

## **EXPLORING LOCATIONAL DIFFERENCES IN CANDIDATES' EXPERIENCES WITH COMPUTER-BASED TESTS (CBTS) AT JOINT ADMISSIONS AND MATRICULATION BOARD (JAMB) EXAMINATIONS**

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### **Abstract**

*This study examines urban-rural differences in the experiences of candidates at the recently concluded JAMB examinations which was taken via CBT mode as against the Pen-On-Paper (POP) mode which is conventional a most in-school examinations. The study adopted the descriptive survey design. Data were collected using a questionnaire which was administered to 220 candidates sampled proportionately from urban and rural-based JAMB centres in Awka and Aguata Education zones of Anambra State. Data were analyzed using simple percentages and means. Result among others indicated that whereas candidates from urban centres showed remarkable preference for CBT, their counterparts from rural areas preferred POP mode of testing. Implications of the findings in the area of provision of digital infrastructure and capacity training of teachers in secondary schools, irrespective of location or ownership were highlighted.*

### **Introduction:**

Education the world over, have been recognized as the most potent tool for the attainment of national goals. This perhaps, explains why education forms critical part of the 7-point Agenda of the Federal Government of Nigeria. Indeed FRN (2014), in realization of the importance of education to national development observed that no nation can rise above the quality of her education. However, Okpala (2010) observed that the achievement of the goals and aspirations of the nation using education as an instrument, demands effective teaching and learning activities in the school system. Furthermore, the process of teaching and learning in schools would remain largely incomplete without a reliable mechanism of ascertaining the extent to which the learners have acquired the desirable outcomes in terms of competences, knowledge, skills, attitudes and values. This mechanism is often referred to as examination. Regrettably, the phenomenon of examination malpractice has

emerged to confound the credibility of examination results thus rendering them unreliable contrary to the primary intension of such exercise. Okpala (2010) defined Examination Malpractice as all those acts of wrong-doing, which give the candidates undue advantage over others in obtaining success before, during and after administration of examination. Examination malpractice is perfected through various forms by students and their accomplices. Examination malpractice has become a primary threat to the conduct of examinations in recent times, both at the classroom and national levels. In view of the grave consequences of not mitigating its continued existence, several efforts, strategies were adopted by stakeholders to checkmate the spread of this ugly trend, especially by examining bodies.

Following the Adoption of Unified Tertiary Matriculation Examination (UTME), as central examination that conducts entrance examination for all prospective entrants to Nigerian tertiary institutions, in 2015, the examining body Joint Admission and Matriculation Board (JAMB), explored a number of strategic options aimed at stamping out the menace of examination malpractice in the nation's examination system. The latest of these strategic options geared towards meeting up with international best practices in assessment of learning outcomes is the introduction of the use of Computer Based Test for selecting prospective entrants for Nigerian tertiary institutions as against the Pen-On-Paper (POP), mode of testing which had been in use. It will be recalled that POP testing which had been in use over the years is bedeviled with various sharp practices including impersonations, recruitment of unscrupulous and unqualified personnel as supervisors/invigilators, copying from scripts of another candidate(based of mutual agreement), use of ICT devices (such as cell-phone, text messaging) etc.

By adopting CBT, JAMB had gone extra-miles to digitalize the conduct of her examination by ensuring that all known pitfalls that confound the use of POP mode of testing are put into checks through a number of strategies including that:

- i. Only accredited JAMB CBT-Centres are authorized to register candidates for UTME.
- ii. Registration of candidates are fully digitalized (on-line based).
- iii. Biometrics of candidates are captured at registration points and again, before entering for the examination.
- iv. Communication of relevant information such as examination slips, centre and personal number, examination date, time e.t.c to candidates are through personal electronic mails (e-mail) of the candidates concerned.
- v. Results of examinations are sent to candidates few hours after the examination.

All these measures are welcome developments meant to enhance the reliability of such exam results so that only qualified candidates are selected and assigned spaces in our tertiary institutions.

However, reactionary comments abound among the populace and in the media on these noble steps taken by JAMB. Whereas some see it as welcome development, others see it as unwelcoming or being hurriedly adopted (Moneke, 2017; Fredrick, 2014 and Fides Newspaper, 2017). An educational principle holds that classroom experiences should be so provided to the learner as to resemble the testing situation. It however, appears to be a matter of concern that majority of the candidates over the years, have been used to POP mode of testing in their school-based examinations but were subjected to CBT for their entrance examination. Obviously, some of the candidates would feel disadvantaged over the introduction of CBT while some of them may be advantaged. Candidates who were used to the use of computer facilities in their secondary schools, particularly those from urban and voluntary agency schools, are likely to enjoy the CBT unlike those other ones from rural- based public secondary schools where there were dearth of computers and related infrastructures. Indeed, the extent of availability of digital infrastructures in schools and degree of exposure of students to them prior to engaging in UTME are relevant variables that would impact on candidates' experiences with CBT at UTME. In any case, the candidates have no alternative than to key into the new order, in spite of the attendant and perceived challenges. It would be instructive to note that the ramifications of candidates' experiences with CBTs at JAMB examination is a composite of what they went through before, during and after the examination. Thus, the registration process and allied activities, conduct within the examination hall as well as other post-JAMB examination experiences peculiar to CBT-mode counted in their experiences. The researchers therefore, thought it worthwhile, to explore the candidates' experiences vis-à-vis their location peculiarities.

In an effort to overcome the challenge of examination malpractice and enhance the quality of entrants into Nigerian tertiary institutions, JAMB was mandated to conduct UTME to regulate the selection of qualified candidates and suitably place them at various tertiary institutions in Nigeria. To achieve this goal, JAMB devised several quality assurance mechanisms in the conduct of her examinations which were primarily based on P-O-P testing. Regrettably, P-O-P testing in a country like Nigeria, with so many conflicting interests and numerous candidates struggling for few available spaces for admission, was riddled with an avalanche of challenges which militated its smooth conduct. In other words POP was confronted with various sharp practices including copying, undue influence of invigilators and supervisors,

use of mercenaries and outright impersonations, among others (Ojerinde,2010; Okpala, 2010). Additionally, there were reported cases of candidates who scored very high in JAMB examination but could not scale through first year programmes in universities because of academic deficiencies. Consequently, the need to adopt other mode of examination different from POP became obvious. Still being obsessed with the zeal to attain her mandate and at the same time being mindful of selecting quality entrants in Nigeria tertiary institutions, JAMB introduced CBT mode as a way of meeting up with global trends and standard in conducting public examinations. But, Nigeria as a developing nation has her own peculiarities and challenges especially those bordering on rural-urban dyad. For instance, the extent of availability of digital facilities and candidate's exposure to the use of such facilities in secondary schools located in these locations are but some of the variables likely to impact on candidate's experiences with CBT mode of testing. The researchers therefore, deemed it expedient to explore the location differences in the candidates experiences with the adoption of CBT in UTME.

The following research questions guided the study:

- i. To what extent do candidates experiences on the use of CBT at UTME differ based on rural-urban locations?
- ii. Compared to POP mode of testing, how did the preference pattern of the candidates vary along rural-urban Locations?

### **Method**

This study adopted the descriptive survey research design in which the candidates were requested to indicate their extent of agreement or disagreement with some identified statements about their experiences with the use of CBT in UTME. The sample for the study consisted of two hundred and twenty (220) candidates sampled across rural (Aguata) and urban ( Awka) locations in Anambra State.. From two CBT- Centre in each of the two locations, sixty candidates were randomly sampled for the study, after the JAMB examination, making a total of two hundred and forty (240). However, only two hundred and twenty of them were completely filled and returned. Thus the sample size used for data analysis was 220 respondents The instrument for data collection was a 15-itemmultiple response questionnaire developed by the researchers, which the respondents filled and returned. This instrument was however, supplemented with verbal discussions with the candidates to find out additional information on their experiences over the use of the CBT. The questionnaire had two sections dealing respectively on experiences regarding the use of CBT for UTME and their preference pattern

between CBT and POP modes of testing. Section A contained 14 items with response options of Strongly Agree (SA) which is assigned 4-points; Agree (AG) which is assigned 3-points, Disagree (DA) which is assigned 2-points and Strongly Disagree (SD) which is assigned 1-point. The respondents were requested to indicate their extent of agreement or disagreement as to the extent the statements captured their experiences on the use of CBT for UTME. The instrument was validated by two experts in educational research and statistics and their comments led to the modification of some questionnaire items. Following the pilot testing of the final version of the instrument, using an equivalent sample of prospective JAMB candidates, a reliability index of 0.75, was determined for the instrument using Cronbach alpha technique. The value was considered high enough and hence reliable and adequate for the actual study. Data were analyzed using percentages and means ratings. A cut-off point of 2.50 was determined for decision making in section A. This implies that items with mean values of 2.50 and above were deemed to be accepted while those with cut-off point less than 2.50 indicated the contrary.

### Results

Table 1: Candidates experiences on use of CBTs at UTME for Rural Location.

	RURAL RESPONDENTS(100)	SA	AG	DA	SD	Mean	Remark
1	Registration Process was not tedious	20	15	40	25	2.30	Reject
2	Computer systems were adequate	30	40	15	15	2.85	Accept
3	All computer systems were functional	15	20	35	30	2.20	Reject
4	Environment for CBT was conducive	28	52	4	16	2.92	Accept
5	Power supply was steady	38	42	15	5	3.00	Accept
6	Examinations were taken in batches	43	42	10	5	3.23	Accept
7	Timing for CBTs was satisfactory	40	30	12	18	2.92	Accept
8	Examination date and time were staggered.	30	35	20	15	2.80	Accept
9	Familiarity in the use of computer	8	10	42	40	1.86	Reject
10	Inter-personal communication was minimal.	40	28	12	20	2.96	Accept
11	Seating arrangements were	25	43	20	12	2.81	Accept

	satisfactory							
12	Examination details were communicated via emails and profile	30	38	15	17	2.81	Accept	
13	Thumb-prints of candidates mandatory were taken before entering for examination.	28	40	20	12	2.84	Accept	
14	Numbering of questions were staggered/randomized for all candidates.	4	16	43	37	1.87	Reject	

Table 1 shows the mean ratings of the experiences of respondents from CBT centres in rural location. The mean ratings ranged from 1.86 to 3.23. Four items in serial numbers 1, 3, 9 and 14 were rejected by the respondents since they had mean values less than the cut-off point of 2.50. The rest of the remaining items with mean values above 2.50 were accepted.

**Table 2:** Candidates experiences on use of CBTs at UTME For Urban Location.

	URBAN RESPONDENTS (120)	SA	AG	DA	SD	Mean	Remark
1	Registration process was not tedious	25	20	35	40	2.25	Reject
2	Computer systems were adequate	40	40	15	25	2.79	Accept
3	All computer systems were functional	14	16	43	47	1.98	Reject
4	Environment for CBT was conducive	38	52	14	16	2.93	Accept
5	Power supply was steady	30	45	20	25	2.66	Accept
6	Examinations were taken in batches	40	40	12	28	2.77	Accept
7	Timing for CBTs was satisfactory	43	52	20	5	3.11	Accept
8	Examination dates and time were staggered	48	42	25	5	3.11	Accept
9	Familiarity in the use of computer	20	25	40	35	2.25	Reject
10	Inter-personal communication was	38	40	22	20	2.80	Accept

	minimal						
11	Seating arrangements were satisfactory	35	43	30	12	2.84	Accept
12	Examination details were communicated via electronic mails (e-mails) and profile.	30	48	27	15	2.78	Accept
13	Thumb-prints of candidates mandatory were taken before entering for exam	38	40	30	12	2.87	Accept
14	Numbering of questions were staggered/randomized for all candidates	18	20	42	40	2.38	Reject

Table 2 shows the mean ratings of the experiences of respondents from CBT centres in urban location. The mean ratings ranged from 1.98 to 3.11. Four items in serial numbers 1, 3, 9 and 14 were rejected by the respondents since they had mean values less than the cut-off point of 2.50. The rest of the remaining items with mean values above 2.50 were accepted.

Table 3: Candidates Preferred Mode for Writing UTME Based on Rural-Urban Location.

15	Mode of Writing UTME	Frequency RURAL	Percentage	Frequency URBAN	Percentage
	P-O-P	75	75	25	21
	C B T	25	25	95	79
	Total	100	100	120	100

Result from table 3 indicated that candidates from rural location showed 75% preference for POP mode of testing as against 25% for CBT. On the other hand, respondents from urban location indicated 79% preference for CBT, as against 21% for POP mode of testing.

## Discussion

Tables 1 and 2, in respect of research question one, presented findings concerning rural and urban-based candidates' experiences respectively on the use of CBT's at JAMB examinations. All the items listed in the tables as candidates experiences were largely agreed except items 1, 3, 9 and 14. In other words, the candidates irrespective of rural-urban differences, accepted

that at the CBT centres, there were adequacy of computer sets, conducive environment, steady power supply, examinations were taken in batches, timing was satisfactory, examination dates and time were staggered for different candidates, minimal inter-personal communication, satisfactory seating arrangements and thumb-print verification before entry for examinations. Similarly, irrespective of rural-urban differences in the provision of digital infrastructure in schools, the candidates accepted that the registration process for UTME was tedious, all laptop computers provided for the examination were not functional, all the candidates were not familiar with the use of computers and inter-personal collaborations were minimal.

Granted that these findings appeared impressive, more effort need to be made to enlighten the public on the usefulness of CBTs as well as the need for government and school proprietors to provide computers for classroom instructional delivery. This will serve to prepare the student well in advance on how to use CBT's at UTME. This pre-supposes that computers should be adequately available and accessible to teachers and students for instructional purposes (Fredrick, 2014). Considering the above findings, one would feel satisfied that CBT's has actually come to set the pace for eliminating the most of the unwholesome practices that hitherto, characterize such public examinations. It may need to be pointed out that the National Examination Council (NECO) had equally adopted the electronic registration and biometric-capture platforms as strategies to enhance the quality of conduct of her public examinations (Okpala, 2010). Stressing on the need for computerization of public examinations, the researcher pointed out that non-conventional and multi-sectorial approaches should be employed to drive away examination malpractice from Nigerian educational system. Similarly, a good proportion of candidates with merited scores are more likely to secure placements in subsequent JAMB examinations.

Narrating the challenges encountered by the candidates in course of registration and even into the CBT mode of examination proper, Fides Editorial (2017), stated that "the registration process took unnecessarily long time and candidates were subjected to long queues in the rain and under the sun, waiting to register....,expectedly, some of the candidates could not register properly or not at all, causing them to miss the examination". In the examination proper, the candidates were made to write, using the laptops provided by JAMB, not minding that some of them have no such facilities in their schools. For some candidates in the examination hall, their systems had either been logged onto by other candidates, and therefore, had to wait until they logged out, or that some errors were made while logging on, thus further robbing them of time. For some candidates, their computers developed

problems during the examination, meaning that they either did not have enough time to revise their work or did not finish. One of the respondents was bold enough to volunteer an information that as he was concluding his examination, his computer went off. All he wrote went with it and he could not submit his work through his system.

From table 3, in respect of research question 2 emerged the finding that a greater proportion of candidates from rural location preferred P-O-P tests (75%) when compared to CBTs (25%). A possible explanation for this turn out of event is not far-fetched. First a good number of candidates seeking admission to tertiary institutions are used to P-O-P tests at internal/school based examinations particularly in the rural-based schools accessibility to computer facilities are not common. It is not as if computers are not available and accessible to teachers and students for instructional delivery and practice. Often the computers are securely locked in the Principals office or computer room and may be dusted up when supervisors are to visit the school. Most schools in urban locations have enabling environment for proper utilization of computer facilities for instructional purposes, no wonder candidates from such locations are better disposed (79%) to the use of CBTs as against POP (21%) for UTME. Again, the teachers in most rural schools may not be knowledgeable in the use of computer for instructional delivery or a computer teacher/specialist may not be available in school (Anaeke and Nnaka, 2015). Secondly, some candidates believe that P-O-P test easily provide a lee-way to securing assistance from colleagues, invigilators or mercenaries in the examination hall. There is no doubt that P-O-P tests compared to CBTs, are more amendable to examination misconduct.

Corroborating the view that candidates from rural based public secondary schools were placed at a disadvantaged position in subjecting them to the use of CBT, the Fides Editorial (2017), stressed that by adopting this mode of testing, JAMB has only succeeded in favouring the advantaged over the disadvantaged not minding the fact that such exercises are supposed to be fair to all. The editorial concluded by cautioning that if JAMB has no fool-proof plan of conducting her examinations, then it may consider reverting to its earlier method (POP) until such a time it masters its own technology and rids it of technical hitches. Writing further on the disadvantaged position to which most rural-base candidates were placed, Moneke (2017), pointed out that UTME Syllabus and other information relevant for effective preparation for the examination were provided by JAMB only in an internet enabled computer disc, thus disadvantaging further, those candidates who had no access to such facilities due to location barriers. Hence, such candidates were prevented from preparing adequately for the examination.

### **Implications:**

The findings of this study have some implications for the Nigerian educational systems. The world is in the digital age. An era in which a lot is dependent on electronic gadgets. A quantum of work is done in a split second by gently pressing of a button. Nigerians cannot afford to remain behind in this global trend. Adoption of CBT by JAMB in conducting her entrance examinations is a step in the right direction.

Again, preference for P-O-P as against CBTs is like preference for backwardness when one ought to be matching forward. Perhaps, due to lack of awareness, one can make a wrong choice, but with proper enlightenment, right decisions can emerge. This underscores the need for public enlightenment on the rationale and potentials for the adoption of CBTs in UTME.

Although the result of this study indicated adequacy of computer systems at JAMB examination centres, probably because these centers were privately owned establishments, evidence abound of the paucity of electronic gadgets in public secondary schools (Etiubon and Akpan, 2017; Nnaka and Anaeke, 2015). Non-availability or inadequacy of relevant electronic gadgets needed to make for effective teaching and learning in public schools to meet up with global trends in education is capable of truncating the lofty educational goals of a Country. An educational system whereby the enabling infrastructure including human and material resources are compromised would not augur well for meeting global competitiveness. Nigerian students should be IT-Compliant to meet up with the world competitive market. This underscores the need for provision of and proper utilization of computers in schools. Candidates preferred P-O-P tests to CBT; Non-familiarity to the computers which led to a feeling of bewilderment was a challenge to use of CBTs.

### **Conclusion**

The findings of this study has revealed some satisfactory experiences of candidates' involvement in use of CBT for UTME as well as some unsatisfactory ones. Specifically, candidates from rural settings showed preference for POP mode of testing while their counterparts from urban settings preferred the use of CBTs.

### **Recommendations**

In view of these conclusions, it is recommended that:

- I) Use of CBTs at UTME should be supported and encouraged. It may even be extended to schools where the facilities are available, since it minimizes examination misconduct to its barest minimum.

- II) Government and other stakeholders in education should provide computers to schools. This will enable teachers and students utilize them for instructional purposes and get familiarized to its usage.
- III) More public enlightenment campaign should be embarked upon by relevant stakeholders in education like JAMB, NECO, to publicize the strengths of CBTs and reasons for its adoption by JAMB.
- IV) Capacity building of teachers on the use of computers for instructional delivery should be strengthened.

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