# Computer-Based Assessment: Application, Prospects and Challenges in Nigeria.

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***Abstract***
*This study provides positional (non-empirical) information on computer-based assessment, its application, prospects and challenges in Nigeria educational system. The method used for the study is literature analysis from relevant journals, conference papers and internet resource materials. Challenges such as inadequate ICT infrastructure, poor power supply, students/candidates inadequate skills in ICT among others were identified. The prospects of CBA were found to be very high owing to its wide acceptance and usage by government agencies and multinational co-operate bodies for public examination. The study recommended that government should provide ICT facilities/centres in all the local government areas of the country as well as provide alternative power supply for their usage so as to ease the long awaited transition from Pencil and Paper Assessment (PPA) to Computer Based-Assessment (CBA).*

***Keywords:*** *Computer- base assessment, application, prospects, challenges, ICT, examination, infrastructure.*

## Introduction:

For a very long time, until the arrival of computers, paper based tests were the only methods available to educators and instructors who jotted down a set of questions on a paper and then distribute these papers to learners, wait for them to complete and submit the test before the instructors can grade the tests, write feed back and prepare reports. It was a time consuming activity until when technology based assessment systems arrived that the ideas of pen and paper became redundant and slowly gave way to a better, move effective system of assessment (Ojerinde, 2015).

Online assessment in education is vital since a single set of tests or assessments can be attempted on many devices at the same time. The answers can be automatically graded and the responses are scored in auto generated report. The offline test, though a single set of test cannot be taken on two devices simultaneously; the responses are stored in a data base, the grades are assigned manually and the report are prepared much later. As powerful and as ideal computer based assessment has been, however, it has been based on the assumption that testees demonstrate what they know and can do, but construct-irrelevant factors such as disengagement, test anxiety, and cheating threaten the validity of inferences.

As argued by several researchers Greiff, Schever and Kirschner (2017); Koedinger, Stamper, McLaughlin and Nixon (2013), these "micro-level" computer-based assessment studies can provide a rich, integrated understanding of how learners engage with particular learning activities. For example, in a study of 1476 Finland children completing nine complex problems, Greiff (2016), found that there was an optimal level of effort spent on these tasks and consecutive performance, as well as a negative relation between the frequency of changes made in learning strategy and performance. In particular, linking what students are doing on a fine-grained level with what teachers are expecting students to do may help to inform how to improve computer-based assessment practice.
The main purpose of this study is to:

- Investigate the extent of application of CBA in Nigeria educational system.
- Determine the prospects of CBA in Nigeria educational system.
- Highlight some challenges of CBA in Nigeria educational system.

For the past five year, JAMB UTME examination (University matriculation Examination) has been conducted using CBA. This new method of assessment has reduced the rate of examination malpractices among students/candidate to the minimum. Also, major government co-operations such as Nigeria Immigration service, Nigeria Custom service, Nigerian Police, etc now adopt CBA in the recruitment and promotion exercises. This is a clear indication that CBA has come to stay.
It is also interesting to know that the federal government is making plan to build and equip CBT centres in each local government area of the federation. The former Minister of Education, Mallam Ibrahim Shekarau said that the JAMB CBT centre at Kogo, Bwari in federal capital territory is a world class centre; and every state and local government will have that kind of centre in years to come, (Okoronkwo, 2015). With facilities such as computers, power generating set, internet access, skilled manpower, etc being in place, the prospect of CBA is very high in Nigeria. Establishment of functional ICT centres in higher institutions by the federal government through TET FUND and corporate organization is yielding positive result as those centres serve as backbone to the JAMB's UTME CBA resources.

According to Vanguard (2019) "The Teachers Registration Council of Nigeria (TRCN), says that 69,231 prospective teachers will write the 2019 Professional Qualifying Examination (PQE), scheduled to hold Oct. 11 and 12, across the country. Prof. Josiah Ajiboye, TRCN Registrar, announced this in a press conference in Abuja on Wednesday. Ajiboye said that the PQE assessment introduced by TRCN in 2017 qualifies the prospective teachers to practice.
"Teachers from the 36 states, including FCT, will converge on 45 different Computer-Based Test (CBT) centres to sit for the examination. Ajiboye said that Oyo State had the highest entrants with 5145 persons, followed by Lagos with 5117, Kaduna, 4616, FCT, 4414 and Plateau, 3079.

The indication and implication of the above data is that there is an average of almost

2,000 testees from each state; average of about 1,700 testee per centre, and knows the average of testees per computer suffice it be say, therefore, that whereas the attempt is made to apply CBA, infrastructure is grossly in adequate.

**Application of Computer Based Assessment in Nigeria Educational System**

Computer and technology have impacted almost every industry across the globe. One specific area that has experienced substantial change is the education industry. The pace at which the process of teaching, assessing and learning has evolved is enough to signify the impact. Books have moved to e-books, physical classrooms have turned into online classrooms, and paper based tests have become online tests.

**Prospects of Computer Based Assessment in Nigeria Educational System**

Computer-based test offers several benefits over traditional paper-and-pencil or paper-based assessment can be used to:

- promote more effective learning by testing a range of skills, knowledge and understanding;
- measure complex form of knowledge and reasoning that is not possible to engage and assess through traditional method;
- conduct aptitude test for their job seekers;
- register and conduct electronic examination for students through the internet and other electronic and networking gadgets e.g. WAEC, NECO, UTME and JAMB.

**Challenges of Computer Based Assessment (CBA) in Nigeria**

Fagbola et al. (2019) opined that lack of poor standardized CBA development model undermines the success of e-examination. Baker-Eveleth et al. (2006) also stated that complementing computer examinations requires a secure environment that will not allow the student to seek for answers by scanning through their phone hand drives or sending of instant messages to their friend or even browse the internet. Moreso, Fluck et al, (2009) opined that online assessment may not be considered effective for assessment of creativity problem solving ability, critical thing, etc. This is as a result of many problems associated with its usage.

Other major challenges militating against the full adoption of CBA usage are highlighted below:

- **Students/candidates inadequate skills in ICT**: In most schools today, students lack computer knowledge. This makes it difficult for the implementation of CBA in educational system.

- **Poor supply of electricity**: The erratic power supply in Nigeria poses a big threat to the full implementation of ICT in our schools. This problem affects schools located in cities and rural areas, making it difficult to use CBA in the conduct of standardized tests.

- **Inadequate ICT Infrastructure**: Much of the available ICT infrastructures are either obsolete or overstretched in terms of capacity, accessibility, reliability and

security.

- **Internet Accessibility**: The absence of internet facilities in rural areas makes it difficult for the full implementation of CBA in public examination of students in affected locations.

- **High cost of internet data and electronic services**: CBA being majorly dependent on data is difficult to implement due to high cost of data. Hence, posing a major challenge in ICT usage in assessment activities.

- **Integrity of examination managers**: The loyalty of the owners of private cyber-café were examination registration and administration take place outside government owned ICT centres cannot be attested for. Findings have shown that the owners of private ICT centres where examination are registered collaborate with proprietors of private schools to assist the candidates in carrying out examination malpractices during examinations. To ensure CBA that is not characterized by examination malpractices government should establish at least one ICT centre in each local government area and stop private operators from involving in examination registration and verification.

- **Acceptability**: Teachers who see themselves as transmitters of knowledge and would not want the students to be independent are threatened by this new development and resist any attempt to adopt it. Again, some school owners who lack fund to acquire such facilities also resist its uptake in educational system.

- **Poor government policy on the implementation of CBA**: Government unwillingness to enforce the use of only CBA in public examinations has made it difficult for its full adoption. Institutions of learning and government examining bodies will take the issue of CBA serious if there is a law backing it.

- **Lack of skilled manpower**: Many ICT instructors lack the required skill to impact ICT knowledge to their students. When there is no good instructors or teachers, knowledge transmission becomes a mirage.

**Conclusion**

The rampant examination malpractices with which Nigeria educational system is associated has made certificates acquired to be treated with disrespect and suspicion. Implementation of CBA in all public examinations will help to reduce cases of examination malpractices to barest minimum.

**Recommendations**

To combat the numerous challenges of the effective full implementation of CBA in Nigeria educational system, the following measures are herein recommended:

- Government at all levels should endeavour to encourage CBA by putting up and maintaining more e-libraries/centres;
- School at all levels should be mandated to have and operate effective ICT facilities

and use CBA consistently;

- Educators (proprietors/proprietress, teachers, school counselors, etc) should become computer literate and use same in instruction delivery and assessments.
- Parents/guardians should endeavour to have and maintain computers at home;
- Philantropists or politicians can upgrade their "chosen" communities' profiles by putting up and maintaining e-learning centres for the less privileged and adult literacy;
- Students at all levels should broaden their scope and interest with educational/civilization (not corrupt sites and programmes) ICT e.g their i-phones should be used to explore educative sites and programmes rather than vices.

**References**

Baker-Eveleth., L., Eveleth, D. M., O'Neill, M. & Stone, R. W. (2006). Helping Students Adapt to Computer- Based Encrypted Examinations. *Educause Quarterly*, 3, 41-46

Fagbola, T. M., Adiguu, A. A. & Oke, A. O. (2013). Computer-Based Test (cbt) System for University Academic Enterprise Examination. *International Journal of Scientific & Technology Research*, 2(8), 336-342

Greiff S. (2016). How do students engage with CBAs: Impact of Study breaks on intertemporal engagement and pass rates https://link.springer. com>article. behaviormetrika,October, 2018, volume 4J, Issue 2, pp. 597-614.

Greiff, S., Schever, R. & Kirschner, P.A. (2017). Some critical reflections on the special issue: current innovations in computer-based assessments. *Computer Human Behaviour*, 76(2017), 715-718.

Koedinger, K.R. Stamper, J.C., McLaughlin, E.A., & Nixon, T. (2013). Using data-driven discovery of better student modles to improve student learning. In H.C., Lane, K. Yacef, J. Moslow & P. Pavlik (Eds), Proceedings of the 16th International Conference on artificial intelligence in education (pp. 421-430). Berlin Heidelberg: Springer.

Ojerinde, D. (2015). Taking the shine off computer-based test. The Guardian Nigeria news-Nigeria and world news. Retrieved from: https://m.guardian.ng November 20, 2019.

Okoronkwo, C. (2015). Appraising JAMB's Computer-Base Test. NANFeature/9(93). Retrieved from: http://www.nnnewsnigeria.com/ November 20, 2019.

Sadiq, F.I. & Onianwa, C.U. (2011). Towards a scalable web Assessment system for post University Matriculation Examination in Nigeria. *African Journal of Computer & ICTS* , 4(2), 25-30.

Vanguard (2012). JAMB Computer based test in 2013: Stakeholders react.November 8 www.vanguardngr.com.