2002). In Nigeria, for example, to be eligible for a gifted program, the sole criterion a student must achieve is a minimum score on an intelligence test (Oguyi & Olungu, 2012). In these gifted programs, group standardized achievement test scores are used as a cut-off in determining who enters the pool for further screening.

While intelligence test and standardized achievement test scores are relatively stable and consistent scores, the use of these scores rigidly and alone as a criterion for identifying gifted students belies the current theory that giftedness includes non-intellective factors, that giftedness may manifest itself through a variety of means of expression, and that giftedness may be domain-specific (Ojuagi, 2010). Intelligence tests are best regarded as reliable indicators of analytic skills which predict school achievement very accurately. They are useful as part of a full process of screening and identifying giftedness when giftedness is defined as a global construct predicting school achievement. Similarly, the use of a single achievement test score is flawed. The use of intelligence and/or achievement test scores is appropriate when (a) the definition of giftedness matches the construct measured by the instrument, (b) the score is viewed as a band of scores incorporating the standard error of measurement of the test, and (c) the score is part of a full consideration of both cognitive and non-intellective factors, contributing to giftedness (Treffinger, 2002).

Test Bias

Many tests are considered misused in certain circumstances because they are prejudiced or unfair to groups or individuals characterized as different from the majority of test takers. These groups may include ethnic minorities, indigenous people, women or men, individuals whose first language is not English, and persons with disabilities (Terfara & Cone, 2008). Charges of test bias may stem from the test's content and format, performance differences among groups,

and the purposes for which the test results are used. The central question is whether or not tests are biased against certain populations, thereby putting some students at a disadvantage in educational decision-making about placement and the kind of education they would receive.

Borland (1986) has summarized the limitations of IQ tests as follows:

- I. Since intelligence is "something richer, more complex, and more extensive than the mental prowess required to achieve a high IQ, such tests are not valid measures;
- ii. IQ tests produce different results for different racial and ethnic groups, "reflecting the pervasive bias found in our society; and
- iii. IQ tests "have on occasion been both the method and the pretext for some appalling abuses of children in our educational system.

Also, Reynolds and Kaiser (1990) point out that six reasons have been suggested as the basis for standardized test bias:

- (a) inappropriate content,
- (b) inappropriate standardization of Samples,
- (c) examiner and language bias,
- (d) inequitable social consequences,
- (e) Measurement of different constructs, and
- (f) differential predictive validity.

With respect to widely used tests of mental ability, the major criticisms have to do with content, construct, and predictive or criterion-related validity.

In reality, the under representation of minority participation in programs for the gifted in Nigeria is most frequently attributed to biases in tests based on test content and format, performance differences among groups, and/or the purposes for which test results are used. It has been argued that standardized tests discriminate against students who's linguistic and perceptual orientation, cognitive style, learning and response styles, economic status, and cultural or social background differed from the dominant norm group. White, middle-class, native English-speaking populations.

For example, Hilliard argues that testing instruments and practices developed in the Euro-American tradition are invalid measures for African Americans, a position shared by Schiele (2000). Hilliard asserts that mean core differences on standardized tests are more a result of racial discrimination than a result of low intelligence. Similar criticisms regarding the inappropriateness of tests developed in the Euro-American tradition have been made for other minority group children (Oakland & Samuda, 2009). It has been alleged that with some assessment practices, the goal is to label minority students as "limited learners" with the result that a greater proportion of them are placed in lower tracks where diminished outcomes are expected (Hilliard, 1991).

Further, Hilliard (1991) has questioned the scientific adequacy of aptitude and achievement tests: "Cultural bias only shows us that standardized mass-produced 'measurement' is impossible when variable cultural material is being aggregated in cross-cultural settings. The culture and measurement issue has become a matter of science first, then equity. With regard to language differences and their probable contribution to test discrimination, Taylor, and Lee (1991) counsel that incongruence between the communicative behaviour or language of the test and the test taker can result in test bias. They cite five areas as examples of culturally based communication and language bias in standardized tests:

- (a) situational bias,
- (b) linguistic bias,
- (c) communicative style bias,
- (d) cognitive style bias, and
- (e) interpretation bias.

Situational bias occurs when there is a mismatch between the tester and the test taker caused by differences in the social rules of language interaction. This mismatch can lead to faulty assessments of cognitive, social, or language behaviour because of misinterpretations, misunderstandings, or rejections of the test-takers responses. Linguistic bias refers to errors that non-Standard English speakers may make in responding to test items written in Standard English, even when they have the required

knowledge (Solude, 2000). Communicative style bias refers to the errors that can be made when test takers are required to respond in a manner that is socially and culturally different from their accustomed style of communicating. Cognitive style bias occurs when individuals from different cultural groups demonstrate their abilities in ways that are incompatible with the style required for successful performance on standardized tests. Finally, test interpretation bias occurs when a test-takers response to a task is compared with that of a norming sample with an expectation of uniform development of phonological, morphological, and syntactical rules. To overcome these biases, Taylor and Lee suggest that standardized tests must be revised to reflect new elicitation procedures, methods of evaluation, and variations in the types of behaviors chosen as representative of language competencies.

Dealing with misuse of tests

The following measures hold the potential to remedy assessment problems in certain settings and contexts, but however, none provide a comprehensive answer. These include:

Multiple Criteria and Non-traditional Measures

The use of multiple criteria and non-traditional measures—i.e., measures other than or in addition to IQ tests—figures prominently in many of the proposals to improve the identification and consequent representation of gifted students from minority populations. Although proposals to utilize multiple criteria are usually made to enhance the opportunities for minority students to be considered for selection for gifted programs, they have implications for the diagnosis and assessment of all students who may be penalized by limitations of traditional measures.

The prevalence of multiple criteria and non-traditional measures is not clear. A survey by Patton, Prilliman, and VanTassel-Baska (2019) of the nature and extent of programs for disadvantaged gifted learners in the 50 states and territories found neither the extensive use of multiple criteria nor a focus on the "gifted behaviours" of minority students. Over 90 percent of the states and territories use norm-referenced tests to some extent, but only 40 percent reported

"moderate" or "great" use of non-traditional approaches. For example, 38 percent of the states used no observational techniques at all. On the other hand, Coleman and Gallagher (1992) found that while all 49 states that have policies employ some form of standardized IQ and achievement test, they utilize other criteria as well: 46 states include "outside school activities, work samples, or products; 43 include measures of creativity; and many states permit input from teachers, parents, students, and other sources to assist with decision making.

Other non-traditional procedures proposal includes expert judgment, stoichiometry, observations, autobiographies, and self-reports as alternatives to traditional procedures. These alternatives are criticized as contributing to lower or watered-down program standards. Sometimes, accusations of "reverse discrimination" are voiced by parents whose children score at lower levels and are denied program admission as well as by parents whose children score higher on traditional measures but are not selected on the basis of alternative criteria (Patton, Prilliman, and VanTassel-Baska, 2019).

There have been numerous proposals that selection criteria be modified for minority students by, for example, lowering cut-off points or creating quotas (Dada & Merimekwu, 2021). These procedures are controversial because students identified by modified criteria are often perceived as not really exhibiting the same high levels of potential and being chosen on diminished standards. Even those minority students who do meet the unmodified standards are perceived as having met only the lowered criteria. Proposals have been made to combine data from different measures but these have been criticized on the ground that such syntheses are neither valid nor statistically sound. It is argued that because tests and scales often differ in purpose and in norming procedures, scores derived from them cannot be readily nor meaningfully combined or collapsed.

The use of multiple criteria and non-traditional measures other than or in addition to IQ tests figures prominently in many of the proposals to improve the identification and consequent

representation of gifted from minority populations. Proposals to employ multiple criteria are usually made to enhance the opportunities for minority students to be considered for gifted programs, but have no clear implications with respect to the diagnosis and assessment of all students who may be penalized by limitations of traditional measures (Dada & Ogunbare, 2017). However, although the use of multiple criteria is widely advocated, in practice actual employment tends to be somewhat limited.

Nomination and Referral Processes

The first step in the gifted identification process for many schools, is nomination or referral for assessment. Depending on location, the nomination or referral might come from any number of resources—a classroom teacher, other school staff member, self or a parent. In some locations, students can refer themselves or another student for gifted screening. The nomination and referral process have historically added a good bit of complication to the entire gifted identification issue. Much of this is due to numerous studies that have revealed that under representation of minority students in gifted programs is often furthered by inequitable nominations of students from these groups. In many places, classroom teacher referrals act as the gatekeeper which determines which students are, and which students are not, evaluated for the gifted program. However, in Nigeria nomination processes accompany bias and subjectivity that tend to compromise the process (Kejuo, 2009). This is the reason why such programs in the country are rather considered elite programs

Conclusion

The multi-dimensionality of giftedness and talents entails that the identification measures are domain-specific. Due to this multi-dimensionality and complexity of giftedness and talent, there is a need for a wide process of identification, based on all available information sources, using multiple criteria like standardized tests and informal instruments (teacher and parent checklists, questionnaires, school products, and portfolios). A comprehensive process is considered the best practice for identifying gifted children. The recognition of multiple perspectives and the use of many sources of

information can enlarge the giftedness assessment, reduce the number of false positives and negatives in the identification process, and allow the identification of different types of talents. Therefore, there is a need for a more comprehensive giftedness identification in Nigeria.

Recommendations

1. Schools and institutions and organizations should seek out those identification strategies appropriate for the specific domains the school district has elected to serve. There should be separate instruments and procedures should be considered for each of these areas such as general intellectual ability, specific academic ability or achievement, music, and dance, among others. Not one size fits all tests in the identification of gifted and talented students.
2. IQ tests or any checklists should not be used in isolation, even though standardized tests are believed to be very useful identification tools. A combination of screening and nomination tools will be more effective in identifying children with a variety of giftedness and talents in different areas.
3. Teachers, parents, and students should all be offered a part to play in identifying gifted and talented children. Ideally, we need a team of professionals, including teachers, school psychologists, parents, and students themselves, to assess and plan for each child, and to provide her/him with appropriate individualized education.
4. Thus, teachers need to equip themselves with the knowledge and skills that are suitable for identifying the gifted. Learn about the different cultures and backgrounds of your students, get to know more about what they value, and learn about the most popular topics they are interested in discussing.
5. All test used in the identification of gifted

and talented children should be valid and reliable.

6. There is need for developing local multidimensional screening procedures for identifying giftedness for Nigerian children

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