THE PREDICTIVE VALIDITY OF MOCK EXAMINATION FOR SSCE MATHEMATICS

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Abstract

The concept of validity in educational and psychological measures are of different kinds as content validity, construct validity and predictive validity. This study investigated (lie predictive validity of mock examination for SSCE Mathematics examination for 2000 to 2004_years. 250 students were involved for the study. The instrument for the study was the WAEC (SSCE) multiple choice question papers and the students (SSS III) mock examination results from 2000-2004 academic years. The Pearson *product moment correlation* coefficient formula was used to analyse the data obtained. The result of the study show a low correlation between the mock examination and SSCE Mathematics test. The computed correlational coefficient falls between 0.13. It is therefore inferred that the mock examination results are not good predictor of SSCE Mathematics examination.

Introduction

The concept of validity is one of the most important characteristics in determining the quality *. of a testing instrument. Sockey (1995) describes it as the most difficult in part because psycho metricians are changing their own views of validity. According to Messick (1988), the newer . view of validity is that it asks whether the interpretation, uses and actions based on assessment results : are appropriate.

The Joint Committee of the American Educational Research Association, American . Psychological Association and National Council on Measurement in Education add that "validity refers to the appropriateness, meaningfulness and usefulness of the specific inference made from test scores or assessment results'[1] (Joint Committee, 1985), Validity exists only in terms of a particular content, the context for which it was originally developed or for which it is now being applied i.e. an existing Mathematics examination may quite validly assess the performance of students who have studied the traditional Mathematics curriculum, but the skills with which it is concerned may not be those required by a new Mathematics curriculum. If this is so, *then the examination could be regarded as valid for assessing performance on new curriculum, hi other words, an instrument is valid and* reliable only when it is used in the manner for which it was developed and for the purpose for which it was designed for.

Ughamadu ,Onwuegbu and Osunde (1991) opined that a judgment of validity must always be in relation to a specific decision or use such as criterion - related validity, it is used to predict students future performance or to estimate current performance in accordance to some significant variables, that is the criterion. To achieve the measure of validity of test, an index is obtained by correlating two sets of scores from the sample. This is done by comparing one score with another related field, that is outside criteria such as teachers' grades. Karnel and Karnel (1978) stated that the predictive validity of Mathematics attainment can be obtained by correlating the lest results of a particular Mathematics test with the intelligence quotient of the same students. A number of predictive validity studies have been conducted by different evaluators and psychologists among whom are Austin (1972), Enwistle (1974). Majasan and Baker (1974), Ohuche (1974). A more recent one is the predicative validity of the continuous assessment results on the junior secondary school examination in prevocational subject by Osunde (1994). In his study, the correlational coefficient(r) results showed a low correlation. He therefore reported that continuous assessment results have not shown any significant improvement on junior secondary school examination.

Ughamadu et al (199!) published a guideline on interpretation on correlational coefficient (r) as presented in the table below.

Value of r	Interpretation

0.80 to 1.00	Very high
0.60 to 0.80	High
0.40 to 0.60	Medium
0.20 to 0.40	Low Very
0.00 to 0.20	low

In the light of the above interpretation, it could be infer that the range of 0.00 to 0.20 is regarded as very low, 0.20 to 0.40 low, and 0.40 to 0.60 as medium while 0.80 to 1.00 0.60 to 0.80 as very high and high respectively.

Mock-Examination has been a popular concept for senior secondary school students preparing to seat for their senior secondary school certificate Examination (SSSCE). The importance of this examination (mock) has remain unpopular as the determinant of students readiness for their final examination. Hence examination for SSCE mathematics.

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The Problem

Mock examination has remained one of examinations used to determine the level 6f preparedness for senior secondary certificate examination (SSCE) by schools. Despite this, a consistent poor performance of candidates in SSCE mathematics examinations still continue to be recorded. Hence the worry of the researchers on the relationship between the mock examination results and the senior secondary school certificate examination in mathematics. Investigation from schools have shown that students passed mathematics mock-examination and failed the SSCE mathematics test. The question is, how valid and reliable is the content and standard of the mock examination questions for the students'?

Research Question

What is the predictive validity of mock examination for WAEC (SSCE) Mathematics between 2000 ,to 2004?.

Method of Study

The population for the study consist of all the senior secondary schools (SSS 1 1 1) mathematics students in Ethiope West Local Government Area of Delta State who took mock and WAEC Examination for 2000-2004. 250 students were randomly sampled from ten secondary schools of the eighteen in the locality. A total of 25 students each were sampled from a school for the study.

The instrument for this study is past five (5) years WAEC (SSCE) Mathematics multiple choice question papers of 2000-2004 and the students mock examination results. Extracted from school records. The data collected were subjected to Pearson product moment correlation formular. Results are presented in Table I.

Results

Table I

Correlation coefficient for WAEC (SSCE) Mathematics Test and Mathematics Mock Examination Result (N = 50).

Years	X	Y	Sx	Sy	XY	r
1 999)	37.56	37.56 , '	_4 2^8____	41.08	86516	0.13
200 1	41.88	J 7 , 0 0 _ _	44.53	40.44	90846	0.15
f 2002~	37.88	40.80	41.56	42.13	89976	0.15
2003	35.88	39.48	35.88	44.91	91500	0.23
2004	26.08	37.00	32.12	40.44	65628	0.23

The results in Table I show that the correlation coefficient of SSCE Mathematics result and Mathematics mock examination result between 2000 to 2004 ranges between 0.13 and 0.23.

The predictive validity coefficient for 2003 and 2004 was 0.23 each. While that of 2001 and 2002 was 0.15 each and 0.13 validity coefficient was obtained for 2000.

Discussion and Results

The results of the study as presented in Table I above show that the calculated correlation coefficient for the five years (i.e. 2000 to 2004) are relatively low. This can be said to be compared with the table of interpretation of coefficient of correlation of 0.80 to 1.00 as very high, 0.60 to 0.80 as high, 0.40 to 0.60 as medium, 0.20 to 0.40 low and 0.00 to 0.20 as very low, as presented above (Ughamadu et al 1991). The results were obtained by computing concurrent validity correlation coefficient for the SSCE Mathematics result and SSS III Mathematics mock examination result.

Sockey (1995) made the assertion that concurrent validity tries to show the extent to which an individual score on a test is related to another score of the same individual in another test. However, it has been observed that the interpretation of validity coefficient should be done with utmost care for several reasons. In view of this, Okoh (1.986) opined that the size of r should be interpreted in relation to its utility. He further pointed out among other things, that a calculated r between two sets of numbers (scores) does not establish a straightforward association between the two measures. This is because, the obtained correlation could be as a result of the association of both measures to a third or fourth variable not stated.

Therefore, in relation to this observation, the correlation coefficients for the year 2003 and 2004 has the highest value of 0.23 respectively. This is considered as a low correlation coefficient. The year 2003 and 2002 have correlation coefficient of 0.15 each and the correlation coefficient for 2000 is 0.13 which is considered as very low.

Conclusion and Recommendation

This study has attempted to determined the predictive validity of mock examination for SSCE Mathematics examination for 2000 to 2004 years. It was revealed that there was a low degree of relationship between the SSCE Mathematics multiple choice examination result and the SSS III Mathematics mock examination. It is therefore inferred that mock examination results are not good predictor of the SSCE examinations. Towards ensuring a strong relationship, it is recommended that Mathematics teachers should improve on the teaching methods and strategies for teaching the subject in secondary schools at both higher and lower levels. Mathematics students should be motivated and encourage to remove the fear of difficulty often associated with the subject.

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