

Business Education Students' Perception of Computer-Based Test in Public Universities in Edo State, Nigeria

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Abstract: The study looked into how Edo State's public institutions' business education students viewed the computer-based test (CBT). A descriptive survey research design was used for the investigation. The population consisted of 226 students (100 and 200 level) studying business education at two public universities in Edo State. The researcher created a structured questionnaire with a 4-point Likert scale called the computer-Based Test Questionnaire (COBTEQ). The instrument was accepted by subject-matter experts and the reliability coefficient—which was determined using the Cronbach Alpha—came out to be 0.81. The researcher was able to obtain 178 copies of the questionnaires from the respondents, and these copies were then subjected to additional statistical analysis using the Mean, Standard Deviation, and the Independent Sample t-test. SPSS version 22 (Statistical Packages for Social Sciences) was used to do this. The study's findings revealed that there were numerous challenges with the CBT assessment in these public universities in Edo State, that there were notable differences between how male and female business education students perceived the use of the CBT, and that there were notable differences between how business education students in these public universities perceived the use of the CBT in different public universities. A key recommendation made in light of the findings was that institutions of higher education actively and purposefully use contemporary computer technologies to evaluate and track the progress of their students. This fits well with the present trend, which will undoubtedly promote sustainable growth.

Keywords: Computer-Based Test, Perception, Paper-Pencil Test, Business Education

1. Introduction

Business education is an essential part of technical and vocational education (TVE), which is taught in the nation's postsecondary institutions. Business education, according to Imeokparia and Ediagbonya (2014), is a part of education that aims to give students' academic and professional skills. These refer to the skills, knowledge, and attitude needed to function well in either a job or as an employer (wealth creator). The learners are put through several types of assessment in order for the assessor to determine whether they have truly gained the requisite competencies; students see these assessments in various ways (Olumese, 2019; Okocha, 2022). The way students in business education view the methods used to evaluate them is very important, and this might help them feel more confident. Numerous methods have been employed over the years to evaluate the academic development of students in business education. Based on their perceptions, some students in business education have praised some of these tactics while others have scoffed at others of them.

The term "perception" describes how something is regarded, comprehended, and interpreted. It describes how people perceive and comprehend someone or something. It has to do with the belief or viewpoint that people frequently hold towards specific things. In the context of this paper, perception relates to how students perceive the CBT and how they comprehend, understand, and interpret it. According to Ediagbonya (2016), a new information system's success is hampered by a lack of user adoption. For system design aspects, the Technology Acceptance Model (TAM) establishes the causal link between perceived usefulness, perceived usability, attitude toward use, and actual usage behavior.

Prior to the advent of technology, the Paper-Pencil Test (PPT) was frequently used to evaluate business education students. Specifically, using paper and a pencil to examine the students. However, as new technologies have developed, new assessment methods have been introduced, such as the computer-Based Test (CBT). Due to the rapid

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advancement of technology, the CBT is becoming more and more well-known in this region of the world. The majority of previously manual tasks are now being handled digitally. In other words, the nation is gradually undergoing a paradigm shift in the way business education students are evaluated. Therefore, it implies that the CBT represents a transition from analogue to digital modes of assessment (Deeley, 2018; Brady, Devitt, & Kiersey, 2019; Fluck, 2019; Liu, Wang, & Koehler, 2019; Bauviens, Muylaert, Clarysse, Audenaert, & Decramer, 2020; Mutambara, & Bayaga, 2021; Okocha, 2022).

Olumese (2019) asserts that one of the most often used recent "innovative" assessment methods is the CBT. In educational institutions, the CBT is viewed as a change catalyst that will transform learning, pedagogy, and curricula (St-Onge, Quellele, Lakhal, Dube, & Marceau, 2021; Noble, Saville, & Foster, 2022; Panggabean, Silitonga, & Sinaga, 2022). A timed, summative, high-stakes examination of student performance using digital devices to run a standardized assessment system is referred to as a "computer-based test" in this context. Answers are provided for this test, and scores are typically computed electronically (Fink, Born, Frey, & Spoden, 2018; Born, Fink, Spoden, & Frey, 2019; Fink, Spoden, & Frey, 2022). In this study, the CBT is described as the effective and efficient monitoring of the academic performances of learners/candidates using modern technological facilities and infrastructure towards the realization of a defined goal. When compared to traditional paper-pencil testing, using CBT can enhance students' test-taking motivation, self-efficacy, test perception, and test performance (Nardi & Ranieri, 2018; Rolim & Isaias, 2019; Olumese, 2019; Gu, Ling, Liu, Yang, Kardanova & Loyalka, 2020; Jimoh, Bamiro, Akapo, Ibrahim, & Ismaila, 2020; Olaniyan-Shobowale, Bamiro, Salau & Yahya, 2021; Abanobi, 2022; Olufuwon, Bamiro, Akudo, & Anagun). In order to establish a valid and reliable CBT, similar test results should be established for the conventional Paper-Based Testing (PBT) and its Computer-Based mode, according to the International Guidelines on Computer-Based Testing (International Test Commission, 2004). This collection of testing requirements is supported by the conventional true-score test theory, which serves as the foundation for both computer-based and paper-based testing. If a test is administered in both formats, the results should be nearly identical, according to this theory. The standards are also supported by empirical research (Organisation for Economic Co-operation and Development, 2010).

The applicability of the CBT in evaluating students' academic achievement has also been investigated in other empirical investigations. According to studies, switching from the PPT to the CBT allows institutions to save a significant amount of money (Olumese, 2019; Efendi, Lesmana, Putra, Yandani, & Wulandari, 2021). The CBT tends to reduce the expense of printing test questions and answer sheets, which is a feature of the traditional style of evaluation, PPT (Okocha, 2022). Researchers have equally emphasised the timely feedback or immediate scoring/reporting of students' performance as a major laudable benefit of the CBT (AlAdl, 2020). Researchers have also emphasized that one important noteworthy benefit of the CBT is the prompt feedback or rapid grading or reporting of students' performance (AlAdl, 2020). With the CBT, business education students can receive prompt feedback on their performances, which will significantly help them shift their perspective. With this quick reaction, students are forced to take responsibility for their behavior and stop blaming or accusing the course lecturer of victimization.

The flexibility in test scheduling and the management of test timing are two further CBT advantages (Olumese, 2019; AlAdl, 2020; Okocha, 2022). The adaptability of test scheduling has received praise from researchers frequently. This structure allows for easy examination of students at various times, according to a carefully planned timetable. Additionally, there is a connection between this and time management. This factor weighs heavily on students' evaluations. Invigilators are less concerned about student timing during the CBT. Within the time allotted for a paper, mandatory exams are administered to students. The system has been set up so that students who might want to take more time than allotted might submit using computers. This is a significant improvement over the PPT's flaws.

Despite the CBT's applicability, academics have also critiqued it, and some of the difficulties with its implementation include finances, poor facilities and infrastructure, a lack of electricity, a labour shortage, connectivity and network issues, and maintenance issues. The CBT must be implemented, and a reasonable amount of cash must be invested in order for it to begin (Olumese, 2019; Scherer & Teo, 2019; Scherer, Siddiq, & Tondour, 2019; Scherer, Siddiq, & Tondour, 2020). A resource that can be used to buy other resources is money. Due to their limited financial resources, most institutions find it challenging to adopt and implement the CBT.

Finance is also needed to acquire facilities and put necessary structures in place. The inadequacy of facilities like desktop, laptops and other network facilities have been identified as major challenges facing the CBT. When there is a consistent power supply, the facilities will operate more effectively. The CBT's execution will undoubtedly be impacted by the current "epileptic power" supply. This will end up increasing the overall cost of administering the CBT because of the utilization of alternative source of power like generator. Apart from these, the CBT will best function in an environment where there is internet connectivity. As at now, internet connectivity cannot be fully guaranteed in all parts of this country.

Nigeria's educational system is always undergoing innovations and modifications as a result of the nation's rapid technological development (AlAdl, 2020). The evaluation of the students in business education has also shown this. The assessment of students in terms of the three educational domains of cognitive, psychomotor, and affective is an issue for business education experts. This has influenced how the CBT is used. The importance of the CBT has been stressed by certain stakeholders, who list its benefits as rapid feedback, less expensive text generation, simplicity of administration, and control over test timing. Despite the above-mentioned relevance of CBT, observation has also

shown that CBT implementation faces some difficulties. The majority of academics and students have both expressed skepticism about the CBT's capacity to evaluate shorthand and typing proficiency. Based on the aforementioned presumption, the researcher is interested in experimentally analyzing how Business Education students in Edo State's public universities perceive the computer-Based Test (CBT).

The main purpose of the study was to investigate the Business Education students' perception of the computer-Based Test (CBT) in the Public Universities in Edo State, while the specific purposes are to assess:

The primary goal of the study was to learn how business education students at Edo State's public universities perceived the computer-based test (CBT); other objectives included evaluating:

- i. the opinion of the Business Education students regarding the importance of the computer-Based Test (CBT) in evaluating the Business Education students in the public universities in Edo State;
- ii. the opinion of the Business Education students regarding the difficulties of the computer-Based Test (CBT) in evaluating the Business Education students in the public universities in Edo State;
- iii. whether the male and female Business Education students have different opinions regarding the computer-Based Test (CBT) in evaluating the Business Education students in the public universities in Edo State; and
- iv. if there are any differences between how the University of Benin and Ambrose Alli University view the use of computer-based testing to evaluate business education students in Edo State.

The following questions, which were analyzed using the proper statistics, served as the direction for this study.

- i. How do business education students in Edo State's public universities view the value of the computer-Based Test (CBT) in evaluating them?
- ii. What do business education students in Edo State's public universities think about the difficulties the computer-Based Test (CBT) presents in evaluating them?

The 0.05 threshold of significance was used to test the following hypotheses:

1. There are no significant differences between the opinions of the male and female students in business education on the usage of the computer-based test.
2. There is no significant difference in how the University of Benin and Ambrose Alli University's business education students feel about the usage of computer-based tests to evaluate them.

2. Methods

This study employed a descriptive survey approach since its goal was to learn how business education students in Edo State's public universities felt about the computer-Based Test (CBT). The population of this study consisted of all students enrolled in Business Education at the 100 and 200 levels at the University of Benin in Benin City and Ambrose Alli University in Ekpoma, the two public universities in Edo State. The sample as a whole had 226 respondents. The entire population was used; hence there was no sampling process. The primary instrument used in the study was a standardized questionnaire. The questionnaire that was used to collect information from the respondents was called the computer-Based Test Questionnaire (COBTEQ). Sections A and B made comprised the whole. A 4-point Likert scale with weights of 4, 3, 2, and 1 for Strongly Agreed (SA), Agreed (A), Disagree (D), and Strongly Disagree (SD) was used to rate thirty (30) opinion statements in Part B of the survey. Part A of the survey contained demographic data about the respondents, such as their sex and institution. We looked at the test's face and content validity. The Ambrose Alli University's Faculty of Education in Ekpoma gave it to specialists in business education, and the final questionnaire integrated their recommendations for the final instrument. The reliability of the instrument was evaluated using the Cronbach Alpha. Twenty students at Delta State University's Business Education program in Abraka who were not in the population were given the test. The Cronbach Alpha was used to assess the instrument's reliability. Twenty students from the Business Education program at Delta State University in Abraka who did not belong to the demographic took the test. The reliability coefficient came out to be 0.81. Face-to-face interaction was employed by the researcher to collect data. Only 178 copies of the questionnaire, or a 79% retrieval rate, could be obtained by the researchers from the respondents. While mean and standard deviation were used to address the two research questions, the independent sample t-test was used to evaluate the hypotheses at the 0.05 level of significance. When the P-value was greater than 0.05, the null hypotheses were kept, and vice versa. Any mean value of 2.5 or higher was considered to be favorable, while values below 2.5 were regarded as unfavorable.

3. Results

The results of the mean and standard deviation-based data analysis for the research topic are shown in tables 1 through 2.

Research Question 1: How do business education students in Edo State's public universities view the value of the computer-Based Test (CBT) in evaluating them?

The frequencies of the individuals' responses were computed to provide an answer to the study question. The computation's outcome is shown in Table 1:

Table 1 shows the significance of the computer-based assessment test's means and standard deviations.

S/N	Items	Mean	SD	Remark
1.	The prompt dissemination of business education students' results is encouraged by CBT.	3.10	.81	Agreed
2.	It reduces the cost associated with test production.	2.87	.94	Agreed
3.	It provides a more flexible test scheduling.	3.03	.91	Agreed
4.	It lowers the prevalence of examination fraud at testing centers.	3.04	1.05	Agreed
5.	There is more test security with CBT.	2.98	1.05	Agreed
6.	It enables students to effectively utilize their allocated time without interruptions from invigilators.	2.98	1.00	Agreed
7.	Business education students with high performance are motivated the more after the immediate feedback.	2.89	1.00	Agreed
8.	It reduces distractions from invigilators.	2.95	1.01	Agreed
9.	It reduces the chances of victimization by lecturers.	3.10	.94	Agreed
10.	It promotes confidentiality of students' results as no other person can easily assess the results.	3.16	.96	Agreed
11.	It eliminates the incidence of 'missing result' which normally characterize Paper-Pencil Test.	3.34	.91	Agreed
12.	It strengthens and reinforces Business education students' computer skills.	3.25	.94	Agreed
13.	It promotes timely computation of Business education students' result and transcript.	3.17	.93	Agreed
14.	With CBT, there is drastic reduction of distraction from taskforce checking for school fees.	3.07	1.00	Agreed
15.	CBT reduces the incidence of impersonation which normally characterize the PPT.	2.75	1.06	Agreed
Cluster		3.05	0.97	Agreed

Source: Researcher's Field Work (2023)

According to Table 1, the standard deviation ranged from 0.81 to 1.06, while the mean responses ranged from 2.75 to 3.34. The Table displayed that all of the items received ratings from responders above 2.5, which represented the mean score for decision-making. Given that the cluster mean was 3.05 and was higher than the criterion means of 2.5, it was clear that the CBT was appropriate for evaluating the students in Edo State's Business Education program.

Research Question 2: What is the perception of the Business Education students on the challenges of the computer-Based Test (CBT) in assessing them in the public Universities in Edo State?

The frequencies of the subjects' responses were calculated in order to provide an answer to the study topic. The calculation's outcome is presented in Table 2:

Table 2: Challenges of the Computer Based Assessment Test: Mean and Standard Deviation

S/N	Items	Mean	SD	Remark
1.	CBT requires significant startup funding.	3.20	.87	Agreed
2.	Students in business education who lack basic computer abilities will struggle to achieve well.	3.11	1.00	Agreed
3.	CBT is ineffective for evaluating students' understanding of basic principles in business education.	3.07	1.06	Agreed
4.	It is not suitable in assessing Business education students' shorthand speed.	3.17	1.01	Agreed
5.	It is not suitable in assessing Business education students' typing speed.	2.92	1.06	Agreed
6.	It is not suitable in assessing Business education students' entrepreneurial skills.	2.86	1.05	Agreed
7.	The immediate feedback to Business education students can negatively affect students.	2.95	1.06	Agreed
8.	The huge finances needed in maintaining CBT facilities and infrastructure is a challenge to CBT implementation.	3.26	.94	Agreed
9.	The cost involve in printing out venue slip for each course is a challenge to Business education students.	3.14	.88	Agreed
10.	The absence of orientation programme on CBT to Business education students is a challenge to its implementation.	3.36	.84	Agreed
11.	The 'epileptic' nature of power supply can hinder CBT's implementation.	3.34	.92	Agreed
12.	The inadequacy of facilities like desktops and laptops is a challenge to CBT implementation.	3.32	.82	Agreed
13.	The adoption of CBT has difficulties due to a lack of enough technical or support workers.	3.38	.87	Agreed
14.	The unsteady nature of internet connectivity/network is a challenge to CBT implementation.	3.38	.89	Agreed
15.	Malfunctioning of a computer system during examination can psychologically displace Business education students.	3.28	.93	Agreed
Cluster		3.18	.95	Agreed

Source: Researcher's Field Work (2023)

The mean replies varied from 2.86 to 3.38, according to Table 2, and the standard deviation ranged from 0.82 to 1.06. The respondents gave all of the item's ratings over 2.5, which was the mean score for decision-making, as shown in the table. Since the cluster mean was 3.18 and was higher than the criterion means of 2.5, it was clear that all the items posed difficulties for using the CBT to evaluate business education students in Edo State's public universities.

Hypothesis One: There is no significant difference in how the University of Benin and Ambrose Alli University's business education students feel about the usage of computer-based tests to evaluate them.

Table 3: T-test examination of the CBT Assessment results for male and female students in business education

Sex	N	Mean	Df	t	P	Remark
Male	45	92.44	176	-.483	.630	Not Significant
Female	133	93.76				

Source: Researcher's Field Work (2023)

According to Table 3, the degree of freedom for the sample size of 176 had a t-value of -.483 and a p-value of .630. The null hypothesis was retained since the p-value of .630 is higher than the alpha value of .05. This indicated that there was little difference between the perceptions of male and female students of business education about the usage of computer-based tests to evaluate them in Edo State's public universities.

Hypothesis Two: There is no significant difference in the perception of the Business Education students in the University of Benin and the Ambrose Alli University on the use of Computer-Based Test in the assessing them.

Table 4: t-test analysis on UNIBEN and AAU Business Education students' Opinions on the CBT Assessment

Institution	N	Mean	Df	t	P	Remark
UNIBEN	42	99.05	176	2.69	.008	Significant
AAU	136	91.69				

Source: Researcher's Field Work (2023)

176 degrees of freedom yielded a t-value of 2.69 and a p-value of .008, according to Table 4's results. The null hypothesis was rejected since the p-value of .008 was less than the alpha value of .05. This meant that the views of the Business Education students at the University of Benin and the Ambrose Alli University on the usage of computer-based tests in evaluating them were very different from one another.

4. Discussion of Findings

The analysis of study question 1 demonstrated that the CBT was suitable for testing business education students. It demonstrated that students received timely feedback. This finding supports that of Nikou and Economides (2018), who came to the conclusion that mobile assessment—specifically, CBT—could offer prompt feedback to guide next instruction and learning. The results also demonstrated how expensive it is to administer the CBT. This supports the author's conclusion in Olumese (2019) that the CBT was less expensive than printing and sending big amounts. The similar conclusion was reached by Nikou and Economides (2018) and Abanobi (2022), who found that CBT looked to be superior to paper and pencil testing for both the states that run the assessment programs and the students who engage in them. The CBT has the advantages of cost effectiveness, employing fewer resources and more effective delivery and grading.

The analysis of research question 2 demonstrated that the CBT ran into a number of problems. It became clear that the biggest obstacle to the CBT's use was money. The conclusion reached by Olumese (2019) that schools were unable to give the most recent tablets and smartphones is supported by this data. The results also showed that inadequate facilities and infrastructure posed problems for the CBT's implementation. This supports the findings of Olumese (2019), who discovered that the adoption of CBT was hampered by insufficient technology and software. This finding supports that of Nardi and Ranieri (2018), who found that connectivity posed a significant obstacle to the application of the CBT. This discovery also showed that a difficulty in implementing CBT was a lack of adequately skilled employees. This finding supports that of Brady, Devitt, and Kiersey (2019), who emphasized the importance of technical assistance and staff training to guarantee the smooth implementation of the CBT.

The results of the analysis of hypotheses 1 clearly demonstrated that there were no appreciable differences between the attitudes of the male and female students in business education on the usage of the computer-based test to evaluate them. The finding may be as a result of the homogeneity of the respondents in both. This finding supports that of Nardi and Ranieri (2018), who found that connectivity posed a significant obstacle to the application of the CBT. This discovery also showed that a difficulty in implementing CBT was a lack of adequately skilled employees. This finding supports that of Brady, Devitt, and Kiersey (2019), who emphasized the importance of technical assistance and staff training to guarantee the smooth implementation of the CBT.

The examination of hypothesis 1's findings clearly showed that there were no discernible attitudes between male and female students in business education regarding the use of computer-based testing to evaluate them. The results could be a result of the respondents' homogeneity across both institutions in Edo State. The findings of hypothesis 2's study conclusively showed that there were considerable differences in the perspectives of business education students at the two public institutions regarding the use of computer-based testing to assess them. The findings may have been influenced by both the ownership of the institutions and the variation in the enrollment of business education students at the two public universities. In contrast to Ambrose Alli University, which is a state university and may not receive funds from outside sources like the Federal Government does, the University of Benin is a Federal University and as such is essentially governed by the Federal Government.

5. Conclusion

The study found that the CBT was effective for assessing business education students enrolled in public universities in Edo State. The CBT assessment in these universities in Edo State was proven to have various issues. According to the study's findings, there were no discernible variations in how male and female business education students perceived the usage of the CBT. In the end, it was discovered that the perspectives of business education students at the two universities were very different. The universities' ages and the degree of facility accessibility at the two institutions may help to explain this.

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