

# **Matriculation Examination Plus: Use of Computer Assisted Aptitude Test Undergraduate Admission into a Nigerian University**

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This is a case study of the use of computer assisted aptitude test (CAAT) by the University of Ilorin, Nigeria. Candidates applying for admission to different Universities in Nigeria for undergraduate degrees usually take the Universities Matriculation Examination (UME) conducted by the Joint Admissions and Matriculations Board (JAMB). Universities conduct a Post-UME screening for selecting candidates. Interview and questionnaire techniques were used on sampled candidates, test administrators and university staff. Findings indicate that the candidates who sat for the CAAT are computer literate and thus the question of whether secondary school graduates in Nigeria have this skill could at least be answered in the affirmative to a reasonable extent. Also, it was discovered that the steps taken before, during and after the CAAT promoted a fairly smooth testing procedure and provided immediate feedback to the candidates. It was recommended that test items should be standardized for more generalized use and a shorter period should be allocated to the examination in the future and prompt.

## **Introduction**

University admission is competitive world-wide. The selection procedure is geared toward ensuring that the best candidates are selected for university degree and diploma programmes from a large pool of applicants. Candidates for university matriculation must meet minimum entry requirements and succeed in selection tests to which they are exposed. By this, evaluation plays its selection and placement roles for educational institutions at the highest level since candidates are not merely offered admission but the fields and programmes for which they are best fitted are identified for them to be the best they could be (Owolabi, . In this wise, the university system helps society to provide the highest level of academic and professional training to the most suitable candidates. The admission process has turned out to be one of the most competitive exercises for young people.

## **University Matriculation in Nigeria**

Three historical epochs predates the current practice in terms of admission and matriculation of university students in Nigeria. The colonial period witnessed the first of these. Nwana (2006) stated that prior to the establishment of a university in the country, the London University Matriculation Examination was conducted for Nigerian candidates seeking admission into universities then existing outside the West African shores. This epoch therefore turned the attention of university applicants abroad and brought in the competitiveness that dots the path of admission seekers till the present. It lasted from the inception of western education until the establishment of Nigeria's first university. Before this dispensation ran out, a few Nigerians had received training in American Universities and thus schooling in the US was becoming an acceptable option.

The requirement to pass London Matriculation Examination for applicants to secure admission ceased with the coming of the first generation of Nigerian universities. That was the era of independent matriculation. It started with the establishment of the University College in Ibadan in 1948. Of course, those who applied abroad for admission in UK universities still sat for the London Matriculation Examination. Therefore the Matriculation Examination ran side

by side with the independent matriculation examinations conducted by universities established by Nigeria. Each of these universities developed a selection test to which they subjected candidates. Intending students therefore had to obtain as many forms as they could afford and write so many examinations. Some brilliant applicants secured multiple admissions while others not so fortunate retake the examinations as many times as it could take for them to get admitted. As could be predicted, many lost hope and gave up pursuit of university admission. The cost of this practice to the entire system was much and planners considered that it was more profitable to abolish that practice. By this period, hunger for university education had widened the search of Nigerians to all other continents of the world. Matriculation requirements of institutions in those countries began to count as a need of the educational system in Nigeria. Some institutions, especially privately owned, started introducing Scholastic Aptitude Tests and Baccalaureate Examinations to provide avenues for candidates who so wish to pursue admission in institutions where they are tenable. This enabled a few privileged secondary school products overcome the stiff competition for the limited spaces in the universities in Nigeria. This is proven by the enrolment figures of universities in Nigeria which had risen from 52,755 in 1978 when JAMB was established to 160,767 in 1987 and 236,261 in 1996. The supply in terms of admission spaces offered by the universities in Nigeria had always been a far cry from the demand (Adesina, 2005).

Part of the attempts to address the problems associated with the era of independent matriculation examinations by individual universities led to the establishment of the Joint Admissions and Matriculation Board (JAMB) by the Nigerian government in 1978 (Nwana, 2007). This third epoch was marked by a single matriculation examination for admission into all universities in Nigeria. The problem of getting enough space for all qualified applicants which had stared Nigerian tertiary education in the face right from inception continued. The JAMB/Universities Matriculation Examination (UME) was conducted for the first time in 1978 and had expanded to include matriculation examinations for admission to Polytechnics and Colleges of Education in Nigerian. By implication, all admission tests to tertiary institutions in Nigeria are conducted by JAMB. Chief among the problems that led to the cessation of the

dispensation of exclusive conduct of matriculation examinations in Nigeria by JAMB was a vote of no confidence in the predictive validity of UME scores for undergraduate students' performance in many programmes and a request for a further screening of applicants to universities before they could be offered admission.

The request by Vice Chancellors of Nigerian universities to conduct a Post-UME (PUME) screening exercise to select candidates for admission was granted in 2005 by the Federal Ministry of Education. Since then, the era of complementing UME with another test started. For these past four years, all candidates seeking admission to universities in Nigeria must meet the requirement of passing the matriculation examination plus success in another screening exercise conducted by the universities of their choice. This was a subtle way of bringing back the circumstance prevailing before the advent of JAMB. This era could be referred to as that of University Matriculation Examination Plus.

### **Methodology**

This is a case study of the 2008 PUME conducted by the University of Ilorin located in the North Central geo-political zone of Nigeria. It is a second generation conventional Nigerian University established by the Federal Government in 1975 with 9 Faculties. The objective of this study was to generate data pertaining to the first computer assisted aptitude test of this magnitude by a tertiary institution in Nigeria. The University of Ilorin Computer Assisted Aptitude Test became a peculiar case of interest. It marks a new phase of public examining in Nigeria as other institutions that used this approach in the past did it on a smaller scale. As with case studies, a combination of observation, questionnaire and interview techniques were used to obtain data (Nworgu, 1991).

Obtaining the data for this study involved the use of interview and questionnaire techniques on sampled candidates, test administrators and university staff. Two principal actors in the admission process, an administrator of the computer assisted aptitude test process and 10 candidates were interviewed. The qualitative method was used to present the relevant data and discourse in this study.

### **University of Ilorin and UME Plus**

Different modes of screening had been adopted by universities. Most universities conducted a confirmatory test in the same subjects that candidates wrote in JAMB/UME. The candidates' scores in JAMB/UME were used as basis for prequalifying them to participation in PUME. The range of minimum scores for those sitting for PUME was between 160 and 200 marks out of 400. Some institutions scored the credentials presented by the candidates and conducted interview to establish the veracity of both their JAMB/UME scores and certificates presented on the bases of certain criteria.

In its first attempt at conducting PUME, the University of Ilorin administered an essay test on applicants. It was required of them to write a maximum of one page essay. Apparently, this was a test in English aimed at revealing many things about aptitude for university education. Only those reaching a specified cut off mark were offered admission following the scoring of the essays written by the candidates. The following year, the condition for successfully screening of each candidate was their ability to remember details of the school certificate grades.

Of interest to this research was the 2008 PUME conducted by the University of Ilorin. The exercise started with a university-wide item writing workshop which involved all senior academic and administrative staff. This enabled the institution to quickly raise a team of item writers from the senior staff of the university and to develop a large pool of items that could be validated for use in selecting candidates for admission. The option of developing a scholastic aptitude test was chosen instead of asking candidates to take the same subjects they wrote examinations in during the UME. Objectives of the aptitude test included the following:

- i. Capture behaviors that represent the aims and objectives of university education;
- ii. Select candidates to all types of university programs;

- iii. Determine expected success in university education and rank applicants for selection;
- iv. Should be found meaningful and suitable by candidates for entry to university; and
- v. No group or individual should have advantage over others (Owolabi, 2008).

The content areas covered by the tests included English, General and Abstract Reasoning, Numerical Reasoning, and General Information. Specifications were to represent the stated objectives in these content areas generally at the six levels of thinking contained in Bloom's Taxonomy of Educational Objectives. The harvested items were subjected to item quality tests. Items failing to meet the criteria for selection were dropped while some were reviewed to make them fall in line with the objectives of the test.

#### **Computer Assisted Test Administration**

The items were subjected to authoring for the purpose of adapting them to computer administration. In two designated centres, Lagos and Ilorin, a firm of computer assisted test administrators took up the assignment of conducting the PUME. Some level of computer literacy was expected of the candidates to be able to take this test as had been in previous years when the registration for PUME had been done on-line.

Instead of the paper and pencil test conducted in previous years, candidates had their test items presented to them on the computer screen after completing initial confirmatory registration, read through and selected the right options and submitted on line when they end. The schedules followed for examination administration lasted about two weeks for over 20,000 candidates. Scoring, recording and feedback were immediately carried out by computer assistance. The candidates had their results released electronically. Complaints were also dealt with and this eliminated the delays experienced in the earlier years in scoring, recoding and collating the data generated during the PUME.

As should be expected of developments, this dispensation is not without its attendant problems. The candidates are beginning to write PUME in more than one institution with the

possibility of securing admission in as many of these as they perform well. JAMB, through which all admissions must be processed, is struggling to convince the whole populace and particularly the university dons of the predictive validity of its tests. No one knows how long it would take before the crisis of confidence is resolved. The sooner it is the better for the system.

## **Conclusion**

The suspicion that undergraduate students' GPA did not justify their JAMB/UME scores had given birth to PUME. Apart from the strong opinions expressed by strategic elites in academia and certain segments of society, and the pressure mounted on the Ministry of Education for policy shift, there appears to be no systematic investigation to inform decision making. These are signs that we need proper evaluation. There is also a need for an examination system that could sustain the confidence of all stakeholders.

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