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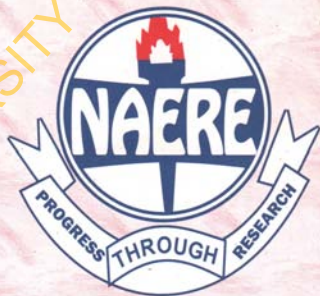# EDUCATIONAL RESEARCH
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PREDICTIVE VALIDITY OF POST-UME SCORES OF FIRST YEAR STUDENTS IN THE NIGERIAN UNIVERSITIES BETWEEN 2006-2009

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Abstract

The Joint Admission and Matriculation Board (JAMB) have been facing a lot of criticism due to the poor performance of poor quality of Nigerian university undergraduates. Candidates for admissions into Nigerian universities are made to undergo Post-UME screening before they are admitted into the Nigerian universities. This study was designed to investigate the Predictive Validity of Post-University Matriculation Examination of First Year Students of Nigerian Universities from 2006-2009. The samples used were 5,846 1students from two Nigerian Universities who were admitted between 2006 and 2009 into Eight Faculties. Data were collected from the records and admissions office of the two universities used for the study. The data were subjected to analysis using Pearson's Product Moment Correlation and multiple regression analysis. The result showed that CGPA and Post-UME scores of students is positively significant to the undergraduate academic achievement Therefore, Post-UME is relevant and adequate to serve as criterion validity for performance in the university. It was recommended that the Joint Admission and Matriculation Board (JAMB) should take a deeper look into her examinations in terms of focus and emphasis vis-à-vis the actual skills and competences the universities emphasize.

Introduction

Achievement at any level of education is crowned with certification for those who successfully complete the course of study with good academic records. Thus, at the end of secondary education, students are expected to sit for public and private examinations such as the West African Examination Council (WAEC), National Examinations Council (NECO), and the National Business and Technical Examinations Board (NABTEB). It is a known fact that Education is universally

recognized as one of the instruments for social, political, scientific and technological development; this is the reason why no society can afford to toy with the education of its citizenry as this will result in a snail speed development (Azikiwe, 2000). Possession of minimum of five credit passes including English Language and Mathematics for the Science and Social Sciences students or English Language for the Arts students in any of these public examinations is a pre-requisite for sitting for the University Matriculation Examination now called Unified Tertiary Matriculation Examination (UTME) conducted by the Joint Admissions and Matriculation Board (JAMB).

Although, there are basically two modes of entry into Nigerian Universities, that is, Universities Matriculation Examination (UME) and Direct Entry (DE), a third mode exists as a way of running away from the UME conducted by JAMB. Some universities call the third mode Pre-Degree Programme. There is a conception that the University Matriculation Examination (UME) candidates perform better than the Direct Entry and the Pre-Degree candidates in their university examination. Yet others believe that Direct Entry candidates are superior to both the Pre-Degree and UME candidates. The people who hold this view argued that the Pre-Degree and Direct Entry candidates cannot pass the UME conducted by JAMB; hence, they opted for the Pre-Degree programme or institutions that enable them to get University Admission (Edhereveno, 2009). However, JAMB has been facing a lot of criticisms due to the poor performance or poor quality of Nigerian University undergraduates. Several researchers and professionals in education (e.g. lecturers and policy makers, educationists, students, parents, JAMB and government) have argued that the glorious days of high academic performance and enviable achievement among Nigerian undergraduates have reached a vanishing point and have called for an education summit to rectify the situation (Ige, 1997; Nwokocha, 1997). It is disturbing to note that graduates from Nigerian universities who happen to go for further studies abroad are often made to face further examinations before being admitted (Obioma, 1997). Also, in Nigeria, candidates for admissions are made to undergo Post-UME screening before they are admitted into the universities.

Yoloye (1973) in a study carried out to determine the extent to which the Long-Thorndike Intelligence Tests predict success in West African School Certificate (WASC) recommends that in order to get a true picture of analysis, the sign of the correlations should be reversed in order to give the true picture since in West African School Certificate Examination (WASCE), the lower the score, the better the performance; whereas, the reverse is true of test where raw scores are used. A negative correlation from actual calculations therefore represents a positive relationship. Also, in a study by Laryka and Bowers (1973) to determine the extent to which the Tedro Selection Tests into Nigerian Nursing Schools predict the results of State Final Examination scores and to identify the subject of the eight tests for predicting the final examination results found that all the results show low correlation. It was found that

higher validity would have been obtained in the study if the first year achievement grade had been used as criterion. This is because the early performance in educational programme is more predictable than later performance.

Nwana (1981), Yoloye (1982), Abdullahi (1983) and Ojo (1983) reported that although Joint Matriculation Examination (JME) generally have low predictive validity, significant and positive correlations were observed for some faculties such as Medicine, Pure Sciences and Engineering. What can be inferred from these aforementioned studies is that selection criteria currently in use in Nigerian universities are poor predictors of success in future academic attainment. Okwilagwe (1999) was of the view that the selection criteria being used in the country have low predictive validity; she pointed out that for the purpose of selection for university education, it is pertinent to know what the policy statements are.

Obioma and Salau (2007) reported that though, public examinations were statistically significant, but were not of much practical importance in predicting the achievement of university students. However, it was established in their study that the first year university examination results accounted for about 48.2% of the final year examination results. According to them, "this is an indication that formative evaluation plays a significant role in predicting the achievement of university undergraduates. They finally concluded that given the limited ability of JAMB and other public examinations to predict university outcomes, it is essential that admissions criteria exhibit "content" and "face validity" as well as "predictive validity", that is, that the criteria bear a direct and transparent relationship to university work as has been previously advocated elsewhere in the literature, (see JAMB, 2002). In so far, as university matriculation will continue to be used as a criteria for admission, a strong case is made here for curriculum based, Aptitude-type Tests since those test not only have predictive value but also measure knowledge and skills that are unquestionably important in university work.

In the work of Ojerinde and Kolo (2009) on the prediction of first year university education performance from entry academic performance found out that there is a relationship between UME scores and CGPA of University students. It was also found out that the degree of relationship between SSCE over all performances in the first year university education though significant is low. The low degree of relationship between SSCE and CGPA can be explained by similar factors with that of UME scores and CGPA. From their findings, combining SSCE and UME variables predicted performance in CGPA much more than UME or SSCE separately. The reason for the greater prediction might be that both UME and SSCE are achievement tests in orientation. It was concluded that although relationship between UME and CGPA and SSCE and CGPA were low, but significant, when UME and SSCE were combined there was greater prediction.

Edhereveno (2009) in his study Mode of Entry and Degree Performance of Delta State University Undergraduates concluded that the performance of students in Delta State University has no relationship with their mode of entry. It was found out that only 12% of the Pre-degree mode of entry are in the range of probation and pass degree while 64% of this mode is within 3rd and 2^2 range of degree. 18% of them are within the 2^1 level while 6% of them are in the first class range of degree.

For the UME mode of entry, 20% of the subgroup fall within the range of probation and pass degree while 72% of them are within the 3rd and 2^2 range of degree. 4% of them are within the 2^1 while 4% of them are in the 1st class range of degree. In the Direct entry mode 8% of the group is under probation and degree while 78% of them are within the 3rd class and 2^2 class degree. 8% of the subgroup and under 2^1 while 6% of them are within the range of 1st class degree; based on his findings, it was recommended that Pre-Degree, UME and Direct Entry should continue to be used as modes of admission into universities since performance is not significantly related to the mode of entry.

Abodunrin (2000) found out that there is significant relationship between UME scores and their performance in the University. He also found out that those who have high scores in UME performed better than those who have low scores. This according to him, definitely confirmed UME scores is a good predictor of students' performance. Therefore, the purpose of this study is to examine the predictive validity of post-UME scores of first year students in the Nigerian Universities.

Research Questions

(i)   Is there any significant relationship between student's scores in Post-UME and their first year performance?

(Ii) To what extent does performance in Post-UME predict academic achievement in university degree examinations?

Method

Correlation and Descriptive designs were employed to investigate the relationship that exists between Post-UME Scores (predictive variables) and First Year University Students' Academic Achievement (criterion variables). The latter design was used because both the cause and the effect had already occurred while the data in the study were as they were collected from the source without any manipulation. The target population for this study consisted of all First Year Students of the Nigerian Universities between 2006 and 2009. A convenience sampling procedure was used to select two universities for this study, out of which eight faculties were randomly selected from each university. From the list of each faculty, 731 data were randomly selected from the departments in each faculty. A total number of 5846 were found

usable for analysis.

Post-UME scores of the selected students who were admitted to study in the following faculties; Education, College of Medicine, Technology, Social Sciences, Arts, Law, Sciences and Agriculture; and their Cumulative Grade Points Average in their first year were collected for the study. Relevant data were collected from the sampled Universities Admissions Office and Records Office which took the researchers about eight weeks to accomplish. The students considered for this research were admitted in the 2007/2008 session and the 2008/2009 session. The scores generated were then subjected to correlation so as to determine the relationship between Post-UME scores of the students and the first year CGPA. Multiple regression analysis was also performed to test the adequacy of the postulated models. The level of significance was set at 0.05 for all statistical tests.

Results

The results, based on the hypotheses presented below

Table 1: Correlation between CGPA Scores and Post-UME Scores.

Variables	N	X	SD	r	P
CGPA	5846	6.102	2.4655	.928	.000
Post-UME	5846	102.26	15.052		

* Correlation is significant at the 0.05 level (2 tailed).

Table 1 summarizes the zero-order Pearson correlations between CGPA and Post-UME. The results show that significant correlations were obtained between CGPA and Post-UME scores ($r = .928$, $p < 0.05$); the mean scores for CGPA ($x = 6.10$) and Post-UME ($x = 102.26$) while the standard deviations were 2.46 and 15.05 respectively.

Table 2: Regression Summary of Relationship between Post-UME and Undergraduate Academic Achievement.

R = .092
R Square = .008
Adjusted Square = 0.008

ANOVA

Model	Sum of Squares	df	Mean Square	F-ratio	Sig of P
Regression	73.266	1	73.266	49.554	.000
Residual	8638.853	5843	1.478		
Total	8712.118	5844			

It was found in Table 2 that the linear combination of UME and Post-UME had significant effect on Academic Achievement of students ($F_{(1, 5843)}$ = 49.554, P < 0.05). The independent variables also yielded a coefficient of multiple regression (R) of .092, and multiple regression (R^2) adjusted of .008. This means that 0.8% of the total variance in academic achievement of students could be explained by the combination of UME and Post-UME.

Table 3: Relative contribution of Post-UME to academic achievement of students

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	SEB			
(Constant)	1.925	.112		17.199	000
Post-UME	.016	.002	.0928	7.039	.000

Taking UME as moderating variable, academic achievement as endogenous variable and Post-UME as exogenous variable (Table 3): Post-UME turned out to be predictor of academic achievement (β = .002, t = 7.039, P < .05).

Discussion

Results of the present study revealed that there exists some relationship between Post-UME scores of students and their first year performance in the university. This finding is consistent with the earlier research findings of Yoloye (1982); Abdullahi (1983); Ojo (1983) and Abodunrin (2000) who found a significant relationship between and some faculties like Medicine, Pure Sciences or Mathematically related faculties.

Ojerinde and Kolo (2009) also found a significant relationship between UME scores and CGPA. This result is easily explainable bearing in mind that the incidence of restricted range due to the limitations of the process of admissions may explain the very low value of the multiple correlations and that the skills and competences tested in the UME and Post-UME may not be congruent with the skills and competences emphasized in the first year of university education. One could say that the current method of selection to University is in order. Post-UME is a significant predictor of undergraduate academic achievement. This lends a good credence to several studies which have shown positive correlations between Post-UME and first year academic achievement (e.g. Obioma & Salau, 2007; Ojerinde & Kolo, 2009) found the combination of SSCE and UME variables as predictors of performance in CGPA. The reason for this might be that both UME and SSCE are achievement tests in orientation; and the limit of prediction based solely on students performance in UME scores at the point of admission underscoring the need for admission officers to exercise great

caution in using these examination scores to predict how individual applicants may perform in the university.

Implications of the findings for educational practice

This study has implications for the work of the work of the Psychometricians, teachers, and educational psychologist, Joint Admission Matriculation Board as well as the Universities. They need to develop a greater awareness and understanding of the various interaction involving variables that predict the academic achievement of students. The findings of this study would serve as a pointer for the Joint Admissions and Matriculation Board (JAMB). JAMB should improve the standard of the conduct of its examination to convince the stakeholders especially the universities that results obtained by the candidates in their examinations is a true picture of the academic ability of such candidate, thus, predict their performance in their course of choice in the university.

Government should build in evaluation into the process of the Board to serve as a feedback as to whether the objectives of the Board are being met so that government can pass adequate judgment on the Board, against any criticism that may arise from the public.

Based on the findings from this study, it is recommended that teachers, JAMB and Universities as stakeholders should take a deeper look into how examinations is conducted in terms of focus and emphasis vis-à-vis the actual skills and competences the universities do emphasize. By so doing, the academic performance of the students could be improved barring all other teaching-learning obstacles. Hence, the findings of this study provides an empirical basis for the Post-UME result as a predictor of performance in Nigerian universities and it also serves as a pointer to all educational stakeholders as whether to continue using the present system of admission into Nigerian universities.

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