

REVALIDATION OF DRAW-A-PERSON TEST

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Abstract

The study investigated the suitability of the draw-a-person test as a measure of children's intellectual ability. A total of 3000 students from Owerri aged 6-15 years participated in the study. From these 200 participants representing equal number of male and females were drawn through systematic random sampling for analysis. A co-relational design was employed to test the hypothesis. The result of this study showed that there was significant relationship between academic performance and draw a person test of the pupils. The implications of using a draw a person quotient as a test of intelligence among children were discussed.

INTRODUCTION

Measurement of intelligence among children is an important element among psychologists, counselors, educators and other professionals whose work is related to understanding and facilitation of effective methods of child development. It equips the particular professional with current and predictive information related to a child's ability and or disability. This knowledge can be critical in determining likely expectations including whether the individual functions comparatively above, within or below normal range which helps for planning for the needs of the individual child.

However, assessment of intelligence in children can pose many a problem. This may be related to the test characteristics and protocol or the capacity of the child to put up minimum quality of behaviour required for effective evaluation.

In the first instance, children may not sustain long attention span often required to administer intelligence especially objective tests due to its usual multifaceted areas in which the candidate will require to be tested. These include such areas as numerical ability, verbal reasoning and comprehension, vocabulary, logical assembly, perceptual pattern among others. Often times, administration of this class of tests may be more procedural and perhaps more challenging to children testees and requires more individualized attention of the assessor.

In addition, objective tests may be coloured by cultural factors that tend to limit their effectiveness across individuals of diverse backgrounds thus the need for culture-fair, structure and time-friendly test of intelligence especially for children.

Intelligence is commonly defined as the capacity to learn from experience and to adapt to new situations. Alfred Binet (Fernal, Synderman, & Potman, 2006) noted that "intelligence is the capacity to understand direction, to make adaptation, to achieve a goal and to criticize one's own behaviour". According to Detterman, (2007) intelligence relates to the capacity to solve problems, learn and appreciate new material, reason in abstraction and gain from previous experience. He isolated key areas of expressing intelligence to include memory, perception, learning, thinking, reasoning and quality of decision-making.

In practical terms, intelligence implies the adjustment quality of an individual in response to his/her changing (fluid) environment. It is the ability to think and learn including the capacity to gain from experience all of which define the texture of adaptation put up by an individual.

Alfred Binet intelligence scale is believed to be the first scientifically devised test of intelligence that predicted academic performance, (Detterman, 2007: Binet and Simon, 1905). Since then, many other intelligence tests have been developed.

BACKGROUND TO THE PRESENT STUDY

Goodenough (1926) published '**The measurement of intelligence by drawing**' which was the first landmark work on use of drawing to measure the intelligence of children in United States of America aged 4 to 10 years. To facilitate the scoring of the children's drawings, she developed a 51 item indices to assess what was then called Draw-a-man test. Goodenough found the test a good predictor of intelligence having found it positively correlated with Stanford Binet and Wechsler intelligence Test for children (Ebigbo, Okwaraji and Ekwo, 2001). Since then, many authors (Ziler, 1949; Alka and Borowk, 1980; Harriet, 2005; Marnat, 2007; Dale, 2008) have corroborated the findings of Goodenough in many settings. For instance, Harriet (2005) observed draw-a-person test as an indicator of children's cognitive and socio-emotional adaptation and that the draw-a-person test allows the subjects to externalize whatever may be operating beneath their conscious awareness.

Ebigbo and Izuora (1981) suggested that draw-a-person test can be used to understand the intelligence stage of a child, to discriminate the retarded from the normal, to test for school maturity of a child and to control the progress of a child. When conducted for about 2-3 months, it can be used as a projective test, which can be employed to diagnose the psychodynamic state of a child (Alka and Borowk, 1980).

In Nigeria however, the first major effort at domesticating the test through cross validation was by Ebigbo and Izuora (1981) in which they used 2,528 pupils drawn from 5 urban and 2 rural primary and 2 urban nursery schools from Enugu, capital of the then Anambra State. A pioneering effort, the work was however expected to have gathered her sample from a wider geographical spectrum of Nigeria to allow for effective generalization of the findings

To improve on the limitations of the study, Ebigbo, Okwaraji and Ekwo (2001) conducted a nationwide study on norm reference indicators of the draw-a-person test using 3,035 participants aged 4- 14. These were drawn from the three major ethnics groups representing the geographical spread of Nigeria namely Eastern Zone, Western Zone and Northern Zone predominantly occupied by the Igbos, the Yorubas and the Hausas respectively. The study employed 52 item scoring pattern proposed by Ziler (1949) as an improvement on Goodenough's (1926). The study concluded by developing different norms for different age groups of children in Nigeria.

OBJECTIVE OF THE PRESENT STUDY

Based on the findings of the preceding study conducted about 9 years ago; taking into consideration the various significant socio-economic and political changes that have occurred in Nigeria, there is the need to re-evaluate the appropriateness of Draw-a-person test as a valid and reliable instrument for measuring intelligence among Nigerian Children. This will ensure continuing usefulness of the test for assessment of intellectual level of functioning.

In other words, does Draw-a-person test continue to be a relevant test of intelligence among Nigerian children?

To answer the above question, the following hypothesis was tested:

There will be no statistically significant relationship between pupils' academic performance and their draw-a-person quotients. .

METHOD

Participants

A total of 3000 pupils aged 4 to 15 years were cumulatively drawn from 4 primary (2 urban and 2 rural) schools. Madonna Primary and International model Primary Schools represented urban Schools while Umundugba town and Umundugba Central schools were rural Schools. The pupils of these schools fairly represented the geographical spread of Imo State. For purposes of analysis however, only 200 drawings (100 male and 100 female) were randomly selected using the odd numbers of 2 and 7 in every 10 drawings.

Instrument

The instrument was a set of drawing materials made up of a sheet of plain drawing paper, a pencil, and an eraser for each of the 3,000 participants. The drawings made by the pupils were scored using Ziller's 52 indices method. Each draw-a-person score was converted to percentage known as draw-a-person quotient. These scores were then compared with the participants' preceding term's result which was provided by the class teacher in each case.

Procedure

The procedure involved adequate establishment of rapport with the pupils which involved detailed personal introduction and casual jokes in order to reduce test related anxiety. The researcher wrote a format on the black board and asked the participants to fill in the format on the paper provided. The format include; name, school, class, age and gender of each participant. With the help of the class teacher, each of the participants was monitored to ensure that the format was properly filled. After which, the participants were asked to draw-a-person of their choice. The same duration for the drawing was given to every participant, which ranged between 10-15 minutes (i.e.) maximum of 15 minutes and minimum of 10 minutes.

DESIGN/STATISTICS:

Being a variable-relationship-based study, the design was a correlation experimental design for which Pearson correlation analysis was performed.

RESULTS

Table 1: Summary of correlation co-efficient of academic performance and draw-a-person quotient of the study participants.

		Academic Performance	DAPQ
Academic Performance	Pearson correlation	1.00	.354**
	Sig. (2 tailed)		.000
	N	200	200
DAPQ	Pearson correlation	.354**	1.00
	Sig. (2 tailed)	.000	
	N	200	200

**Correlation was significant at .01 level (2 tailed)

From the table 1 above, the calculated value for pupils' academic performance was 0.354 while the table value was .000 at $P \leq .01$ level of significance. The null hypothesis was therefore rejected.

The result showed that there was a statistically significant relationship between the academic performance and draw-a-person quotient of the pupils.

DISCUSSION

The result from the study showed a positive co-relationship between draw-a-person-test and academic performance of primary school pupils which implies that performance on the later predicted intelligence as measured by academic performance of the participants. This means that both academic performance and draw a person test can be used to assess children's level of intelligence. This finding agrees with Goodenough (1926), Ebigo and Izuora, (1981) who noted the capacity of Draw- a-person Test in measuring intelligence among children. It further validates the test as a reliable measure of intelligence of children aged 4 to 15 in Nigeria.

Draw a person test is easy, fast and simple both in administration and scoring, therefore very important quick screening instrument in the hands of psychologists and other trained users of psychological tests. This is very important in the context of the need to distinguish and adequately place children based on their intelligence levels. For example, learning will be enhanced if pupils are grouped according to their intellectual level of functioning in such a way that people of high intelligence, whose speed and depth of understanding concepts definitely differ from other groups, are thought separately from those who are not well gifted. Parents and teachers need to be aware of children's intellectual ability because it enhances planning for their upbringing as well as points to areas of needed support in cases where intellectual performance is below standard expectation since a child's intellectual ability manifests through his/her performance.

Many psychologists believe that apart from hereditary dispositions, a child's draw-a-person-test could reflect the result of the child's emotional climate at home and the quality of interaction that goes on around the child's physical and psychological environments as these are critical factors that predict or significantly contribute to the intellectual level of functioning of the individual.

Beyond the foregoing, revalidation of the Draw-a-person Test in an increasingly dynamic sociocultural society as Nigeria is important to ensure its continued relevance. This increases clinicians' confidence in the discriminatory ability of the test for the assessment of intelligence. In addition, it reinforces the frequent application of the test thereby mounting necessary experience and competence as well as possibly expanding research in other areas of application of the test.

It is therefore recommended that the use of the test as a reliable and valid instrument for measuring intelligence level of children should continue to be encouraged with confidence by mental health professionals in Nigeria.

In addition, there is also the need for clinicians to keep in view the need to repeatedly revalidate psychological tests from time to time in tandem with changing social, economic and political developments in modern societies as a means of building confidence in the validity and reliability of such tests.

REFERENCES

- Alka, F. O. & Borowsk, (1980). Efficacy of Projective Test for diagnosing Psychodynamic Status of a Child. *Journal of Personality and Social Psychology*, 78,524-536.
- Binet,A. & Simon, D. (1905). *Standardization of Intelligence Test in a Sample of British Children*. London: Hogarth.
- Dale, N. E. (2008). Measurement of Draw- A- Person- Test on Intellectual Maturity. *Journal of Psychology*, 428,204-224.
- Detterman, D.K. (2007) *Intelligence in Redmond, W. A.(ed) Microsoft Microsoft Corporation Student 2008(DVD)*.
- Ebigbo, P. & Izuora, G. I. (1981). *Draw-A-Person-Test Standardization, Validation and Guidelines for Use in Nigeria*. Enugu: Chuka Press.
- Ebigbo, P. & Okwaraji, O. P. (2001). "Prevalence of Mental Retardation, and Mental Deficiency in Nigeria School". *Nigeria Journal of Clinical Psychology*.
- Fernal,E. O., Synderman, M. N. &Potman,P. c. (2006). Survey on Intelligence and Aptitude Testing. *American Psychologist*, 43 (4),138-145.
- Hariet, D. B. (2005). *Assessment of Children Drawing, a Measure of Ma tu rity. A Revision and Extension of Go od Enough*. New York: Harcourt, Brace & World; Inc.
- Mamat (2007). Understanding the Nature of General Factor Intelligence in Children. *Psychological Review*, 109,116-136.
- Naglien, (1992). Non- Verbal Intelligence and Emotional Disorder in a Sample of School Children. *Journal of Educational Psychology*, 70 (4) 316-319.
- Sax, I. B. (1974). Recognition Memory for Syntactic and Semantic Aspects of Connected Stimulus. *Perception of Stimulus Response*, 3,438-443.
- Ziler, H. (1949). In Ebigbo, P. O. Okwaraji, F. & Ekwo, J. C. (2001) A study of norm reference indicators of Draw- A- Preson test in Nigeria. *Journal of research in special education*. Vol. 4. No 2b. Pages 20 -28.