

Relationship between Cognitive Entry Characteristics and the Academic Performance of University Undergraduates in South West, Nigeria

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Abstract

This study examined the relationship between cognitive entry characteristics, (SSCE, UME, ND and NCE) and academic performance (CGPA) of university undergraduates in South West, Nigeria. It employed ex-post facto research design. The sample, 600 university undergraduates, were selected through stratified sampling technique from six government owned universities from South West, Nigeria. One hundred students comprising 50 male and 50 female undergraduates were selected from each of the selected universities using stratified sampling technique. An Inventory, "entry characteristics and academic performance proforma", was used to collect data from records for the study. Data collected for the study were analyzed using mean, standard deviation and correlational analysis. The results showed that there is a positive and significant relationship between the criterion variable (CGPA) and cognitive entry characteristics (SSCE, ND and NCE). There is a low correlation coefficient (0.1751) between CGPA and University Matriculation Examination (UME) results. There was a moderate correlation coefficient (0.6740) between CGPA and NCE results, and also between CGPA and ND results. Based on the findings of the study, there is need to make NCE, ND and their equivalents the basic qualification for admission of candidates into undergraduate programmes in Nigerian universities to complement the admission of candidates with good and genuine SSCE and UME results in order to improve the quality of academic performance of the university undergraduates in Nigeria.

Key word: Relationship, Cognitive Entry Characteristics, performance, undergraduates, university, Academic.

1. Introduction

It is the wish of almost all parents in South West Nigeria that their children receive university education. In preparation for this, children are sent to receive primary school education. The completion of primary school education leads the child to secondary school to receive secondary school education. Secondary school education serves dual purpose: it is meant in part to prepare someone for appointment as clerical officer in offices and also serves as preparatory foundational ground for those who want to receive tertiary education. A successful completion of the academic pursuit at the secondary school level with good grades in a number of subject (specifically five credits including English Language) coupled with pass mark in the University Matriculation Examination (UME) now refers to as Unified Tertiary Matriculation Examination (UTME) conducted by Joint Admission Matriculation Board normally qualify the candidates for admission into any of the tertiary institutions (polytechnics, College of Education or University) in Nigeria. Those that choose to go to polytechnics or College of Education can later be admitted into the university through direct entry qualifications. The grades and scores obtained by the candidates that are given admission to the tertiary institutions are supposed to be a measure of the replica or closeness to the cognitive (academic) behaviour each of the candidate will demonstrate while in the university pursuing the courses of the programme chosen to specialize upon. This may be the expectation of many educationists especially experts in the field of tests and measurement but unfortunately, it does not hundred percent manifest the way it is expected. For instance, Idika (1995) while carrying out a

study on entry qualifications at the College of Education (Technical) claimed that it was believed that students with West Africa Examination Council (WAEC) Technical Certificate results admitted into the College of Education (Technical) will perform better in the Nigeria Certificate in Education (Technical) final examination than students admitted into the same programme with just senior school certificate examination (SSCE) results. According to him, it has been a surprise that there have been cases when students admitted with senior school certificate examination results graduated with credits whereas those admitted with WAEC Technical certificate ended up with ordinary passes.

The effects of examination malpractices on the credibility of UME and SSCE results as revealed by studies of predictive validity for university undergraduates' performance in various universities as reported by researchers such as Obioma & Salau, (2007); Salahdeen & Murtala, (2005) had consistently made the correlation coefficients obtained between the results of UME, SSCE and first and second year examination grades of the university undergraduates to be low. In spite of the yearly recurrent examination malpractices and cancellations of senior school certificate examinations (SSCE) results and UME results in Nigeria, a lot of people are still being admitted into Nigeria universities yearly based on their high performance in SSCE UME and direct entry paper qualifications hoping that the high performance in SSCE, UME and direct entry paper qualifications is enough a true measure of the academic achievement of the candidates' background knowledge of the precious subjects matter now serving as pre-requisite to the proposed course intended to be pursued by the candidate at the university undergraduate level. Although, Alonge (1998) argued that the acquisition of high entry point does not necessarily imply high academic performance past experience may likely influence one's level of performance in future learning task. Gbore (2006) affirmed that general background knowledge in the same subject matter area will facilitate learning of new material in a future similar academic task, but examinations may not always consistently measure present achievement or predict future performance with hundred percent accuracy because performance is not static but changes as interest and attitudes changes with time and as new abilities emerge.

Recent development showed that there are argument against the standard of education in this country. For instance, WAEC and National Examination Council (NECO) as part of the branches of the education system of this nation, have been saddled with the responsibility of examining the achievement made by the students at the cognitive level. There are allegations that the standard of performance of the students in the examinations conducted by these examining bodies on behalf of this nation is fallen. The lamentation of Osuji (2004) buttressed this when he cried out that in spite of the whopping sum of money being sunk into the education sector in this country, the standard of education could not be restored to what it used to be and it is unlikely that it would get anywhere close to what obtained in those days. Oluwatayo (2007) also affirmed the view of Osuyi (2004) by doubting the possibility of ameliorating the present fallen standard of academic performance of the students caused by various factors including examination malpractices and lack of willingness on the part of the students to study and prepare to pass examinations honourably.

There have been a lot of argument on the relationship between SSCE, UME and the academic achievement of university undergraduates. Studies by Obioma and Salau (2007) and Salahdeen and Murtala, (2005) on predictive validity of SSCE and UME in various universities had consistently showed low reliability between SSCE, UME and first and second year examination grades and it appears the level of confidence placed on the results of SSCE and UME and their dependability for the purpose of admission and as measure of future performance continues to raise doubt in the mind of concerned citizens of Nigeria. Other studies such as WAEC (1992) showed that there was a positive and significant relationship between candidates' performance in the SSCE and academic performance in the university undergraduate level. Okwilagwe (2001) did not agree with this because his finding in a study of causal model of undergraduate students' academic achievement revealed that there was a very low correlation coefficient (0.257) between SSCE and university academic performance, however, he reported that SSCE is a potent predictor of university undergraduate academic achievement. By implication, the positive influence of SSCE on undergraduate academic performance (grade point average) seem to show the stability of SSCE in establishing predictive validity overtime. This was buttressed by the findings of Alonge (1986) who in a related study showed that certificate

worth and entrance examination results were not related to academic performance but formative test scores were the most effective measure of academic performance. Agbonifo and Dimowo (1985) also studied the UME scores of some social science students in geography and economics and found that there was a significant relationship between the UME scores and the performance of university undergraduates whereas Okwilagwe (2001) reported that no such association exists between UME and academic performance of university undergraduates, but that there was high relationship between UME and SSCE. Gbore (2006) also showed that UME is not a potent predictor of university academic performance in terms of grade point average. The findings of Dimowo (1985) implied that those students that performed well or scored high marks in UME in the science subjects and in the social science subjects respectively also performed well or scored high marks in the university examinations.

Gbore (2006) also showed that entry qualification was a poor predictor of academic performance and the degree of performance cannot be related to the quality of grades obtained in the entry qualification. In other word, there is low relationship between the grades obtained at the entry point and the university undergraduate academic performance.

Nonetheless, acquisition of high entry point at the UME does not necessarily mean high academic ability or performance in university undergraduate examination. While Pascarella (1985) argued that high school grades and classroom involvement as measures of academic progression were unidirectional with students' academic performance, Oluwatayo (2003) and Adonis (2005) agreed that performance in advance level papers correlated with academic performance. Evans and Farley (1998) using the results of cohort of school leavers in individual subjects across a range of discipline areas, found that there was a relationship between final year secondary school academic performance and the performance of the students in their first year in university.

It is very clear that most researchers have concentrated attention on investigating the relationship between SSCE and academic performance, as well UME, HSC and academic performance of university undergraduates without consideration for the investigation of the relationship among SSCE, UME, National Diploma (ND) results, National Certificate in Education (NCE) results and academic performance of university undergraduate hence, this study is designed to investigate the relationships among the cognitive entry characteristics (SSCE, UME, ND and NCE results) and academic performance of university undergraduates with a view to confirming or annulling the above several claims bearing in mind that human behaviour could be influenced by environmental factors. In addressing the above situation, the following research questions were raised to guide the study.

1. What is the average performance of the students in the SSCE, UME, ND and NCE at the point of entering into the university undergraduate academic programmes?
2. What is the average performance of the students in the university undergraduate examinations?
3. are there any significant relationships among the cognitive entering characteristics (SSCE, UME, ND and NCE) and the academic performance of university undergraduates?

2. Methodology

The study is designed along the line of ex-post-facto research design. The ex-post-facto is not a crucial experimental design but a systematic approach involving the observation of variables as found in their natural phenomena. This type of design was used by Campbell and Stanley (1966) as an attempt to solve the problem of randomization and control of variables in educational research. This design was used since both the effect and the cause have already occurred, hence, the data involved in the study were collected from records without treatment or any manipulation of subject.

The population for the study consisted all the male and female UME and Direct Entry university undergraduates in South West, Nigeria. Six conventional universities, (University of Lagos, Lagos, University of Ibadan, Ibadan, Olabisi Onabanjo University, Ago-Iwoye, , Obafemi Awolowo University, Ile-Ife, Adekunle Ajasin University, Akungba – Akoko and University of Ado-Ekiti, Ado-Ekiti) were purposively selected from the ten federal and state owned conventional universities in South West Nigeria. These 6 universities specialized virtually in Arts, Education, Engineering, Law, Sciences and

Social Sciences. Six hundred (600) university undergraduates were selected from the purposively selected universities to form the sample for the study. One hundred undergraduate students comprising 50 male and 50 female students were selected through stratified sampling technique from each of the selected university for the study. An Inventory titled "entry characteristics and academic performance Proforma" was used to collect data from records for the study.

3. Data Analysis

The data collected for the study were analyzed using mean, standard deviation and correlational analysis

3.1 Results

Question 1: *What is the average performance of students in the SSCE, UME, ND and NCE at the point of entering into the University undergraduate academic programmes?*

In proffering solution to this problem, each candidate's certificate(s) were converted according to their grades points. The scores of each category of students (SSCE /UME candidates, ND and NCE candidates) were computed to obtain the mean and the standard deviation. The results are contained in table 1.

Table 1: Mean and Standard deviation of Academic Performance of the undergraduates before entering university programme

Variable	N	- X	S.D
SCE/UME	200	11.17	2.52
ND	200	12.76	2.93
NCE	200	13.31	3.21
Total	600	12.41	2.89

Table 1 showed the mean and standard deviation of the results of students that entered the universities through UME with senior school certificate examination results as 11.17 and 2.52 respectively. The mean and standard deviation of the results of those that entered the universities through direct entry using National Diploma results were 12.76 and 2.93 respectively while those that entered the universities with the National Certificate in Education (NCE) had a mean of 13.31 and a standard deviation of 3.21. The values of mean for the NCE and ND direct entry candidates appear to indicate a better performance than the SSCE/UME candidates. The overall mean performance is 12.41 while the standard deviation is 2.89.

Question 2: *What is the average performance of the students in the university examination?*

In answering this question, the cumulative grade point average of each group (SSCE/UME, ND and NCE) of the undergraduate students for 400 level examinations were obtained and computed to determine the overall mean and standard deviation of the performance of each of the three group. The result is presented in table 2.

Table 2: Mean and standard deviation of academic performance of undergraduate in university examination

Variable	N	- X	S.D
SSCE/UME	200	2.74	0.59
ND	200	2.93	0.62
NCE	200	3.71	0.68
TOTAL	600	3.13	0.63

From table 2, it was revealed that the mean and standard deviation for SSCE/UME candidates were 2.74 and 0.59 respectively. The mean for the ND and NCE groups were 2.93 and 3.71 respectively while the standard deviation for the ND and NCE were 0.62 and 0.68 respectively. The overall grade point average stood at 3.13. The table also revealed that the three groups virtually had the same standard deviation. By implication, the three groups deviated from the mean score by 0.6 while the NCE group was the only group that had a mean score that is above the overall average score and thus performed well above the ND and UME while the UME group showed the least performance.

Questions 3: Are there any significant relationship among the cognitive entering characteristics and the academic performance of university undergraduates?

Table 3: Intercorrelational matrix of the cognitive entry characteristics and CGPA

Variables	CGPA	SSCE	UME	ND	NCE
CGPA	1.0000				
SSCE	0.4120	1.0000			
UME	0.1751	0.4753	1.0000		
ND	0.5782	0.3884	0.1986	1.0000	
NCE	0.6740	0.3421	0.1961	0.3521	1.0000

(N = 600 P ≤ 0.05 (significant Results))

A cursory look at table 3 showed the correlation coefficient matrix for the five variables. It indicated that there is a positive and significant relationship between the criterion variable (CGPA) and each of SSCE, ND and NCE at 0.05 level of significance. It is also observed from the correlation coefficient matrix that NCE which is the results of one of the groups of students that gained admission into the universities through direct entry correlated more with the criterion variable (CGPA) than any other independent variables in this study. This is closely followed by the ND group results which is another group of students that were admitted into the universities through direct entry while SSCE and UME followed the ND results in that order. However, UME and CGPA indicated a very low correlation coefficient (0.1751). The correlation coefficients observed in the table ranged between 0.1751 and 0.6740. The least correlation coefficient was between CGPA and UME while the highest correlation coefficient was between the criterion variable (CGPA) and NCE.

4. Discussion and Conclusion

The findings of this study clearly showed that positive and significant relationships existed between the entry characteristics (SSCE, ND and NCE) and the academic performance (CGPA) of university undergraduates. However, a very low and positive relationships existed between UME and CGPA, UME and NCE, and UME and ND respectively. The moderate relationship that existed between CGPA and NCE, and also between CGPA and ND is not surprising because the two categories of direct entry students had experienced post-secondary (intermediate) tertiary institutions of learning whereby they had been exposed to semester course system and were aware of the intricacies in semester course system. They have already become experienced, testwise and matured for university education. This study corroborates the reports of Oluwatayo (2003) and Adonis (2005) that performance in advance level papers correlated with academic performance. The low but negligible correlation coefficient observed between the performance of UME candidates and their performance at the university undergraduates' examinations supports the findings of Okwilagwe (2001) that UME scores did not correlate with the academic performance of university undergraduates. It goes to confirm the notion that JAMB is weak and deficient in its function and it also confirmed the assertion of Alonge (1998) that the blind, method of guessing coupled with the various forms of examination malpractices among UME candidates could be deceptive in selecting the best candidates for admission into degree programmes. The observed moderate correlation coefficient between SSCE and academic

performance of university undergraduates is in line with the finding of WAEC (1992) that a positive and significant relationship existed between candidates' performance in the SSCE and academic performance in the university undergraduate level, however, the finding is at variance with the finding of Okwilagwe (2001) who argued that there is a very low correlation coefficient between SSCE and academic performance of university undergraduates.

Based on the findings of this study, there is need to review the admission ratio between the direct entry candidates and the UME candidates to absorb more of NCE, ND and their equivalent certificate holders with relevant credit or merit passes. This would imply making NCE, ND and their equivalents as the basic qualification for admission of candidates into undergraduate programmes in Nigerian universities to complement the admission of candidates with good and genuine SSCE and UME results in order to improve the quality of academic performance of university undergraduates. JAMB needs to make an overhauling of its system or bring an in built device that will restore confidence in the mind of citizens concerning scores generated from its test instruments for the scores to be reliable for the purposes for which they are meant to serve.

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