



**CHALLENGES OF 2018 COMPUTER BASED TEST (CBT)  
JAMB EXAMINATION FOR SENIOR SECONDARY SCHOOL  
STUDENTS' ACADEMIC PERFORMANCE  
IN ANAMBRA STATE, NIGERIA**

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**Abstract:**

The study investigated the challenges of 2018 Computer Based Test (CBT) Jamb examination for senior secondary school students' academic performance in Anambra State. Three research questions and one hypothesis guided the study. Descriptive survey research design was adopted. 650 senior secondary final year students constituted the population of the study; while simple random sampling was used to obtain 325 as the sample, spread across the three Education Zones of the area. A 20 item questionnaire developed by the researcher was used for data collection. The validation of the instrument was done by three experts, two in Educational Management and Policy and an expert in Measurement and Evaluation Unit of Educational Foundations Department of Nnamdi Azikiwe University, Awka. Data obtained were analyzed through mean and t-test statistic. The findings indicate that some challenges such as lack of infrastructural facilities, insufficient accommodation, equipment, power outage, incompetence on the part of the examinees among others affect the academic performance of senior secondary school entrants during CBT Jamb examinations. Gender has no significant effect on the challenges experienced by the students since computer facilities provided for male and female candidates to the examination centers are the same. Based on the findings, the study recommends among others that there should be enhanced provision of infrastructural facilities, improved power supply and proximity of examination centers to candidates' place of domain/residence.

**Keywords:** CBT, Jamb examination, secondary school, academic performance

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## 1. Introduction

Education is considered a fulcrum of capacity building geared towards national growth and development in every generation. Based on the premium placed on the dividends of credible education, the need to ascertain the performance of students at the end of their academic endeavour is desirable. Thus, Nigeria among the global world nations presently transited from the analogue method to digital system of evaluating secondary school student's performance in external examinations.

Secondary school education according to the National Policy on education (FRN, 2004) is the education children receive after primary school and before tertiary stage geared towards useful living within the society and higher education. At the final year of secondary education, students are exposed to the digital medium of assessment using Computer Based Test (CBT) for Joint Admission and Matriculation Board (JAMB) examination.

CBT has been widely defined by scholars as *"assessment that are administered by computer in either stand-alone devices linked to the internet or world-wide-web (www), most of them using multiple choice questions"* (Oduntan, Ojiawo and Oduntan, 2015).

Concurring with this, Obioma, Junaidu and Ajagun (2013) view CBT or e-assessment as an electronically programmed test, coded, recorded and evaluated with very fast result for admissions into tertiary institutions in developed and developing societies. In their views, they opined that automated assessment if carefully designed can comprehensively and reliably assess students in the three domains of learning: cognitive, psychomotor and affective. Other names for CBT include Computer Assisted Testing (CAT), Computerized Assessment, Computer Aided Technology (CAA) Computer Based Assessment (CBA), Online Assessment, Web-Based Assessment, Technology Enhanced Assessment, Automation Assessment and E-Assessment, Test or Examination (Obioma et al, 2013; Alabi et al 2012).

Generally speaking CBT is a form of ICT for test administration or assessment whereby the examinees responses are electronically coded, assessed, recorded with prompt publication of results.

Presently in Nigeria, CBT is a form of examination, an assessment of students' performance that determines their eligibility for admission into tertiary institutions. In the course of this mode of examination, the students level of understanding, pedagogical attainment and learning experiences imparted are evaluated.

Sequel to CBT examination of students performance has been the only way to measure the level of their understanding, attainment of the pedagogy and learning experiences imparted in the course of teaching and learning interaction. Hence, Emaikwu (2012) sees examination as *"part of evaluation in education aimed at determining a learner's level of skill acquisition or intellectual competence and understanding after a given period."* Examination though viewed by some, as not the true test of knowledge, has over time been accepted as an age long pattern of determining students' performance in schools. Thus, Alumode (2010) opines that the transactions and outputs of educational institutions in terms of their products; are only acceptable and desirable to stakeholders;

if their expectations are closely met. The educational output is determined through examination of the students' performance for which CBT is one of the modes.

Tacitly, Nigeria in order to join the technologically driven society had to change her mode of examination of pencil pen test (PPT). The paradigm shift from PPT to Computer Based Test (CBT) conduct of JAMB examination started in 2013 with mixed feelings and fears in the spines of education stakeholders. In spite of the wide understanding that CBT was instituted in order to ameliorate unpleasant experiences associated with the former method of examination; there seem to be various challenges facing tertiary students' entrants in Anambra State during the examination. Furthermore, Vanguard, 8<sup>th</sup> November 2012 reported that Joint Admission and Matriculation Board (JAMB) announced that from 2015, CBT will be used to conduct all Unified Tertiary Matriculation Examination (UTME) to achieve the objectives of ensuring 100 percent elimination of all forms of examination malpractices that had been a major challenge in the conduct of public examination in the country. This reports the tremendous benefits of CBT which outweigh PPT for entrants into tertiary institutions in Nigeria.

Truly speaking, implementation of a transitional examination using CBT has come to stay in Nigeria, for such will equally reposition the country to align with the on-going global world technology. To justify the need for the transition, Jamb enlisted the advantages of CBT to include increased delivery of test items that have been calibrated and delineated according to their pertinent item characteristics (instructional level of objectives, difficulty level, discrimination level and functionality of distracters. In addition, efficient administration of examination and scoring of tests, reduced costs for many elements of the testing lifestyle and logistics, improved test security resulting from electronic transmission and encryption for total eradication of breaches of examination security, unbiased test administration. Also, reduction in the spate of examination security breaches, improvement in the quality and standard of education in the long run (Ikiroma, Joshua, Joshua 2015). Amidst these advantages, CBT method seem not to have addressed the challenges of JAMB examination for which problem of examination malpractice still exists. For instance, prospective candidates for tertiary institution admission are caught cheating with the cell phones among others during CBT JAMB examinations. Concurring with this view, Ogbodo (2006) posited that there were several cases of examination malpractices, academic excesses like forging of UTME results, admission of unqualified candidates that are not properly grounded to face academic rigor in the campuses.

On their part, Nkwocha, Akanwa and Nkwocha (2015) tacitly upheld that *"the purpose of organizing Unified Tertiary Matriculation Examination for candidates is to be able to select candidates who will be capable of coping with tertiary education scheme of work."* All these postures are neither here nor there because today in Nigerian tertiary institutions are some students who scored very high at point of entry but perform poorly academically. Surprisingly also, a candidate "prospective law student" who scored 340 in JAMB result could not spell lawyer during post UME in one of the Nigerian tertiary institutions recently. Supporting the assertion, Nebo (2005) observed with grave

concern that incompetent students that cannot cope with the academic demands and institutions were given admission thereby producing ill-backed graduates in the dropouts that cannot move the nation forward. Reflecting on the disinteresting academic platform, some scholars stressed the importance of handling the challenges bedeviling assessment in various institutions.

In a bid to handle the challenging situation in the course of CBT Jamb examination, it is worthy to note that Nwana (2007) harped thus, before there can be test validity, there must be test civility which connotes the degree to which the conditions under which candidates are made to take an exam or test is devoid of challenges which can affect candidates performance in the test. Nkwocha, Akanwa and Nkwocha (2015), listed the challenges to include: insufficient accommodation facilities, equipment materials and incompetence in use of equipment provided for taking the test. By implication they further noted that examinations taken under conditions which lack test civility would measure psychological stresses encountered by the candidates during the examination, instead of measuring their ability in the objectives or skills the test is designed to measure. Consequently, it is evident that the academic performance of students in CBT Jamb examination without enabling environment may not yield the desired result.

Academic performance of students is associated with lots of factors which either enhance or mar students' performance. Academic performance denotes more of statistical information of what you did in the examination, such as Grade Point Average (GPA), test grades which are involved in concluding whether the goals were reached or not. Therefore, in a nutshell, academic performance entails the extent to which an examinee or student achieved the short or long term educational goals.

By simply analogy and widespread observation, since the inception of CBT by JAMB in 2013, UTME has consistently been tagged with multi-faceted challenges affecting the performance of prospective entrants into tertiary institutions in Anambra state, Nigerian. It is based on this premise that the paper is poised to investigate the challenges of the 2018 Computer Based Test JAMB Examination for senior secondary school students' academic performance in Anambra State.

## **2. Statement of the Problem**

In Nigeria, test of knowledge is measured through examination conducted in schools after exposure of students to periodic learning experiences. Succinctly put, CBT in Nigeria has come to stay over and above PPT examination for admission into the tertiary institutions by senior secondary school students. However, it appears that as at 2018, CBT Jamb examination in Anambra State is still faced with myriad of challenges bedeviling the efforts of credible performance of some students.

Truly, implementation of a transitional examination using CBT will reposition Anambra State and Nigeria in general to align with other technological driven world. However, over the years the good motive behind this exercise, which demands the use of CBT for JAMB UTME has consistently introduced challenges such as tension,

apprehension, and nightmare to some prospective candidates for admission into Nigeria tertiary institutions. The year 2018 CBT examination was not an exception.

Since the inception of CBT for Unified Tertiary Matriculation examination, some challenges appear as reoccurring decimal in Anambra State Senior Secondary School CBT JAMB examination. These challenges include epileptic power supply, which distort the functionality of the computers, faulty generators, inadequate computers, proximity of examination centers, candidates' incompetence in use of computers, unfriendly attitude of some examiners, and distant examination locations among others.

Despite frantic efforts made by the government to address these challenging situations during CBT Jamb 2018 examination, some centers within Anambra state did not commence examination till 5pm due to poor power outage and lunatic generators which could not power the appliances. The attendant boredom associated with an examination slated for 8am that commenced at 5pm is unimaginable. Such exhaustion definitely will impair the performance of the students. The outcome may result not only to poor performance but massive failure. No wonder the geometric progression of JAMB entrants each year is on alarming rate in Anambra State. Some students wrote their exams at night and arrived their residential locations very late, thereby causing heartache to parents. The issue of network failure engendered logging in and out, in some cases outright switch off of computers. There is glaring dissatisfaction over poor internet connectivity in some CBT Jamb examination centers, software factors, inadequate computers, saver shut down, unfriendly attitude of some invigilators, proximity to examination centers, some students' socio economic background among others.

Asides the foregoing, some students performance resulting from the challenges encountered during CBT JAMB examinations in Anambra State is worrisome. Against this backdrop, the researcher was spurred to investigate the challenges of 2018 Computer Based Test (CBT) Jamb examination for senior secondary school students academic performance in Anambra state.

### **3. Research Questions**

The following research questions guided the study:

- 1) To what extent does dysfunctional computers affect academic performance of Senior Secondary School Students in 2018 CBT JAMB examination.
- 2) To what extent does epileptic power supply affect the senior secondary students academic performance in 2018 CBT JAMB examination.
- 3) To what extent does other attendant challenges affect the academic performance of senior secondary school students in 2018 CBT JAMB examination.

### 3.1 Hypothesis

**Ho 1:** There is no significant difference in the mean responses of male and female students on the extent of challenges experienced during CBT Jamb examination.

### 4. Method

The design of the study was descriptive survey aimed at investigating challenges of 2018 Computer Based Test (CBT) Jamb examination for senior secondary school students academic performance in Anambra State. The population of the study comprised 650 Senior Secondary Students in secondary schools across three education zones of the area. A sample of 325 students was drawn using simple random sampling technique. Stratified proportionate random sampling technique was used to select the education zones. The instrument for data collection was a 20 item structured questionnaire designed by the researcher.

Each of the items was on a 4- point rating scale of Very High Extent (VHE), High Extent (HE), Low Extent (LE), and Very Low Extent (VLE). The instrument was face validated by three research experts, two in Educational Management and Policy and one in Measurement and Evaluation unit of the Educational Foundations Department, all from Faculty of Education, Nnamdi Azikiwe University, Awka. The internal consistency of the instrument was determined using Cronbach Alpha method in which 0.87 was obtained as the reliability index. Data collected were analyzed using mean scores to answer the research questions, and t-test was used to test the null hypothesis at 0.5 level of significance. The mean values were interpreted as follows; less than 1.5 (VLE); 1.5-2.49 (LE); 2.50-3.50 (HE); 3.50 and above (VHE), while the hypothesis will be accepted if the table value is greater than or equal to the calculated or critical value and will be rejected if otherwise.

**4.1 Research Question 1:** To what extent do dysfunctional computers affect academic performance of senior secondary school students in 2018 CBT examination.

**Table 1:** Mean ratings on the extent to which dysfunctional computers affect students' academic performance

S/N	Items	VHE	HE	LE	VLE	$\bar{X}$	Remark
1	There is inadequate provision of functional computers to all the candidates for the examination.	139	97	73	41	2.95	HE
2	Some students were hindered by saver shut down in the course of writing the examination	160	100	47	43	3.08	HE
3	There are inadequate functional computers given to candidates for the examination	133	92	70	55	2.87	HE
4	Candidates whose computers could not boot were not given necessary assistance	164	127	20	39	3.19	HE
5	Lack of basic computer training in school hinder the effective use of CBT for JAMB examination	174	98	32	46	3.14	HE

Table 1 indicates that the mean response of students to items 1-5 were more than 2.50. This shows that dysfunctional computers affect the performance of students to a high extent during CBT Jamb examination, hence the need for government to intensify the area of adequate provision of functional computers for CBT Jamb examinations. This alone will ensure effective academic performance.

**4.2 Research Question 2:** To what extent does epileptic power supply affect the senior secondary students' academic performance in 2018 CBT Jamb examination.

**Table 2:** Mean ratings on the extent to which epileptic power supply affect students' academic performance

S/N	Items	VHE	HE	LE	VLE	$\bar{X}$	Remarks
6	Epileptic power supply hindered some students completion of their questions for the examination	111	59	99	81	2.57	HE
7	Problem of rectification of power supply led to the commencement of the examination by 5pm	110	55	106	79	2.56	HE
8	Generators were hired very late for supply of power for the examination	59	54	131	106	2.19	LE
9	CBT examination poses challenges to the academic performance of senior secondary students in JAMB	113	107	22	72	2.75	HE

Table 2 shows that the mean responses of students to all the items except item 8 were above 2.50. This indicates that epileptic power supply reasonably affect the academic performance of CBT Jamb entrants. The unpleasant challenges lead to late commencement of examination, tension, boredom and poor performance. Analyses of the items show that some students are hindered from completing their question within the given time.

**4.3 Research Question 3:** To what extent do other attendant challenges affect the academic performance of senior secondary school students in 2018 CBT JAMB examination.

**Table 3:** Mean ratings on the extent to which other attendant challenges affect students' academic performance

S/N	Items	VHE	HE	LE	VLE	$\bar{X}$	Remarks
10	Period of time allotted for the examination is inadequate.	110	121	61	58	2.81	HE
11	The seating accommodation provided is not enough.	127	131	46	46	2.97	HE
12	The carrying capacity for candidates in my centre does not commensurate with the population for the exam.	93	165	57	35	2.90	HE
13	The invigilators were not very friendly to doused tension of the students during the examination.	99	105	64	82	2.63	HE
14	Proximity to the examination centre constitutes challenges to candidate's academic performance.	94	144	60	52	2.80	HE
15	Students from low socio-economic background perform poorly in CBT JAMB examination.	144	106	38	62	2.95	HE

16	The use of CBT in JAMB examination does not add to massive failure recorded presently by senior secondary school students enrolled annually.	89	73	80	108	2.41	LE
17	Senior secondary students affirm that CBT JAMB Examination does not enhance students' academic performance.	164	140	25	21	3.28	HE
18	Education system in our country is not ripe for CBT usage in JAMB examinations.	99	135	59	57	2.79	HE
19	CBT JAMB examination does not reduce examination malpractices.	102	151	51	46	2.88	HE
20	Usage of CBT for JAMB examination promotes tension for prospective candidates for JAMB assessment.	139	111	52	48	2.97	HE

Table 3 reveals the extent other attendant challenges affect the academic performance of CBT Jamb entrants. This posits that all the items except item 20 were above 2.50 showing that variables such as time, accommodation, proximity of exam centers, students' low socio-economic background, and unfriendly attitude of some invigilators among others impair credible performance of students in CBT Jamb examination.

**4.4 Ho 1:** There is no significant difference on the mean responses of male and female students on the extent of challenges experienced during CBT Jamb examination.

**Table 4:** t-test of mean difference of male and female extent of challenges during CBT Jamb examination

Variable	N	X	SD	DF	Sign level	t-calc	t-table	Decision
<b>Males</b>	192	2.80	0.2465	348	0.05	0.2391	1.96	Not significant
<b>Females</b>	158	2.86	0.3225					

From the result presented in table 4, the calculated t-value at 348 degree of freedom and 0.05 level of significance is 0.239. Since the calculated t-value is less than the critical table value of 1.96, the null hypothesis is therefore accepted.

## 5. Discussion

From the findings and analyses given in the above tables, it is evident that Senior Secondary School Students experience myriad of challenges which affect their academic performance during CBT Jamb examination. No wonder, year after year JAMB records geometric progression in the population of applicants for the examination. Unfortunately, some students' poor performance resulting from these challenges led to unending repeat of JAMB examination. Some students also sat for JAMB examination up to seven times consecutively without making any head way for tertiary institution admission. Thus, the development depicts that the need to address the challenges impinging students' academic performance is imperative. Hence, Nwana (2007) suggested that, before there can be test validity, there must be test civility, which



connotes the degree to which the conditions under which candidates are made to take an exam or test is devoid of challenges which can affect candidates performance in the test.

The above corroborates with the findings in table 1 where the challenges of dysfunctional computers, hindrance of saver shut down, noticeable computer illiteracy among others received high extent level of challenges. The responses of the participants indicate that JAMB with the assistance of the federal government has an important role to play so as to ensure enabling environment for CBT JAMB examination. Failure to address the problem, positions the efforts of the government in using CBT Jamb examination to test validity null and void as well as an effort devoid of testing civility.

None of the items had very high extent (VHE) response. This indicates that Nigeria is on course in advancement of ICT for CBT Jamb examination. However, the country is yet to attain the global acceptable pedestal with technological advanced driven societies.

Similarly, Table 2 shows that none of the responses had a mean score below 2.50 except item 8. This depicts that there is high extent to which epileptic power supply affect the academic performance of students who sat for CBT Jamb examination in 2018. The pertinent question here is: for how long shall the government of this country tap from the natural endowment such as abundant supply of solar energy in our midst? Time has come for the country to down play over reliance on monolithic economic structure whereby energy generation is sourced from fuel. Instance of rectification of power supply in an examination centre that led to the commencement of 2018 CBT Jamb examination slated for 8a.m that began by 5p.m in Anambra State could better be imagined. The tension, untold hardship, boredom experienced by the students definitely affected the performance of the candidates. Asides, the parents definitely waited endlessly for the return of their wards with unexplainable heartache. In addition, the challenge of epileptic and intermittent power supply to a high extent hindered some students from completing their questions during the 2018 CBT Jamb examination. This implies that there is dearth of computer facilities during CBT Jamb examinations. The report of the findings of Ololube, Ubogu & Egbezor (2007) concurred with the stance that ICT infrastructures and facilities are not available.

From the researcher's point of view, students who do not complete their questions in CBT Jamb examination definitely stand the chance of performing poorly. Therefore, any attendant distraction which may engender such a problem must be nipped from the bud, for credible performance of students to ensue.

Table 3 reveals that students experience to a high extent other attendant challenges that mar their efforts towards credible performance in 2018 CBT Jamb examination. Indication shows that all the items had mean of above 2.50 except item 20. This further implies that proximity to examination centers, time constraint, students' socio-economic background, unfriendly attitude of some invigilators among others hinder to a high extent the performance of students at CBT Jamb examinations. There is no gainsaying that the use of CBT in conducting JAMB examinations benefits the country and widens the horizon of technological development. However, for the

alignment of Nigerian students to other technological driven world, these intractable challenges that encumber the credible performance of students in CBT Jamb examinations must be addressed, if not completely solved. To ones dismay, the progressive population of entrants each year for CBT Jamb examination in Nigeria is an ill wind the blows no one any good.

Gender as shown in the result on hypothesis one has no significant effect on the academic performance of senior secondary school students for 2018 CBT Jamb examination. This implies that government provisions at all the CBT Jamb examination centers are the same, and devoid of gender affiliation.

The result also indicates that there is no significant difference between the mean ratings of the opinion of respondents on the extent of challenges experienced by male and female students during 2018 CBT Jamb examination. This implies that the challenges cut across board and defies gender barrier. This might be because of the fact that the accessibility of government provisions for CBT Jamb examination is same for all irrespective of gender differences.

## 6. Conclusion

Based on the findings of the research, the following conclusions were drawn:

There is high extent of challenges experienced by students during the 2018 CBT Jamb examination in Anambra State. Dearth of computer facilities, infrastructural challenges, epileptic power supply leading to malfunction of computers, unfriendly attitude of examiners, proximity of examination centers among others affect the academic performance of students in the examination.

The findings of the study show that JAMB and Nigerian government's effort in the conduct of CBT Jamb examination have not creditably considered test civility which will yield credible test validity. Generally, there is high extent of challenging factors that impair the performances of students in CBT Jamb examinations. When these challenging situations are properly handled, students will perform well and have better results in JAMB examinations, the teeming population of CBT JAMB entrants will trim down, thereby reducing the attendant viral vices leached on the society by frustrated students who had repeatedly recorded failure in CBT JAMB examinations.

### 6.1 Recommendations

- A triple approach to addressing the challenges facing candidates for CBT Jamb examination will involve, adequate exposure of students to ICT usage in the course of their learning interaction in secondary schools, the teachers/examiners, should be provided with computer exposure and the government should adequately enhance the needed provisions.
- Extensive use of solar energy and conversion of cellophane bags with other non-degradable wastes littering our environment to renewable power supply/energy generation which will drastically reduce the problem of epileptic power supply.

Governments' effort in this regard will enhance students' performance in CBT Jamb examinations subsequently.

- JAMB in collaboration with the government should revisit their method of posting students to examination centers, time allocation and re-training the examiners on the expected cordiality expected between them and the examinees.

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