

UNIFIED TERTIARY MATRICULATION EXAMINATIONS AS PREDICTORS OF FIRST YEAR SCIENCE EDUCATION STUDENTS' ACADEMIC ACHIEVEMENT IN FEDERAL UNIVERSITIES IN NORTH CENTRAL ZONE OF NIGERIA

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ABSTRACT

The paper investigated the relationship between UTME and 100 Level Science Education Students Academic Achievement. Expo-facto and correlation research designs were employed in the study. Two hundred First year Science Education Students, comprising 120 female and 80 male students constituted the sample for the study. Students' Academic Record Inventory (SARI) was used for collection of data from students' file records. Data were analyzed using Statistical Package for Social Sciences (SPSS). Mean and standard deviation were used to answer ...research questions raised for the study while Pearson product moment correlation coefficient was used to test the hypothesis. The findings revealed that UTME scores predicted academic achievement of 100 Level Science Educations Students with regression coefficient of 0.071. It was also revealed a weak negative relationship between the UTME scores and students' GPA with $r(192) = < 0.71, P > 0.05$ at 0.05 level of significance. It was concluded that...The study therefore, recommended among others that UTME examination questions should be restructured by the Joint Matriculations and Admission Board.

Keywords: United Tertiary Matriculation Examinations, Predicators, Academic Achievement.

INTRODUCTION

Education is the driving force for national development and economic growth of any country. It is one of the most important investments a country can make for its citizens. Education enriches people's understanding of themselves and their environment. It enhances the quality of their lives and provides a lot of social benefits for citizens in the society. Education promotes people's productivity, entrepreneurship and creativity. It also plays a vital role in promoting, scientific innovation and technological advancement. The National Policy on education (2014) states that education is an instrument par excellence that witnesses the active participation of governmental, non-governmental agencies, communities and individuals. The goal of education as stated in the National Policy on Education by the Federal Government of Nigeria further emphasizes the benefits that Nigerians will derive from being in consonance with environment and modern globalization. Education is not limited to just knowledge derived from books, but can be obtained through practical experiences outside the classroom.

Science is taught in various forms at different levels of education in Nigeria. For instance, at the senior secondary school level, it is taught as biology, chemistry and physics while it is taught as Basic Science and Technology at the basic level of education. At the tertiary level of education, there are various science courses in different faculties. At the Faculty of Education in each university, Biology Education, Chemistry Education, Physics Education, Mathematics Education and Integrated Science Education constitute Science Education courses among others. The teaching of science exposes learners to the processes, products of science and the scientific method. It equips them with knowledge, competencies and the desirable attitudes and requisite life-long skills to cope with life challenges (Chollom, 2016). The vital role of science to national development cannot be neglected because of the link between science and national development. Science and technology

education are the tools needed to meet developmental goals (Akase, Mwekaran, Awuhe & Tombuwaa, 2015) and global competitiveness in technology-driven world of the 21st century. Omodara (2014) opined that the implication of science education to the Nigerian national transformation agenda is that it should make people change for a better society, morally, economically and otherwise.

Science education curriculum in Nigerian basic schools is organized in such a way that one level prepares and equips learners with skills and knowledge for future learning. A learner is promoted to the next academic level after demonstrating competency in terms of mastery of contents as well as exhibition of appropriate skills and attitudes to confidently face the challenges of the next level of education. A learner who fails to achieve well in any science course is made to repeat it. For one to have access to study any science course at the tertiary level of education, one must write the United Tertiary Matriculation Examinations as a pre-requisite.

University Matriculation Examinations (UTME) are examination conducted by the Joint Admissions and Matriculation Board (JAMB) on yearly basis for the purpose of selecting and placing suitably qualified candidates into Nigerian Tertiary Institutions. Before the inception of the JAMB, individual universities in Nigeria conducted their own entrance examinations, but that had a lot of challenges which included the issue of multiple applications, general untidiness or uncoordinated system of university admissions, and high cost implication for the candidates (Omodara, 2014).

The JAMB has however been criticized over the years for its inability to organize credible entrance examinations, that have integrity (Ezike, 2010; Olugbamila, 2010; Obioma & Salau (2017). These criticisms led some universities to introduce post-UTME screening in 2005. The Post-UTME screening exercise is a situation where candidates who obtained certain scores, such as, 180 and above in UTME are invited by their choice universities for further examination to ascertain the worth and authenticity of their scores in UTME. Universities were of the opinion that they could no longer rely solely on UTME scores for the selection of their students but rather needed another examination to act as a means of reducing the admission of incompetent candidates into the nation's tertiary institutions.

Makanjuola (2015) in his own submission on why Post UTME is necessary claimed that at Obafemi Awolowo University (OAU), some of the students who scored high marks in UTME did not even turn up for post UTME because of fear of failure. Makanjuola is however not alone in this opinion as studies on predictive validity of UTME by Oluwatayo (2013) and Omodara (2014) also supported the low predictive power of UTME scores on students' academic achievement in the universities. Negative and inverse relationship of UTME scores with some external criteria were also noted by Adeyemo (2018). Despite the call by many for the scrapping of UTME because of its numerous challenges, it is supposed to be a predictive test that discriminates candidates who are ready and would achieve highly in university education.

Statement of the Problem

It is expected that candidates who possess good ordinary level requirements and attained high scores in UTME at the point of admission should be capable of pursuing their various degrees in Nigerian universities successfully with high (GPA) scores while students with average or ordinary level requirements and low UTME scores would end up with low GPA, respectively. Surprisingly, the reverse seems to be the case, particularly in science education programmes. Experience as a staff in one of the federal universities shows that many students that gained admission into the university with high UTME scores ended up obtaining low GPA at the end of the first year examinations. If the spate of poor academic achievement of science education students in various universities is not addressed urgently, it would be difficult for Nigeria to produce well informed, competent and efficient teachers who can teach science and science-related courses at all levels of the education system in Nigeria as prescribed by the National Policy of Education (FRN, 2014). This would further negate the provision of the policy for university education to contribute to national development and development of high-level manpower within the context of the needs of the nation. Moreover,

the aspiration of the Federal Government of Nigeria to become one of the world's big economies may not be realized.

Studies had been conducted in the past in the nations' tertiary institutions on the prediction of first year level students' academic achievement. However, no study was carried out in the north central zone of Nigeria among science education students. Therefore, this study focused on finding out to what extent UTME could predict first year students' academic achievement in universities in North Central Zone of Nigeria, as well as, the relationship between UTME scores and first year science education students' academic achievement.

Objectives of Study

The objectives of the study were to:

1. Ascertain if UTME could predict 100 Level Science Education Students Academic Achievement.
2. Find out the relationship between UTME and 100 Level Science Education Students Academic Achievement (GPA). To achieve the fore-stated objectives, the following null hypotheses were tested at 0.05 level of significance.

Hypotheses

1. There is no significant prediction of 100 Level Science Education Students' Academic Achievement by their UTME results.
2. There is no significant relationship between UTME results and 100 Level Science Education Students' Academic Achievement.

Method

The research adopted the ex-post facto and correlation research designs. The ex-post facto research design was used because both the cause and the effect had already occurred and the data involved in the study were collected as they were from the relevant sources without any manipulation. The correlation design was employed to investigate the relationship among students UTME scores and their first year 100 Level academic achievement scores. The correlation design aimed at ascertaining the relationship between the variables through the use of correlation coefficients. Students' Academic Record Inventory (SARI) was used to collect data from the sample. The data collected were analyzed using the Statistical Package for Social Sciences (SPSS) version 26.0. Pearson product moment correlation coefficient was used to test the hypotheses.

Results

Hypothesis One

There is no significant prediction of first year Science Education Students Academic Achievement by UTME scores.

Table 1

Model Summary on Extent UTME Predicted Students' Achievement in First Year Science Education

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.071 ^a	.005	.002	.5771

Table 1 reveals the model summary on the extent UTME predicted academic achievement of first year science education students in 2018/2019 academic session. The result yielded a regression coefficient of .071, coefficient of multiple determination of .005 and the adjusted R-Square of .002, which is low, indicating that UTME scores did not significantly predict first year students' academic achievement in science education. It was deduced that 0.20% of the variation in students' achievement was due to UTME, while 99.80% of the variation was due to other variables not investigated in the study.

Hypothesis Two

There is no significant relationship between UTME results and first year Science Education students' GPA.

Table 2

Relationship between UTME Results and first year Science Education students' Academic Achievement

Variables	N	\bar{X}	SD	DF	r	p-value	α	Decision
First year achievement	200	3.13	.58	298	-.071	0.110	0.05	Insignificant
UTME Result		3.60	.14					

Table 2 reveals the result on relationship between UTME and 100 Level science education students' academic achievement. The result yielded $r(298) = -.071$, $P > 0.05$. Showing a weak negative relationship between the two variables, since the p-value of 0.110 is greater than the 0.05 level of significance, the null hypothesis was retained. It was concluded that there was no significant relationship between UTME results and first year science education students' academic achievement.

DISCUSSION

Findings from hypothesis one revealed that UTME yielded a positive regression coefficient of 0.021 which was very low. This indicates that UTME scores did not predict first year student's academic achievement. This finding agrees with that of Achor, Aligba and Omanaiyi (2010) which indicated that UTME mathematics scores did not significantly predict students' academic achievement in university examination. This finding is in line with the finding of Omodara (2014) which revealed that the predictive strength of UTME scores on academic achievement of the students was low. This implies that the JAMB should improve on the methods of administration of the UTME in order to guide universities in admitting students would do well in their respective courses.

CONCLUSION AND RECOMMENDATIONS

Based on the findings of the study, It was concluded that UTME was a poor predictor of first year Science Education students' academic achievement. Furthermore, no relationship was found between UTME results and first year Science Education students' academic achievement. It was recommended that the JAMB should improve on the standard of UTME examinations questions to the level that they could predict first year students' academic achievement in the nation's tertiary institutions.

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