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Achievement in Common Entrance Examination as a predictor of achievement in Junior Secondary School Business Studies

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Abstract

This study was designed to determine whether or not, the common entrance examination is a true predictor of students' performance in the Junior Secondary School Business Studies, using the score of Mathematics and English Language. It was discovered that while each of Mathematics and English Language had low positive predictive validity indices of 0.17 and 0.19 on the performance in Junior Secondary School Business Studies, the combined Common Entrance Examination (i.e. Mathematics and English Language scores) predictive value at 0.41 was, however, fairly good as it is about the normal standard average of success in Nigerian examinations. Recommendations are then made that the quality of teacher, of instructional materials and instruction itself be improved upon. It is also suggested that the quality of the textbooks being used in the three subjects at the secondary school level be analysed in order to establish the degree of that quality.

Introduction

It is common knowledge that whoever must transit from primary school in Nigeria, to secondary school must have passed the common entrance examination. This is in spite of the policy statement enunciated in both 1981 and 1998 National Policy on Education, which envisaged an initial 70% transition and ultimately 100% transition. Although, there was no target date given in the policy statement, it should nevertheless be expected that education policy makers would work towards these envisaged transition rates. But it is also a well-known fact that the major components of Common Entrance Examination (CEE) are English Language and Mathematics. Thus if the achievement in Common Entrance Examination (CEE) predicts achievement in Business Studies, then we can conveniently conclude that achievement in Mathematics and English does predict or determine the level of achievement in

Junior Secondary School (JSS) Business Studies. It will thus be a requirement that a prospective student of Advanced Business Studies be well groomed in both English Language and Mathematics for a better grasp of the subject matter of Business Studies. There have been several studies in the area of predictive or correlational investigation over the years.

Umoru-Onuka (1990) and Abdulahi (1983) both posit that the essence of a predictive study is to examine the predictive validity of the measurement by the predictor (variable) instrument. Gough and Lanning (1986) observe that the purpose of predictive investigation is to forecast. This is done by verifying the degree of validity (accountability) of the measurement undertaken by the use of the predictor instrument. Elemore and Vasu (1986) state that it is to determine performance or the relationship between performance and certain factors, which have been identified for the purpose. Thus this study is aimed at evaluating the actual value of or ascertaining the degree to which performance at the entrance examination predicts the student's performance in Junior Secondary School Business Studies.

Review of Literature

Studies On Predictive Validity

Some studies have been undertaken by various persons in the area of predictive validity. Troutran (1978) studied the cognitive predictors of final grades in finite Mathematics using Intelligent Quotient (IQ), high school ranks, College Board Scholastic Aptitude Test – Mathematics (SAT – M) scores and high school mathematics grades as predictors of final grades in mathematics. He found that using a stepwise multiple linear regression to predict the value, each variable indicates that all combinations of the variables were significant at 0.01 level. He also found that SAT– M was the best predictor, followed by high school rank, high school Maths grades and IQ. The full model had a correlation of 0.61. Hendel and Doyle Jr. (1978) examined the predictive validity of Admission Tests for Graduate Study in Business (ATGSB) and alternative predictors for English and Non-English-speaking students in Masters Degree in Business Administration Programme. He made use of seven-criterion variables. Results indicate that seven of the seventy-seven bivariate correlations were significantly different from zero for English speaking students in contrast to 24 statistically significant correlation for the Non-English speaking students. They used both (bivariate) product moment correlations and multiple regression. Brooks and Hartz (1978) carried out a study of predictive validity of Branding Test. The result supported the premise that passing/failing certain key blocks predicted passing/ failing other easier or harder blocks in the Branding hierarchy.

Baldauf, Jr. (1978) also examined the relationship between High School English grade point average (GPA) and Michigan Test of English Language Proficiency (MTELP) test results for 154 English Second Language students from 5 high schools

in America. Results indicate that MTELP test is a valid predictor of English Language Achievement for ESL high school graduates. Ex-post-facto (available records) was used for the study. Kuder-Richardson - 21 and Pearson Product Moment Correlation were used to analyse the data.

Ogunlade (1978) investigated the predictive validity of the Raven Progressive Matrices (RPM) with some Nigerian children. He discovered that it possesses low predictive validity in predicting school achievement. He used multiple regression analysis. McDonald and Gawkoski (1979), inquired into the predictive validity of the verbal and Maths portions of the College Board Scholastic Aptitude Test (SAT-V and SAT-M) on high school grade point average (HSGPA) were shown to have moderate predictive validity of the entire grade points. The study reveals that only SAT-M for women had fairly high predictive validity against the low predictive value for man. Herbert and Holmes (1979) investigated the predictive validity of Graduate Record Examinations (GRE) Aptitude Test scores as predictor of Graduate Grade Point (GGPA), and found that the predictive validity was fairly high.

Dole and Baggaley (1979); Omizo and Michael (1979); Nagle (1979); Browne and Rankin (1986); Gough and Lanning (1986) and Gussett (1980) using various statistical analyses all conclude that some of the tests whose predictive validity they set to find out possessed high level predictive value while others had low level predictive value and some even had negative value. Also, Umoru-Onuka (1990) found that common entrance examination scores were, when taken in totality, a good predictor of performance in JS II Mathematics and English Language.

Accountability

Predictive study in a sense tells of the accountability of the education system, at least in some respects. Therefore, it is imperative to define accountability in the context of its usage in education. Babarinde (1992) define it as "answerability" or "explicability" or responsibility". Umoru-Onuka (1996; 2001) views accountability as the responsibility for a public trust. In other words those to whom a public service like education has been committed must ensure that the desired result is accomplished. It is a system or programme that puts people on their toes and makes them up and doing, knowing fully well that the public would hold them accountable.

All reviewed studies are agreed that accountability extends beyond evaluation. It is thus a system of checks and balances. In effect, this implies that the system should be in a position to effect societally defined changes in the educand's behaviours. One way of measuring educational accountability is the measurement of performances of the students in school examinations. Hence, predictive validity of an examination will show whether it is accountable or not.

Validity

The focus of the study is the validity of using performance at common entrance examination to predict achievement at JSS Business Studies. Hence, one needs to define the concept briefly. The concept of validity measures the degree or extent to which a test or an instrument fulfills the purpose for which it (the instrument) was

meant (or constructed or adopted/adapted). According to Umoru-Onuka (1990), validity of any instrument is measured by the analysis of its content or by the relationship between the test scores and the criterion variable (criterion reference). The result of such analysis tells the level of validity of the instrument, which in turn leads us to pass judgment on its level of accountability.

Learning Outcomes

Achievement is a component of the student's learning outcome, hence the need to describe the concept in a nutshell.

Umoru-Onuka (1990) reports that define a learning objective as the description of the behavior expected of a learner after a period of instruction. They point out further that, learning is a relatively permanent change in the behavior of the learner in a particular direction as a result of practice or experience. Umoru-Onuka (2000/2001) define learning outcome as the improvement exhibited in students' performances in a particular discipline/subject as a result of having undertaken a course of study. Learning outcome, therefore, is an instrument that measures the outcome of the instructional efforts of the instructor and the entire system. This is in turn evaluated by the use of examinations and practical exercises.

Statement of the Problem

This investigation is designed to evaluate the level of prediction of entrance examination performance as the instrument of admission. In other words, the study investigates the predictive validity of the performance in the common entrance examination as the yardstick for transition from primary school to Junior Secondary by the students. It investigates the relationship between performance in the Common Entrance Examination (CEE) and performance of the student in JSS Business Studies.

Hypotheses

Ho₁: There is no relationship between the performance in the common entrance examination and performance in JSS Business Studies.

Ho₂: There is no relationship between the performance in CEE English Language and performance in JSS Business Studies.

Ho₃: There is no relationship between the performance of the student at the CEE Mathematics and performance in JSS Business studies.

Significance of the Study

The study has added to the area of knowledge in predictive studies. It reveals the level of the usefulness of entrance examination score as predictor of the student achievement in Junior Secondary School Business Studies. Entrance performance in the entrance examination is the instrument of admission of prospective students transiting from the primary school into Junior Secondary School. This study provides a basis for further study in the area of JSS Business studies.

The Scope of The Study

This investigation was primarily designed to examine the extent of the predictive validity of the students' performance in the common entrance examination as the major predictor of the prospective performance of the students in the class work in Junior Secondary School II Business Studies. Its scope covers Kogi Central Senatorial District which is made up of the following:

- i. Adavi LGA.
- ii. Ajaokuta LGA.
- iii. Okehi LGA.
- iv. Okene LGA.
- v. Ogori – Mangongo LGA

Research Design and Methodology

This investigation is a correlational study. It is aimed at finding whether or not a relationship exists between the predictor and criterion variables. It determines the level of prediction of the criterion variable attributable to each of the predictor variables and to both taken together.

The design for the study is the ex-post facto correlational research design as none of the variables in the study was manipulated as their occurrence had already taken place.

Population, Sampling and Sample

The universe for the study was all Junior Secondary Business students in Kogi Central Senatorial District. Defined or target population was all such students in the 10 randomly selected secondary schools in the area. The classes used in the inquiry were the JSS II classes in the selected schools. The arm used from each of the schools was randomly selected. The number of subjects from each school was determined by the number of students in the arm selected in the different schools of the study. JSS II was chosen because it is the mid point of the Junior Secondary School programme. The sample was finally made up of 432 from the ten schools at an average of 43 subjects per school.

Instruments and Source of Data

1. Scores in Entrance Examination Mathematics.
2. 1999 Scores in Entrance Examination English Language.
3. Score in CEE (Total Scores in CEE)
4. Score in 2nd Term Examination in Business Studies (2001/2002).

The study considered the students' scores in Mathematics and English Language at the entrance examinations with the assistance of the various school principals. The students' scores in Business studies at the end of the second term examinations were obtained from the respective class teachers.

Data Analysis

The data were analysed by computing the regression co-efficient.

Findings and Discussion

The following tables show the summary results of the various analyses for this investigation.

Table 1: Regression coefficient for Hypothesis 1 (H_{01})

	Constant	CEE	Degree of Freedom
Correlation Coefficient	27.36	0.41	
t- values	[4.75]	[5.41]	392

Table 1 shows the relationship between achievement in CEE and achievement in JSS Business Studies.

Table 2: Regression coefficient for Hypotheses (H_{02} and H_{03}):

	Constant	Mathematics	English	Degree of Freedom
Coefficient	18.36	0.17	0.19	
t - values	[4.65]	[3.53]	[3.94]	392

Table 2 shows the relationship between achievement in CEE Mathematics and achievement in JSS Business Studies and the relationship between achievement in CEE English Language and achievement in JSS Business Studies respectively.

From table 1 it can be inferred that there is a positive relationship between achievement in CEE and achievement in JSS Business Studies. The correlation is not only positive but also direct. The implication of this inference is that performance in CEE determines achievement in JSS Business Studies. The degree of such relationship is shown to be 0.41 or 41%.

Furthermore, it means a candidate who scored an average of 90% in the common entrance examination would score $0.41(90) + 27.36 = 36.90 + 27.36 = 64.26$ in JS Business Studies. Thus the predictive value of CEE score is 41%. There is, therefore, a predictive validity in CEE as an instrument, though low. This finding confirms the finding of Ogunlade (1978) that the predictive validity of the Raven Progressive Matrices (RPM) was low with the Nigerian Child. It, however, contradicts the findings of Troutan (1978) and Omizo and Michael (1978) who found high predictive validity in the respective predictive studies they carried out. This finding, however, is termed low because it is below 0.50 but on the whole and by normal examination standard; it is an average predictive validity.

From table 2, one can infer that there is a positive and direct relationship or correlation between achievement in the English Language of the CEE and achievement in JSS Business Studies. This, however, is a very low predictive validity. It is just 0.19 or 19%. When compared with the result of hypothesis

1, it is indeed very low. This definitely confirms the finding of Ogunlade (1978) of low correlation between RPM and the performance of the Nigerian child and partially contradicts the findings of Troutran (1978) and Omizo and Michael (1978) that the contrary, i.e. high predictive validity, was the outcome of their respective studies. This portends that there is the need to improve both the teaching and learning of English Language.

Table 2 also shows that a low positive correlation exists between achievement in Mathematics and achievement in JSS Business Studies. The degree to which the achievement in Mathematics component of the CEE predicts achievement in JSS Business Studies is just 0.17 or 17%. As in the English Language even though it is a positive relationship, it is infinitesimal yet significant, in that it still has a measure of predictive validity. This finding also confirms that of Ogunlade (1978) as pointed out earlier and equally partially contradicts the findings of Troutran (1978) and Omizo and Michael (1978). There is the need therefore for improvement in the teaching and learning of Mathematics in the Kogi State School System.

Conclusion and Recommendations

This investigation uncovers a fair relationship (correlation) between performance at the primary school level as indicated by performance at the common entrance examinations and the performance at the Junior Secondary School Business Studies. In other words the predictive validity index is fair at 0.41 but not as good as one expects. One can also conclude that there is synergy in the combined effect of achievement in Mathematics and English than the effect of each of the two components of Common entrance examination on the achievement in JSS Business Studies.

Teaching Methods should be reviewed and be made more practical so that the students would understand what they are being taught. This entails improvement in the methods of instruction and the supportive materials of teaching. Quality of teachers at these levels of education should be investigated so as to discover the areas where they need improvement.

The quality of the textbooks being used in instruction at the two stages of education should also be examined for either improvement or replacement. Also recommended here for inquiry is that other factors (such as socio economic status) responsible for achievement should be carried out to know whether or not such other factors as social economic status, student disposition to study, environmental factors etc. are responsible for this dismal level of correlation between success in the entrance examination and success in the JSS Business Studies.

The teaching of English Language and Mathematics, which produced low correlations, should be thoroughly examined so as to ameliorate this dismal performance in the subjects. Only properly qualified teachers in the respective subjects should be allowed to teach them at any level of the educational process. Graduate teachers who have no previous training in education should be so trained to make them more effective and efficient teachers. The quality of the instrument (CEE) needs to be improved to make it more responsive and effective.

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