



PERCEPTIONS OF STUDENTS TOWARDS THE USE OF COMPUTER-BASED TEST (CBT) MODE OF EXAMINATION IN HIGHER INSTITUTIONS IN OSUN STATE, NIGERIA

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Abstract

The study examined perceptions of students towards the use of the Computer-Based Test (CBT) mode of examination in higher institutions in Osun State, Nigeria. A descriptive design of survey type was used. The study focused on 200-level students from the Faculty of Education at Osun State University (Ipetu Ijesa Campus) and the University of Ilesa, Ilesa. A total of 240 students were selected for the study through simple random sampling, 120 from each institution. Data were gathered using a validated and reliable structured questionnaire based on a four-point Likert scale, with a reliability coefficient of 0.79 confirmed through Cronbach's Alpha. Analysis was conducted using frequency counts, percentages, means, and standard deviations. The findings revealed that students found CBT to be useful, easy to use, credible, and preferable as a mode of examination. However, some challenges were also identified, particularly occasional technical glitches during examinations and inadequate ICT facilities in some centres. Based on these results, the study recommended, among others, regular government support for the procurement of ICT equipment in Nigerian universities.

Additionally, it emphasized the importance of employing qualified software engineers, computer engineers, and trained academic staff to support the development, implementation, and maintenance of CBT systems in higher institutions, thereby ensuring their effectiveness, reliability, and long-term sustainability.

Keywords: Computer-based test, perception, mode of examination, usefulness, ease of use, Higher Institutions.

Introduction

Education serves as the foundation for the growth and progress of any nation. In Nigeria, one of the pressing challenges is enhancing the essence of teaching and learning in tertiary institutions. Consequently, the issue of students' poor performance in examinations requires serious attention, as no country can advance without maintaining a strong educational standard. In recent years, the perception and approach to examinations and assessments in higher education have undergone a significant transformation. A key development has been the shift in how students and institutions view testing and evaluation processes. Computer-Based Testing (CBT) is a component of Information and Communication Technology (ICT), representing a modern, electronic approach to conducting and managing examinations. It utilizes computers, network systems, and web-based platforms to deliver and support testing more efficiently. The core idea behind CBT is connectivity linking computers in a network to share examination data and provide access to students. This framework, often referred to as the CBT architecture or landscape, encompasses the necessary hardware, software, and network infrastructure required to conduct tests effectively.

The pursuit and acquisition of knowledge stand out as one of humanity's most remarkable and essential social accomplishments. In many parts of the world, the traditional Paper-and-Pencil Test (PPT) remains the dominant method for evaluating students' academic abilities (Ebimgbo et al., 2021). However, this conventional approach presents several challenges, particularly when examinations involve a large student population. Common issues include the use of unauthorized materials during exams, copying from peers, duplicating answers, exchanging scripts, and manipulating or influencing grading outcomes (Oladimeji & Mwuese, 2018). Additionally, both teachers and students are prone to errors, and the method often incurs high financial and time costs (Khoshsima et al., 2017). To address these shortcomings, the adoption of Computer-Based Test (CBT) through the application of Information and Communication Technology (ICT) has transformed the operations of higher education institutions. This innovation has improved the teaching and learning process and enhanced the monitoring of students' academic progress through regular assessments (Ebimgbo et al., 2021).

The use of Computer-Based Tests (CBT) for student assessment has been gaining increasing global recognition over time (Hashemi, 2016). This innovative approach has

enabled many universities in the United States, as well as Bologna University in Germany, to not only conduct examinations but also effectively manage their academic programs (Bandari, 2014). In Australia, Kobal and Jiang (2018) noted that the implementation of CBT allows parents and guardians to monitor students' academic performance and access other related educational information. Although several African nations still lag behind developed countries in fully adopting CBT in the teaching and learning process, countries such as South Africa, Algeria, and Morocco are following Nigeria's lead in integrating ICT into their educational systems, supported by their growing technological infrastructure. Similarly, Cameroon, Ghana, Mauritius, Botswana, and several other African countries are also making significant strides in this direction (Bandari, 2014).

The widespread use of Computer-Based Testing (CBT) in Nigeria can be traced to its adoption in post-UTME screenings and main university examinations. According to Aliyu and Francis (2014), several institutions such as Osun State University, the University of Ilesa in Osun State, University of Ilorin, and the Federal University of Technology, Akure are actively utilizing CBT as a key tool for student evaluation. Although the exact origin of the term "CBT" within Nigeria's educational context remains unclear, it is believed to have emerged in the 1990s, coinciding with the rise of Information and Communication Technologies (ICTs). CBT represents a modern approach of electronic examination designed to assess students at specific academic levels in universities. It serves as a more advanced alternative to the conventional pen-and-paper testing method. Essentially, computer-based testing involves the use of computers and internet or intranet connections to administer assessments, providing a more efficient and technology-driven approach to evaluation.

CBT is a method of administering tests by examiners to students in which the responses are electronically recorded, assessed, or both. Computer-based tests offer several benefits over traditional paper-and-pencil tests. Some of these benefits are: lower long-term costs, administration and scoring efficiency, greater flexibility with respect to location and timing, improved reliability, improved test security resulting from electronic transmission and encryption, and increased candidate acceptance and satisfaction. Students perceived CBT to be useful, easy to use, and credible for their assessment (Solomon, Thomas & Adewale, 2022). The implication of this is that students now prefer CBT to other forms of examination despite the fact that there are some constraints, such as students' exposure to unfavourable conditions like queuing in the sun. Engaging in CBT examination will also enhance their computer skills and innovation. CBT is a type of Electronic Examination that is used to examine students at certain levels of the University. It is a more refined means of examination used in place of the usual pen-to-paper method. Moreover, a computer-based test is an assessment of students with the use of a computer and the internet or intranet, as the case may be, as an alternative method to pen and paper.

Adoption of ICT: Strong ICT adoption creates an environment where CBT systems can be effectively deployed, minimizing technical disruptions and enhancing the quality of digital assessments. CBT Implementation → Students' Perception: When CBT systems are well implemented with adequate ICT support and training, students perceive CBT as useful, credible, and easy to use. ICT Adoption → Students' Perception: ICT readiness (skills, infrastructure) directly influences how students perceive CBT, as students with higher ICT literacy are more confident and positive about digital testing.

Schematically, ICT Adoption (infrastructure, digital literacy, readiness) → influences → CBT Implementation (system reliability, user support, ease of use) → shapes → Students' Perception (usefulness, credibility, satisfaction). This pathway illustrates that students' acceptance and positive perception of CBT are not standalone outcomes but are contingent upon how effectively ICT is adopted and integrated into assessment practices in Nigerian educational institutions.

Adeyanju and Adeshina (2018) examined Students' perceptions of computer-based tests in Nigerian universities. The study used a descriptive survey design; a structured questionnaire was administered to 1,506 undergraduate students. The study found that students perceived CBT as useful, particularly for quick feedback, reduced examination malpractice, and convenience. 64.3% of respondents reported high perceived usefulness. Shobayo, et al. (2022). Perceived effectiveness of computer-based test (CBT) mode of examination among undergraduate students in South-Western Nigeria. Inter: Descriptive survey research design was employed; questionnaire distributed to 800 undergraduate students; data analysed using descriptive statistics (mean, percentage). The findings revealed that most students perceived CBT as effective and useful for ensuring fairness and time-saving in examinations.

Adeyanju and Adeshina (2018) employed a descriptive survey design and used a structured questionnaire administered to 1,506 undergraduate students from four Nigerian universities. The researchers measured "ease of use" alongside other constructs and found a mean positive rating of 66.1% for ease of use, indicating generally favourable perceptions of computer-based testing. Ogunjimi and Aremu (2024) examined undergraduate students' perceptions of the use of computer-based tests (CBT) for learning assessment in Ilorin, Nigeria. The study adopted a descriptive survey design and employed a multistage sampling technique to select 600 undergraduate students from three universities. Data were collected using a self-constructed questionnaire with a Cronbach's alpha of 0.83, indicating good reliability. The data were analysed using descriptive statistics, t-tests, and ANOVA. Findings revealed that students generally held positive perceptions of CBT for learning assessment, although preferences between CBT and paper-based testing were implied rather than directly measured as a primary outcome.

Shobayo et al (2022) investigated the perception of effectiveness of the computer-based test (CBT) mode of examination among undergraduate students in South-Western Nigeria. Using a descriptive survey design, questionnaires were distributed to 800 undergraduates in private universities across the region. Data were analysed using percentages, frequencies, rankings, and the Relative Significance Index (RSI). Findings indicated that CBT reduces the printing of question papers and answer booklets, saves time, and minimizes manpower requirements during the administration of the test.

Usman and Olaleye (2022) explored the effect of computer-based test (CBT) examination on learning outcomes of students in colleges of education in Nigeria. The study adopted a descriptive survey design with a population consisting of NCE students and lecturers at the Federal College of Education (Special), Oyo. A sample of 211 respondents (200 students and 11 lecturers) participated. Data were collected through structured questionnaires and analysed using descriptive statistics. The results showed that CBT positively influences students' learning outcomes, particularly by enabling the management of large student populations and improving examination logistics. Adeyanju and Adeshina (2018) studied students' perceptions of computer-based tests in Nigerian universities at the University of Ibadan. The research employed a descriptive survey design and involved 1,506 undergraduate students from four Nigerian universities. Key issues identified included irregular power supply, inadequate computer systems, poor network connectivity, and technical hitches during examinations, which were major challenges affecting students' CBT experiences.

Considering these arrays of benefits, it is imperative to research into how the Faculty of Education at Osun State University (Ipetu Ijesa Campus) and the University of Ilesa students perceived CBT and to evaluate their attitude towards CBT to have the correct picture of how they feel and probably suggest a way forward to the management to improve the conduct, if any.

Statement of the Problem

In recent years, many higher institutions in Nigeria, including those in Osun State, have adopted Computer-Based Test (CBT) modes of examination as a means of improving the efficiency, transparency, and timeliness of the assessment process. This shift from traditional paper-and-pen examinations to digital platforms is intended to address challenges such as examination malpractice, delayed release of results, and administrative bottlenecks. However, despite the perceived benefits, the implementation of CBT has not been without challenges. Many students still express varying levels of discomfort, anxiety, and distrust towards the system, often citing issues such as inadequate computer literacy, technical glitches, limited access to computer facilities, and fear of system failures. These perceptions can significantly influence students' performance and attitudes towards the examination

process. Furthermore, disparities in exposure to technology among students from different backgrounds may widen performance gaps and affect the overall effectiveness of CBT. While CBT is increasingly becoming the standard mode of assessment in higher institutions, there is limited empirical evidence on how students in Osun State perceive this examination method. Although previous studies on CBT in Nigeria have largely focused on its implementation, technical efficiency, and general acceptance in national examinations, they have not sufficiently examined students' perceptions of its usability, credibility, and overall examination experience within specific institutional contexts such as universities in Osun State. This creates a knowledge gap regarding how students' attitudes, technological readiness, and examination experiences influence the effectiveness and acceptance of CBT in these institutions. Without a clear understanding of students' perceptions, it becomes difficult for educational institutions to address concerns, improve the system, and ensure fair and effective assessment for all learners. This study, therefore, seeks to examine the perceptions of students towards the use of the Computer-Based Test (CBT) mode of examination in higher institutions in Osun State, Nigeria, in order to identify the key factors influencing their attitudes, experiences, and overall acceptance of the system.

Research Questions

This study attempted to answer the following questions:

1. What is the perceived usefulness of the CBT mode of examination by undergraduate students in higher institutions in Osun State?
2. What is the perceived ease of use of the CBT mode of examination by undergraduate students in higher institutions in Osun State?
3. To what extent do undergraduate students in higher institutions in Osun State?
4. What are the benefits of the CBT mode of examination by undergraduate students in higher institutions in Osun State?
5. What are the challenges encountered by students in the CBT mode of examination by undergraduate students in higher institutions in Osun State?

Methodology

The design adopted for this study was a descriptive design of survey type. The choice of this design was that it focuses on eliciting information from respondents' opinions, beliefs, and behaviour. The population of the study comprises all undergraduate students in Osun State University (Ipetu Ijesa Campus) and the University of Ilesa, Ilesa, Osun State. The sample for the study consisted of two hundred and forty (240) undergraduate students. The sample was selected using simple random sampling techniques. Two higher institutions were selected for the study, Osun State University (Ipetu Ijesa Campus) and the University of Ilesa, Ilesa, Osun State, using a simple random sampling technique. One hundred and twenty (120)

students were then selected from each university using a simple random sampling technique. The instrument for data collection for this study was the questionnaire on CBT Mode of Examination (QCBTME). The QCBTME items were constructed to answer all the research questions raised. The QCBTME comprised of two sections: Section A and Section B. Section A consisted of bio-data of the respondents which include the name of school, gender, department, Course of Study, and level while section B contained twenty-five (25) structured question items on students' perceptions of computer-based tests (CBT) in universities with a rating scale of Strongly Agree (SA) – 4, Agree (A) - 3, Disagree (D) – 2, Strongly Disagree (SD) -1.

The QCBTME items were subjected to face and content validity by two lecturers from the department of Science, Technology and Mathematics Education (STME) and one lecturer from the Test and Measurement Department of the University of Ilesa. All comments and corrections were incorporated into the final form of the instrument. Cronbach Alpha was used to determine the reliability of the instrument, which was established at 0.79. On the basis of the high index, the instrument was considered reliable and suitable for conducting the research.

The administration of the instrument was done in two weeks with the help of two research assistants for the administration and retrieval of the instrument. One hundred and twenty (120) questionnaires were administered in each higher institution. Hence, a total number of two hundred and forty (240) questionnaires were administered across the sampled school. The data generated for this study were analysed using descriptive statistics. The questions raised were answered using frequency count, percentage, means, and standard deviation.

Results

Research Question 1: What is the perceived usefulness of the CBT mode of examination by undergraduate students in higher institutions in Osun State?

Table 1: Descriptive Analysis of the perceived usefulness of the CBT mode of examination by undergraduate students in higher institutions in Osun State

<i>S/N</i>	<i>Perceived usefulness of the CBT mode of examination by undergraduate students in higher institutions in Osun State</i>	<i>SA (%)</i>	<i>A (%)</i>	<i>D (%)</i>	<i>SD (%)</i>	<i>Remark Tended towards</i>
<i>1</i>	CBT helps me to complete my examinations more quickly and efficiently.	4 (1.7)	210 (87.5)	13 (5.4)	13 (5.4)	Agree

2	I believe CBT improves the accuracy of examination grading and results.	226 (94.2)	1 (0.4)	13 (5.4)	0.00	Agree
3	CBT provides immediate feedback, which enhances my learning experience.	108 (45.0)	120 (50.0)	12 (5.0)	0.00	Agree
4	Using CBT contributes positively to my overall academic performance.	120 (50.0)	120 (50.0)	0.00	0.00	Agree
5	CBT reduces examination malpractice compared to paper-based tests	120 (50.0)	120 (50.0)	0.00	0.00	Agree

Table 1 identified the perceived usefulness of the CBT mode of examination by undergraduate students in higher institutions in Osun State. Using a cut-off mean of 2.50 for the rating scale. All the respondents agreed on the usefulness of the CBT mode of examination by undergraduate students in higher institutions in Osun State. It indicates that there is usefulness of the CBT mode of examination by undergraduate students in higher institutions in Osun State.

Research Question 2: What is the perceived ease of use of the CBT mode of examination by undergraduate students in higher institutions in Osun State?

Table 2: Descriptive Analysis of the perceived ease of use of the CBT mode of examination by undergraduate students in higher institutions in Osun State

S/N	Perceived ease of use of the CBT mode of examination	SA (%)	A (%)	D (%)	SD (%)	Remark
6	CBT platforms are easy to navigate during examinations.	120 (50.0)	108 (45.0)	12 (5.0)	0.00	Agree
7	I find it easy to follow the instructions provided on CBT interfaces.	120 (50.0)	120 (50.0)	0.00	0.00	Agree
8	I can complete CBT examinations without needing much assistance.	108 (45.0)	120 (50.0)	12 (5.0)	0.00	Agree
9	CBT examination procedures are simple and clear to me.	108 (45.0)	120 (50.0)	12 (5.0)	0.00	Agree
10	I feel confident using computers for CBT examinations.	120 (50.0)	120 (50.0)	0.00	0.00	Agree

Table 2 identified the perceived ease of use of the CBT mode of examination by undergraduate students in higher institutions in Osun State. Using a cut-off mean of 2.50 for the rating scale. All the respondents agreed on the ease of use of the CBT mode of examination by undergraduate students in higher institutions in Osun State. It indicates that there is ease of use of the CBT mode of examination by undergraduate students in higher institutions in Osun State.

Research Question 3: To what extent do undergraduate students in higher institutions in Osun State prefer the CBT mode of examination?

Table 3: Descriptive Analysis of the extent to which students prefer the CBT mode of examination by undergraduate students in higher institutions in Osun State

<i>S/n</i>	<i>The extent to which students prefer the CBT mode of examination by undergraduate students in higher institutions in Osun State</i>	<i>SA (%)</i>	<i>A (%)</i>	<i>D (%)</i>	<i>SD (%)</i>	<i>Remark Tended towards</i>
11	I prefer CBT examinations to paper-based examinations.	120 (50.0)	120 (50.0)	0.00	0.00	Agree
12	I feel more comfortable taking tests through CBT than with paper.	185 (77.1)	28 (11.7)	19 (7.9)	8 (3.3)	Agree
13	I would choose CBT if given an option between CBT and paper-based tests.	108 (45.0)	120 (50.0)	12 (5.0)	0.00	Agree
14	I believe CBT examinations are more convenient than traditional methods.	192 (80.0)	12 (5.0)	12 (5.0)	24 (10.0)	Agree

15	I perform better in CBT examinations than in paper-based ones.	16	218	3	3	Agree
		(6.6)	(90.8)	(1.3)	(1.3)	

Table 3 identified the extent to which students prefer the CBT mode of examination by undergraduate students in higher institutions in Osun State. Using a cut-off mean of 2.50 for the rating scale. All the respondents agreed that students prefer the CBT mode of examination in higher institutions in Osun State. It indicates that there is a preference for the CBT mode of examination by undergraduate students in higher institutions in Osun State.

Research Question 4: What are the benefits of the CBT mode of examination for undergraduate students in higher institutions in Osun State?

Table 4: Descriptive Analysis of the benefits of the CBT mode of examination by undergraduate students in higher institutions in Osun State

S/n	The benefits of the CBT mode of examination by undergraduate students in higher institutions in Osun State	SA (%)	A (%)	D (%)	SD (%)	Remark
16	CBT reduces the time spent on examination administration and marking.	120 (50.0)	120 (50.0)	0.00	0.00	Agree
17	CBT allows for a faster release of examination results.	3 (1.3)	233 (97.0)	3 (1.3)	1 (0.4)	Agree
18	CBT helps conserve resources like paper and printing materials.	120 (50.0)	120 (50.0)	0.00	0.00	Agree
19	CBT makes large-scale examinations more manageable.	0.00	240 (100.0)	0.00	0.00	Agree
20	CBT promotes fairness and objectivity in grading.	231 (96.2)	3 (1.3)	4 (1.7)	2 (0.8)	Agree

Table 4 identified the benefits of the CBT mode of examination by undergraduate students in higher institutions in Osun State. Using a cut-off mean of 2.50 for the rating scale. All the respondents agreed on the benefits of the CBT mode of examination by undergraduate students in higher institutions in Osun State. This indicates that there are benefits of the CBT mode of examination by undergraduate students in higher institutions in Osun State.

Research Question 5: What are the challenges encountered by students in the CBT mode of examination by undergraduate students in higher institutions in Osun State?

Table 5: Descriptive Analysis of the challenges encountered by students in the CBT mode of examination by undergraduate students in higher institutions in Osun State

<i>S/N</i>	<i>The challenges encountered by students in CBT mode of examination by undergraduate students in higher institutions in Osun State</i>	<i>SA (%)</i>	<i>A (%)</i>	<i>D (%)</i>	<i>SD (%)</i>	<i>Remark</i>
21	Irregular power supply affects the smooth running of CBT examinations.	4 (1.7)	202 (84.2)	19 (7.9)	15 (6.3)	Agree
22	Inadequate computer systems make it difficult for all students to take CBT at once.	205 (85.4)	15 (6.3)	8 (3.3)	12 (5.0)	Agree
23	Poor internet or network connectivity disrupts my CBT examination experience.	28 (11.7)	173 (72.1)	24 (10.0)	15 (6.3)	Agree
24	Technical glitches during CBT examinations increase my anxiety.	112 (46.7)	100 (41.7)	20 (8.3)	8 (3.3)	Agree
25	Limited computer skills among some students create additional challenges during CBT.	72 (30.0)	80 (33.3)	44 (18.3)	44 (18.3)	Agree

Table 5 identified the challenges encountered by students in the CBT mode of examination by undergraduate students in higher institutions in Osun State. Using a cut-off mean of 2.50 for the rating scale. All the respondents agreed on the challenges encountered by students in the CBT mode of examination by undergraduate students in higher institutions in Osun State. This indicates that there are challenges encountered by students in the CBT mode of examination by undergraduate students in higher institutions in Osun State.

Discussion of the findings

The findings show that there is a usefulness of the CBT mode of examination by undergraduate students in higher institutions in Osun State. This is in agreement with that of Adeyanju, and Adeshina (2018) examined Students' perceptions of computer-based tests in Nigerian universities. The study found that students perceived CBT as useful, particularly for

quick feedback, reduced examination malpractice, and convenience. 64.3% of respondents reported high perceived usefulness. Analytically, this usefulness aligns with the Technology Acceptance Model, as students recognize CBT's value in improving their assessment experience. Quick feedback promotes timely academic improvement, while automated marking enhances transparency and reduces human error. Contextual field observations show that in institutions with large class sizes, CBT improves efficiency by speeding up result processing and reducing lecturer workload. Its structured format, legibility, and secure features also minimize examination malpractice and increase students' confidence in the fairness and credibility of the assessment process. Overall, students' perception of CBT usefulness reflects both its practical benefits and its alignment with the ongoing digital transformation in higher education.

The findings also show that there is ease of use of the CBT mode of examination by undergraduate students in higher institutions in Osun State. This is consistent with the submission of Adeyanju and Adeshina (2018), who examined students' perceptions of computer-based tests in Nigerian universities at the University of Ibadan. The researchers measured "ease of use" alongside other constructs and found a mean positive rating of 66.1% for ease of use, indicating generally favourable perceptions of computer-based testing. Analytically, this aligns with the Technology Acceptance Model, as students are more likely to adopt systems they find simple and user-friendly. Features such as clear instructions, easy navigation, and answer review options reduce cognitive stress and allow students to focus on the examination content. Contextual field observations indicate that increased digital literacy, regular use of online academic platforms, and exposure to mock CBT sessions contribute to this positive perception. However, consistent system design and adequate technical support are essential to sustaining the ease-of-use experience.

The findings further show that there is a preference for the CBT mode of examination by undergraduate students in higher institutions in Osun State. This is consistent with the submission of Ogunjimi and Aremu (2024), who examined undergraduate students' perceptions of the use of computer-based tests (CBT) for learning assessment in Ilorin, Nigeria. Findings revealed that students generally held positive perceptions of CBT for learning assessment, although preferences between CBT and paper-based testing were implied rather than directly measured as a primary outcome. Analytically, preference suggests a stronger level of acceptance, as students associate CBT with efficiency, fairness, and reduced physical stress. The objective format minimizes extensive writing, while automated marking enhances transparency and reduces grading errors. Contextual field observations show that increasing enrolment, faster result processing, structured digital interfaces, and reduced cases of missing scripts strengthen students' trust in CBT. However, preference may vary by discipline, with stronger support in courses that rely on objective

testing formats. Overall, the preference reflects a broader shift toward digitalized assessment practices in higher education.

The findings also show that there are benefits of the CBT mode of examination by undergraduate students in higher institutions in Osun State. This is consistent with the submission of Usman and Olaleye (2022), who explored the effect of computer-based test (CBT) examination on learning outcomes of students in colleges of education in Nigeria. The study adopted a descriptive survey design with a population comprising NCE students and lecturers at the Federal College of Education (Special), Oyo. A sample of 211 respondents (200 students and 11 lecturers) participated. Data were collected through structured questionnaires and analysed using descriptive statistics. The results showed that CBT positively influences students' learning outcomes, particularly by enabling the management of large student populations and improving examination logistics. Analytically, CBT enhances learning through timely feedback, encourages broader syllabus coverage, and supports evidence-based academic planning. Administratively, it improves efficiency by automating scoring, reducing lecturer workload, and managing large student populations. Contextual field observations indicate that CBT strengthens examination integrity, ensures organized testing environments, and aligns with global best practices. However, the full benefits depend on adequate infrastructure such as stable electricity, functional computers, and technical support. Overall, CBT contributes to both pedagogical improvement and institutional efficiency.

The findings also show that there are challenges encountered by students in the CBT mode of examination by undergraduate students in higher institutions in Osun State. This is consistent with the submission of Adeyanju and Adeshina (2018), who studied students' perceptions of computer-based tests in Nigerian universities at the University of Ibadan. The key issues identified included irregular power supply, inadequate computer systems, poor network connectivity, and technical hitches during examinations, which were major challenges affecting students' CBT experiences.

Analytically, these issues highlight that successful CBT adoption depends on infrastructure as much as student readiness. Power interruptions, system malfunctions, and limited devices increase stress, disrupt focus, and may affect performance. Contextual field observations indicate that limited funding, outdated hardware, and insufficient technical support exacerbate these problems, particularly for students with less digital experience. Overall, while CBT offers benefits, its effectiveness is constrained by institutional and technological preparedness.

Conclusion and Recommendations

Based on the findings of this study, it could be concluded that undergraduate students in Osun State find CBT examinations useful, easy to use, and preferable to traditional methods. They

value its benefits, including faster results, transparency, and reduced malpractice. However, challenges such as poor internet, power issues, limited computer skills, and technical faults affect its smooth implementation. Based on the findings, the following recommendations were made:

1. The services of qualified software engineers, computer engineers, and trained academic staff are needed to support the development, implementation, and maintenance of CBT systems in higher institutions, thereby ensuring their effectiveness, reliability, and long-term sustainability.
2. Higher institutions should organize periodic digital literacy and CBT training sessions for students and staff to improve their competence and confidence in using the system effectively.
3. Higher institutions should increase the number of CBT centres and ensure they are equipped with adequate computers and backup systems to accommodate more students and prevent delays during examinations.
4. Higher institutions should implement clear policies and gather regular feedback from students to identify areas for improvement, ensure fairness, and further increase students' preference and satisfaction with CBT.
5. Higher institutions in Osun State should invest in reliable power supply, stable internet connectivity, and modern computer facilities to enhance the effective use of CBT and address technical challenges.

References

- Adeyanju, O. L., & Adeshina, K. (2018). Students' perceptions of computer-based test in Nigerian universities. *University of Ibadan Journal of Library & Information Science*, 1(1), 15–27.
- Adeyanju, O. L., & Adeshina, K. (2018). Students' perceptions of computer-based test in Nigerian universities. *University of Ibadan Journal of Library & Information Science*, 1(1), 15-27.
- Aliyu, S. A and Francis, O. A. (2014). Using Computer Based Test Method for the Conduct of Examination in Nigeria: Prospects, Challenges and Strategies: *Mediterranean Journal of Social Sciences*, 2(5): 47-56.
- Bandari, F. M. (2014). *Adoption of computer-based testing and assessment in national examinations in Kenya*. (An Unpublished Master's Thesis). University of Nairobi, Kenya
- Ebimgbo, S. O., Igwe, N. J., and Okafor, A. E. (2021) Perceived effectiveness of computer-based test examination mode for large classes among undergraduates of Nigerian Universities: Implications for social work. *Journal of Social Work in Developing Societies*, 3(1): 62-77.

- Foutch, B. K., Fortepiani, L., & Trevino, R. (2019). Student performance and attitudes during the transition from paper to computer-based examinations. *The Journal of Optometric Education*, 45(1), 21-32.
- Hashemi Toroujeni, S. M. (2016). *Computer-Based Language Testing versus Paper-and-Pencil Testing: Comparing Mode Effects of Two Versions of General English Vocabulary Test on Chabahar Maritime University ESP Students' Performance*. (An Unpublished Master's Thesis). Chabahar Marine and Maritime University, Iran.
- Khoshshima, H., and Hashemi Toroujeni, S. M. (2017). Technology in education: Pros and cons of using computer in testing domain. *International Journal of Language Learning and Applied Linguistics World (IJLLALW)*, 14(2), 32-49. Retrieved from <http://www.ijllalw.org>.
- Ogunjimi, M. O., & Aremu, V. I. (2024). Undergraduate students' perception on usage of computer-based test for learning assessment in Ilorin, Nigeria. *Journal of Pedagogy, Andragogy and Heutagogy in Academic Practice*, 5(2).
- Oladimeji, O. F., and Mwuese, B.C.H. (2018). Computer based test: Panacea to undergraduate students' performance in Olabisi Onabanjo University, Ogun State, Nigeria. *Educational Research*, 9(3), 50-57. <http://dx.doi.org/10.14303/er.2018.219>.
- Shobayo, M. A., Binuyo, A. O., Ogunmakin, R., & Olosunde, G. R. (2022). Perceived effectiveness of computer-based test (CBT) mode of examination among undergraduate students in South-Western Nigeria. *International Journal of Education, Library and Information Communication Technology*, 3(1), 34-45.
- Solomon O. O., Thomas A. O. & Adewale J. S. (2022). Students Perception of Computer Based Test (CBT) in a University of Technology in Nigeria: Librarians' Perspective. *Lagos Journal of Library and Information Science (LAJLIS)*. 11(1), 307-324.
- Usman, K. O., & Olaleye, S. B. (2022). "Effect of Computer Based Test (CBT) Examination on Learning Outcome of Colleges of Education Students in Nigeria". *Mathematics and Computer Science*, 7(3), 53-58.