

The Joint Admission and Matriculation Board Examination, Transition from Paper and Pencil to Computer Based Training

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Abstract. *The Joint Admission and Matriculation Board which are in charge of admission into the tertiary institution has introduced several significant changes to its admission policies, focuses on regulating student matriculation, enhancing transparency through the technology and strengthening the Central Admission Process System (CAPS). However, the Federal Government, via Minister of Education, has mandated an 18years minimum for admission into the tertiary institution, with minimum cut-of marks of 140 for universities and 100 for polytechnics, Colleges of education, and Colleges of health. All admissions must go through the JAMB CAP Portal. The digital system acts as the sole, official mechanism for admissions, replacing manual processes and reducing fraud.*

Key words: *Joint Admission and Matriculation Board Examination (JAMB), Computer Based Training (CBT) & Central Admission Process System (CAPS).*

Introduction

In Nigeria, the mandate to conduct entrance examination into tertiary educational institutions (Universities, Polytechnics, Colleges of Education and related/similar institutions) is vested in a body called Joint Admissions and Matriculation Board (JAMB). Thus, every year, JAMB conducts Unified Tertiary Institution of choice for selection and admission. Over the years, UTME by JAMB has been paper and pencil tests (PPT) form, and has been characterized by a lot of fraudulent practices ranging from leakage of examination papers, use of machineries of all sorts by candidates, bribe taking by examination officials, impersonation, use of unauthorized gadgets [1][2].

However, to eliminate these problems JAMB changed the way it conducts its examination from paper-based testing to Computer Based Testing (CBT) in 2013 which gave way to total eradication of breaches of examination security, unbiased test administration, reduction in spite of examination security breaches, and improvement in the quality and standard of education [3][4].

Meaning of JAMB

JAMB is a government examination body established in 1978 to conduct entrance examination (UTME), regulate admission into Nigerian tertiary institutions, ensure fairness in the admission process. It serves as an official entrance examination board for all tertiary level institutions, conducting unified Tertiary Matriculation examination (UTME), to assess candidates for admission

into Universities, Polytechnics, and Colleges of Education. For instance, if a student in River state want to study Accounting at UNIPORT, the student must first write JAMB [5][6].

Meaning of CBT (Computer-Based-Testing)

Is an assessment method where examination are delivered, taken and often graded electronically using computer or digital devices rather than paper and pencil. Such a test can be conducted online using the internet or a computer aided facility. Questions papers are on computer screen, candidate will click their answers using a mouse, time is been controlled automatically and, the computer marks the examination, this method was adopted in 2015 [7][8].

Example: Instead of shading answer on paper with pencil, candidate click A, B, C or D on the screen

Types of Computer Based Test

- Objective type: This test has Multiple Choice Questions (MCQ) or True/false options
- Subjective type: Candidate type answers in essay format or upload files.

Methodology

This study used a descriptive research design to explore the process of transition of the Joint Admissions and Matriculation Board (JAMB) examination from Paper-and-Pencil Testing (PPT) to Computer-Based Testing (CBT) in terms of policies, implementations, operations, and outcomes. Methodology This study utilized secondary data from policy documents, JAMB official guidelines, as well as literature on examination reforms and digital assessment systems. Design Setting and Participants This study used a systematic review and content analysis of previously documented evidence regarding aims, structure and functioning of the CBT system. Special focus was paid on polar aspects like the procedures of candidate registration, biometric authentication, mode of examination delivery, automated processing of results, benefits and limitations of use of CBT. It also reviewed statistical reports, documented cases of examination malpractice, System failures and trends in candidate performance to draw conclusions on whether CBT to have any effect on transparency and avoiding irregularity. Findings were organized thematically around policy goals, implementation mechanisms, advantages, and challenges to enable a thicker description of the reform. Lastly, a comparative analysis was used to compare the previous PPT system with the current CBT method on the basis of efficiency, security, and reliability. Ultimately, validity was ensured by utilising credible academic and policy sources, while consistency was maintained through triangulating a selection of different reports. This methodology allow an all encompassing review of the examination administration nature of the Jamb CBT policy in the context of national education development.

Result and Discussion

Why did JAMB introduce CBT?

The Joint Admission and Matriculation Board (JAMB) transitioned to Computer-Based Testing is to combat rampant examination malpractice, such as cheating, result fabrication, and the use of miracle center [9].

Before CBT, JAMB used paper and pencil examination, that system had many problems especially

- 1) Examination malpractice: Students cheated by copying or bringing foreign materials, some candidates smuggled micro-chips or received answers from outside the hall

- 2) Questions leakage: Examinations questions were sometimes leaked before the examination date
- 3) Delay in Results: results took weeks to be released.
- 4) High cost of printing and transporting millions of question papers was expensive.
- 5) The paper-pencil mode of conducting the examination was reported characterized by massive irregularities and inefficiency (Sann and Mohammed 2015).

To solve these problems, JAMB introduced Computer Based Testing.

Objectives of JAMB CBT Policy

The main objectives of adopting CBT include reduction of examination malpractice, minimizing impersonation, copying, leakage of question papers and fraudulent registration. Following the successful testing in 2013 and 2014 and has since been expanded to include more centers to improve access, particularly for candidates in remote areas.

How JAMB CBT System Works

JAMB's CBT is an electronic examination system using 180 questions across four subjects (60 for English, 40 each for others) in 120 minutes. The CBT system work as follows [10]:

1) Registration:

Candidates register online and choose a CBT centre

2) Biometric Verification

On exam day, fingerprint verification confirms identity, this prevents impersonation.

Example: If someone else tries to write the exam for a candidate, the fingerprint will not match.

3) Computer-Based Examination

- (i) Questions appears on screen,
- (ii) Each candidate receives different questions
- (iii) There is a countdown timer,
- (iv) When time finishes, answers are submitted automatically

4) Automatic Marking

The system mark's objective question instantly

Example: If a student scores 250, the computer calculates it immediately

Key Features of JAMB CBT Policy

Accreditation and Biometric

- (i) Verification: candidates are verified using biometric finger print scanning before being allowed to site for the examination.
- (ii) CCTV cameras in centers

- (iii) Randomized questions
- (iv) Strict timing control
- (v) Electronic result processing

Advantages of CBT

1. **Faster result:** The marking and the release of the examination results has been computerized and results are released within matter of hours after sitting for their respective examinations results.
2. **Reduced cheating / corruption:** Biometric and random question reduced examination malpractice, reshuffling of question type and candidate seat number in. JAMB introduced a customized answer sheet in 1994 on which candidate's examination numbers and subject type are reprinted
3. **Environmental friendliness (less paper use).** The Test is generally for convenience with better-equipped centres that provides a comfortable and consistence environment
4. **Accuracy:** Results are calculated instantly by the computer eliminating human error in marking and allowing for faster released of results
5. **Cost saving:** Less money spent on printing
6. **Better management and storage.** The digital time helps candidates monitor their pace ensuring they spent appropriate time on questions
7. **Promote computer literacy:** Students learn basic ICT skills.

Examples: Many rural students learned how to use mouse because of JAMB CBT

Challenges of CBT

Jamb CBT challenges particularly highlighted by the 2025 examination, include several technical glitches (system freezes, login issues) unstable power supply at centers, network failures and insufficient ICT infrastructure with over 379,000 candidates requiring a re-sit due to error in 157 centres. Other issues include [11][12]

- (1) **Network failure:** Sometimes system hang during examinations because of network problem.
- (2) **Power problems:** Poor electricity can disrupt examinations
- (3) **Computer illiteracy:** Some candidates are not familiar with computer

Examples: A candidate may know the answer but waste time trying to use the mouse.

- (4) **High anxiety due to strict biometric verification**
- (5) **Poor internet connection:** High cost of setting up centers

Computer, internet, generators and CCTV are expensive

These issues resulted in missed opportunities, with over 75% of candidate often scoring below 200 according to the recent 2024/2025 data [13][14][15].

Measures to Improve CBT Administration

- (1) Arrive early at examination centre
- (2) Follow all examination rules

- (3) You must understand digital examination system
- (4) School must teach computer literacy early
- (5) Government must invest in ICT infrastructure/ stronger network infrastructure.
- (6) Educational policies must ensure fairness and access.
- (7) Regular training for CBT center staff
- (8) Adequate monitoring and supervision
- (9) Computer literacy programmes in secondary schools
- (10) Strict penalties for malpractice.

Conclusion

Before CBT, JAMB used Paper and Pencil Test (PPT). Dual-Based Test (DBT) (a combination of paper and computer) which was established in 1978.

However, these systems were associated with examination malpractice, question leakages, result manipulation and logistic challenges in distributing question papers.

The introduction of CBT by JAMB in 2015 is a major reform in Nigeria's examination system, it has improved transparency, reduced malpractice, increases speed of result release. However, challenges such as network issues and computer illiteracy still need attentions. CBT represents the future of examination in Nigeria.

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