Exploratory Review of Alternative Individual Ability Tests in Education With Standardized Tests

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ABSTRACT
This paper discussed on Standardized tests, advantages and disadvantages; alternative individual ability tests, types advantages, advantages and comparisons. In as much as standardized tests have been created with good intentions to help assure the state/nation that the students are being taught with the correct curriculum and the accepted method of assessment of IQ. It is also believe that standardized tests have created more issues than anything, have created stress, bias, competition and fights. Furthermore, standardized tests only measure a sample of behaviours or situations in which intelligent behaviour is revealed. For instance, some standardized tests do not measure a person's everyday functioning, social knowledge, mechanical skills, and/or creativity. Along with this, the formats of many standardized tests do not capture the complexity and immediacy of real-life situations. Therefore, standardized tests have been criticized for their limited ability to predict non-test or non-academic intellectual abilities, since their scores can be influenced by diversity of different experiences and performances, they should not only be considered a perfect indicator of a student's intellectual potential but involve other ability tests. Nations, states, schools should include alternatives tests to identify students with other special abilities for drop-out reduction.

Keywords: Standardized tests, intelligence, intelligent behavior, Intelligence Quotient’

INTRODUCTION
One of the most deliberated issues about intelligence is how to measure it. While many establishments, institutions, organizations’ and governments have accepted the ‘Intelligence Quotient’ test as the standard method of determining levels of intelligence, there have also been many criticisms and reservations. The standardized test has been accepted as a means of test but also criticized to be bias to special population because of their location, language, disability and impairment (Bob, 2016). Children are dropping out of school yearly because of failure to meet the cut-off mark for admission. Therefore, a number of alternative tests are designed to measure intelligence/ability for specific purposes and population as the needs arise.

A test is instrument use information for assessment, also refers to procedures used to measure intelligence/ability at a specific point in time, and often involves collection of information in numerical form. An ability test is a test design to determine an individual's proficiency to perform a certain kind of task. It is usually used in assessing individual for certain skills or whether he is capable of acquiring those skills in the course of the job or through training. The ability tests can be used to test variety of skills; mental aptitude, mental retardation, problem solving and knowledge of a particular subject, reasoning
ability, general intelligence and so on. The ability test can also be used to assess what a person is capable of doing or to predict what a person is able to learn or do, given the right education and instruction. It represents a person's level of competency to perform a certain type of task and such tests are often used to assess academic potential or career suitability, also such tests may be used to assess either mental or physical talent in a variety of domains. While intelligence tests are standardized tests used to establish an intelligence level rating by measuring a subject’s ability to form concepts, solve problems, acquire information, reason, and perform other intellectual operations and to measure a variety of mental functions, such as reasoning, comprehension, and judgment (Wechsler, 2014).

The goal of intelligence tests is to obtain an idea of the person's intellectual potential and centres around a set of stimuli designed to yield a score based on the test maker's model of what makes up intelligence. When determining whether or not to use an intelligence test, a person should make sure that the test has been adequately developed and has solid research to show its reliability and validity (Ron, 2014). Alternative tests are tests that allow students with disabilities to be assessed on extended or alternate standards that are aligned with the overall stated standards (Ysseldyke and Olsen, 1997). Alternative individual ability tests are designed for testing students who are unable to take the regular standardized test, even when testing accommodations are provided. These tests are administered individually by a special education teacher and the modes of administration vary from state to state or country to country and may include observations, checklists, individually administered tasks, or collections in and out of the classroom. Therefore, this paper seeks an exploratory review of alternative individual ability tests with standardized tests.

There are different types of alternative tests but for the purpose of this paper, the following are discussed as stated by Robert and Dennis (2009):

1. **Peabody Picture Vocabulary Test (PPVT)**
   Peabody Picture Vocabulary Test (PPVT), an instrument used for assessing vocabulary knowledge in children and adults. It is well suited to the assessment of children’s vocabulary acquisition and for identification of children with language impairments and it was designed for age range between 2 - 90 years. The test purports to measure hearing or receptive vocabulary, presumably providing a non-verbal estimate of verbal intelligence. It is use as a screening instrument or as a supplement to other measures in evaluating learning problems and many other special problems. The (PPVT) can be administered in 45 minutes or less, and it requires no reading ability. This test is in two forms, each form has 204 plates, with each plate presenting four numbered pictures. The subject must indicate which of the four pictures best relates to a word read aloud by the examiner. Items are arranged in increasing order of difficulty, and the demonstrator must determine a basal and ceiling performance, as in the modern Binet scale. The number of incorrect responses is subtracted from the ceiling to produce a total score. The PPVT is used for retarded and gifted children, research has supported its use for certain adults, such as those with developmental handicaps, (Kendra, 2017). However, the manual advises caution when using the test with adults, even where its use is supported, the Peabody test tends to underestimate IQ score (Robert and Dennis, 2009) and (KAY, 2017), because it can be best use to evaluates only receptive vocabulary, thus cannot be used as a substitute other major scales but should be used as alternative test. Nevertheless, the latest revision meets today’s rigorous psychometrics standards as it is importance to use it for general screening purposes and to evaluate receptive vocabulary, also easy to administer while the test manual instructions to be followed carefully (Robert and Dennis, 2009).

2. **Gesell Developmental Schedules (GDS)**
   The GDS is also known as the Gesell Maturity Scale. This is one of the oldest and most established infant intelligence measures. It was first published in 1925 (Robert and Dennis, 2009). The Gesell scale has been subjected to extensive research and refinement which has been the leading infant intelligence measure since the 1930s. The Gesell Developmental Schedules (GDS) provide an appraisal of the developmental status of children from 2 to 10 years of age.
According to Roid and Barram, (2014) the GDS is based on data from carefully conducted longitudinal study of early human development. The idea behind procedures based on development data is that human development unfolds in stages or in sequences over time. Gesell and his colleagues obtained data concerning these various stages in maturation, with data on which specific development milestones manifest themselves. Also if the child shows behaviour or responses that are associated with a more mature level of development than is a typically found for his or her chronological age, the one can assume that the child is ahead in development compared with others of the same age. Accelerated development can be related to
high intelligence.

In Gesell scale, an individual’s developmental quotient (DQ) is determined according to a test score, which is evaluated by assessing the presence or absence of behaviour associated with maturation. The DQ concept parallels the mental age (MA) concept. Thus, the Gesell produces an intelligence quotient IQ) score similar to that of the Binet scale according (Robert and Dennis, 2009). The formula for IQ in the Gesell scale is as follows:

\[
IQ = \frac{DQ \times 100}{CA}
\]

OR

\[
IQ = \frac{Development\ Quotient \times 100}{Chronological\ Age}
\]

The test main value is in obtaining an early estimate or possible mental retardation and helps uncover subtle deficits in infants but evidence of reliability or validity is poorly documented. Kendra, (2017) stated that Despite years of extensive use and updating, the Gesell scale continues to fall short of acceptable psychometric standards, also the standardization sample is not representative of the population as evidence of reliability or validity is poorly documented.

3. Kaufman Assessment Battery for Children (KABC)

Originally a product of the early 1980s, the modern version of the KABC is an individual ability test for children between 3 and 18 years of age (Robert and Dennis, 2009). The KABC contains 18 subsets combined into five global scales called sequential processing, simultaneous processing, learning, planning, and knowledge. It is intended for psychological, clinical, minority-group, preschool, and neuropsychological assessment as well as research. It also purports to enable the psycho-educational evaluation of learning of disabled and other exceptional children, educational planning and placement.

Robert and Dennis (2009) also stated that theoretically, KABC is based on several approaches: the neuropsychological model of brain functioning, split brain functioning and information processing. In all these, the Kaufman noted a major distinction between two types of higher brain processes, which he referred to as the sequential and simultaneous distinction. Sequential processing refers to a child’s ability to solve problems by mentally arranging input in sequential or serial order. Examples of sequential processing are numbers and word-order recall, presenting one at a time; items must be dealt with sequentially, rather than all at once. In contrast, simultaneous processing takes place in parallel. It refers to a child’s ability to synthesize information (from mental wholes) in order to solve a problem.

In addition Robert and Dennis, (2009) reiterated that a major intent of providing separate measures of simultaneous and sequential processing is to identify the child’s unique strengths and problem-solving strategies. Such information can presumably help others develop educational and remedial intervention strategies for the child. The test is specifically designed to measure ability of children who are linguistically different or handicapped. According to Ron, (2014) there is a considerable level of validity but so much work needs to be done.
Robert and Dennis, (2009) stated that based on the modern concepts of human information processing, the ITPA assumes that failure to respond correctly to stimulus can result not only from defective output (response) system but also from a defective input or information-processing system. This test assumes that human response to an outside stimulus can be viewed in terms of discrete stages of processes. In stage 1, the sense receives input, or incoming environmental information. Thus, the information must first be received by the sense before it can be analysed. During stage 2, this information is analysed or processed. Finally, having processed the information, the individual can make a response.

Assuming that a learning disability can occur at any level of processing, the Illinois test stated that the child may be impaired in one or more specific sensory modalities. Input may be visual, auditory, or tactile. The Illinois test provides three subtests that measure the individual’s ability to receive visual, auditory, or tactile input independently of the processing and output factors. Three subtests (auditory, visual and verbal) provide independent measures of processing in each of these three modalities, and other subtests provide independent measures of motor and verbal output (Ron, 2014).

By providing relatively independent measures for each of these areas, the Illinois test purports to help isolate the specific site of a learning disability. For example, a child may receive age-appropriate scores for all three inputs and three processing subtests but may have an unusually low score on motor output. This result would indicate that, although the child can receive and process information as well as others do but has trouble in motor output. This test is designed for use with children between 2 to 10 years of age and has been criticized on inadequate validity and low reliabilities for individual subtests.

Advantages
1. Takes into account the individual background and needs of every unique learner.
2. Considers the big picture of the individual progress over an extended period of time.
3. Flexible, responsive and continually developing according to curricular objectives.
4. Takes into consideration different learning styles and preferences.
5. Allows language learners to demonstrate content knowledge and skills mastery without language barrier difficulties.
6. Highly effective for use with individuals who are entitled to accommodations and/or modifications.
7. For special population and purposes

Disadvantages
1. Weaker psychometric properties.
2. Time consuming
3. Specialist is involved

Standardized tests
Standardized tests are tests carefully constructed by test experts with a uniform procedure of selection of items, administering, scoring and interpreting the test results. Hence, they are homogeneous in all stages showing fairness and unbiased to all, irrespective of the school or location. Standardized test also possess the qualities of a good instrument such as reliability, validity, usability.

Characteristics of Standardized Tests
1. Standardized tests are usually written by subject specialist and experts.
2. Standardized test covers a very wide content area.
3. The content of standardized tests are usually made standard for all testees. In order words, all testees answer the same questions irrespective of their schools, gender, location, etc.
4. The procedure for administering, grading and reporting are usually made standard. All the testees are given the same instructions and time limits irrespective of their schools and locations.
5. Standardized tests have norms (i.e., frames of reference). Based on these norms, testees’ results can be interpreted according to their schools, age, gender, location, etc.
6. Test manuals and scoring stencils usually accompany standardized tests.
7. Standardized test items are usually of very high quality because they are developed by test specialists who try out experimentally as well as selected based on their facility and discrimination indices.

Standardized tests were originally developed to help place children in appropriate educational settings, and determine the level of intellectual and cognitive functioning in pre-schoolers, children, adolescents, and adults. It is used to provide educational planning and research. It is considered to be the best and most widely used intelligence tests available as it is especially useful in providing intellectual assessment in young children, adolescents, and young adults. The test has been criticized for not being comparable for all age ranges. This is because different age ranges are administered different subtests. Additionally, for very young pre-schoolers, it is not uncommon to receive a score of zero due to test difficulty or the child's unwillingness to cooperate. Consequently, it is difficult to discriminate abilities in this age group among the lower scorers.

Advantages
Standardized tests have the following advantages:

1. Good measures for student performance: These tests are generally good at measuring students' knowledge, skills and understanding because they are objective, fair, efficient, and comprehensive and are usually written by subject specialist and test experts to cover a very wide content area for all test-takers of the same grade level irrespective of their schools, gender or location without any bias. For these reasons, they are used for decisions about admission to colleges, universities, and professional schools as well as qualification and licensing for many skilled occupations and demanding professions such as law and medicine.
2. Targeting Areas for Development: Students benefit directly when they take tests that offer information on how well they have mastered the material intended for learning. Reading and mathematics skills, for example, can precisely specify how much the students learn the skills, and benefit from on-going information tailored to their specific individual progress.
3. Guidance for Teachers: It can be very difficult for teachers to build a comprehensive lesson plan that they can follow. These help them to organize the things that they teach and when they should teach them. The standardized test is a powerful tool to guide schools and educators.
4. Measures of Ability: Along with setting standards of comprehension and knowledge, it also allows certain areas or levels to be compared on a nationwide and/or even global level.
5. Useful assessment tool: One of the advantages of standardized testing is an effective way to assess if a child is prepared to go to school based on intellectual levels. By having a set of questions answered by all the students in a certain grade level, it will be easier to assess if he or she is ready to move on to the next grade level and/or if the student needs a special education. If yes, then he or she can join a class or be enrolled in a special course fitted for his intellectual capacity.
6. Level playing field: Since students will be answering the same sets of questions, test-takers will be on the same playing field with no special treatment. These questions are given in a standardized format and computation of results is devoid of human intervention.

Limitations
Jessie, (2014) stated the following reasons why Standardized tests are biased:

1. Lost learning time: More time and focus are given to learning about testing and test preparation to the neglect of other curricula
2. Lack of feedback: Teachers and students are not given privilege to have correction or knowledge on the failed items in standardized tests.
3. Loss of curiosity and love for learning: Emphasis on standardized tests has limited the students’ natural curiosity to learn and discover new things.
4. Reduced content knowledge: Students are learning how to take tests, but cannot demonstrate subject mastery when tested in a different format.
5. Narrowed curriculum: With the focus on reading and mathematics scores, students lose history, world languages, the arts, and other programmes.
6. Shut out of programmes: When all effort is geared towards standardized test, other programmes are shut out.
7. Diverted resources: Schools that perform poorly on high-stakes-tests are labelled “failures” and sometimes have resources taken away from them. More money is invested in standardized test than available for classroom education. Parents also change their children schools when they performed low in these tests.
8. School closures: Schools labelled as “failing” on the basis of test scores can be threatened with closure. These schools are usually in communities where no infrastructures are provided for effective teaching and learning.
9. Blocked access to facilities: Many schools find their computer labs taken over by testing rather than available for learning.
10. Harmful stress: Children are pressured to not only demonstrate their knowledge but to represent the effectiveness of their teachers and their schools. Teachers have reported children throwing up, losing control of their bowels, and increased commitments for psychiatric and anxiety issues.
11. Internalized failure: Struggling students who are forced to repeatedly take standardized tests are made to believe they are “bad” or “worthless” students who cannot succeed in school.
12. Graduation requirements: So many students are out of school on the basis of a single test score.
13. Altered school culture: Schools must empty their walls and hallways for many weeks. Classes are under lock-down with limited access to restrooms, and some schools turn to daily announcements or even pep rallies to “prepare” students for testing

**Alternative individual ability tests with Standardized tests**

The standardized tests attempt to take an “across the board” measurement of a student’s educational intelligence. It is used to decide current averages and identify high and low performers; all test takers answer the same questions, duration of time and are scored in the same way, so this makes it possible to compare individual students based on their performance. The testing sample can be as small as a classroom or as broad as the entire country.

The Standardized tests sometimes do not accurately measures all aspect of intelligence; the challenge is the concept of a general intelligence, which is entirely representative of intelligence levels and measurable by these tests. They do not take into account influences from genetics, cultural and social background, location, and even personality of the test-taker. There is also argument whether intelligence is a fixed quantity that can be measured and whether it actually encompasses a broader conception than what is measured in IQ tests. These tests only measure a part of what is commonly understood as “intelligence”.

People have unique strengths and weaknesses in different areas and fields, whereas these tests tend to over-emphasize the general intelligence. There are multiple abilities which cannot be measured with these tests. Alternative tests of ability should be used where these tests could not generally be in order to reduce drop-out of schools and to identify students that require special attention. Standardized tests also are often inappropriate for children with mental developmental problems, since the skills measured (adaptive) are poor indicators of intelligence in such children and have resulted in the incorrect assumption that most children with mentally retarded. Alternative tests of ability are made to identify individual strength, weakness and their abilities in order to encourage, educate and train the individual in the area so identified to avoid drop-out.
Comparison of standardized tests and Alternative tests

<table>
<thead>
<tr>
<th>S/N</th>
<th>Standardized tests</th>
<th>Alternative individual ability tests</th>
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<tbody>
<tr>
<td>1.</td>
<td>They are based on vast content areas and broad objectives common to all students in a given class or level.</td>
<td>They are based on small content area and objectives covered by the tests as required.</td>
</tr>
<tr>
<td>2.</td>
<td>They measure broad objectives based on common syllabuses or curricula.</td>
<td>They mostly measure specific objectives of lessons or units</td>
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<tr>
<td>3.</td>
<td>Items usually possess high validity and reliability because they are developed by subject specialists and test experts.</td>
<td>Items usually possess poor validity and reliability because they are developed for specific purposes</td>
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<tr>
<td>4.</td>
<td>Items are of high quality because they are selected based on well-designed test blue prints, item difficulty, and discrimination.</td>
<td>Items are of low quality but highly comprehensive and for the specific purpose for which measure is needed.</td>
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CONCLUSION
Many alternative tests of ability are specifically designed to provide a more valid measure of intellectual functioning for cases in which Standardized tests may be biased or inappropriate. Most of the Standardized tests in education are based on a student's capability to recall what they have learned in their classrooms using traditional teaching methods. It was observed that these forms of assessments are bias and have limitations in some special population. This is what has led educationists and researchers to come up with alternative tests, in as much as Standardized tests are very important in education, in terms of promotion, placement, certification, employment, admission and many more. Alternative individual ability tests measure ability in infants, young children and adults and some are used primarily to evaluate mentally retarded adults and emphasize on speed of performance retardation or developmental delays are suspected, some were designed for individual with sensory limitation (deaf people) or physical limitation (paralyzed or partially paralyzed people), others were designed to evaluate those with language limitations, certain brain damaged individuals, learning disabilities, because the tests were designed for special populations or purposes, the existence of alternatives is justifiable (Ron, 2014). Although Standardized tests may have superior in psychometric properties but alternatives are much more suitable for special population than the major test would be, an IQ score based on one of the alternatives, with rare exception, cannot be compared directly with a score from one of the Standardized tests because of it purposes, also the alternatives are often useful as a supplement for results obtained with one of the Standardized tests, such as for screening purposes and for follow-up or re-evaluations and many more.

Standardized tests have been created with good intentions to help assure the state/nation that the students are being taught with the correct curriculum, while it is also believe that standardized tests have created more issues than anything, these tests have created stress, bias, competition and fights (Ron, 2014). Furthermore, standardized tests only measure a sample of behaviours or situations in which intelligent behaviour is revealed. For instance, some standardized tests do not measure a person's everyday functioning, social knowledge, mechanical skills, and/or creativity. Along with this, the formats of many standardized tests do not capture the complexity and immediacy of real-life situations. Therefore, standardized tests have been criticized for their limited ability to predict non-test or non-academic intellectual abilities, since their scores can be influenced by diversity of different experiences and performances, they should not only be considered a perfect indicator of a student's intellectual potential but involve other ability tests (Jessie, 2015). Nations, states, schools should include alternatives tests to identify students with other special abilities for drop-out reduction.

SUMMARY
In summary, this paper discussed on alternative individual ability tests, advantages and disadvantages; Standardized tests, advantages and disadvantages; Alternative tests compared with Standardized tests.
REFERENCES