

Perception and attitudes of students towards Computer Based Test in Education courses in Federal College of Education, Zaria: Counselling implications

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ABSTRACT

Original research paper

This study explored students' perceptions and attitudes toward Computer-Based Tests (CBT) at the Federal College of Education, Zaria. A descriptive survey design was employed, and a sample of 357 students was randomly drawn from four of the seven schools in the college through a multistage random sampling technique. Three research questions were developed to guide the investigation. Data were collected using a researcher-developed questionnaire titled Perception and Attitudes of Students towards Computer-Based Tests Questionnaire (PASCOTQ). The responses were analyzed using frequency counts and mean scores to address the research questions. The results indicated that students generally held strong and positive perceptions of CBT as a form of assessment in education courses. Additionally, their attitudes towards the use of CBT were favorable, and several strategies were identified that could further promote acceptance and positive attitudes toward its use. Based on these findings, the study recommended that future researchers expand on the current outcomes to deepen understanding of the impact and relevance of CBT in educational assessments. It also suggested that the study be replicated with a larger and more diverse student population to enhance the generalization of the results, and advocated for the implementation of strategies that foster students' acceptance and favorable disposition toward CBT.

Keywords: Perception, attitudes, Computer Based Test, Education courses and Counselling implications.

Introduction

In recent times, educational institutions across the globe have witnessed a paradigm shift from conventional paper-based examinations to Computer-Based Testing (CBT). This transformation has gradually gained momentum in Nigerian Colleges of Education, driven by the demand for more efficient and timely assessment systems. CBT offers notable advantages such as immediate result processing, reduction in examination

malpractice, and overall cost-effectiveness. Nevertheless, for this system to be fully effective, it is essential to understand the attitudes and perceptions of the primary stakeholders—students. Their level of acceptance, readiness, and comfort with the technology will ultimately determine the success or failure of CBT implementation.

CBT has become increasingly prevalent in educational settings, revolutionizing the way assessments are

conducted in various academic disciplines. With the advancement of technology, many educational institutions especially of higher learning have embraced the use of CBTs in their general courses. This made some colleges of education in Nigeria, Federal College Education, Zaria inclusive to follow the emerging trend of CBT in their general education courses.

Colleges of Education hold a central role in preparing future educators and professional teachers who will contribute to the growth and development of the nation. General Education courses constitute a fundamental component of the curriculum in these institutions, providing students with a broad foundation of knowledge, skills, and attitudes that are essential for their personal growth and professional success. General Education courses aim to cultivate a well-rounded individual by imparting a diverse range of subjects beyond their specialized area of study.

The adoption of Computer-Based Testing in conducting examinations for general education courses in Colleges of Education represents a significant step towards modernizing the assessment process. With its various advantages, including enhanced efficiency, improved security, personalized testing, and real-time feedback, CBT is poised to play an instrumental role in shaping the future of assessments and promoting a more effective and learner-centric educational environment. However, it is essential to understand the perception and attitudes of students towards CBTs as a means of assessment in order to effectively address their needs and concerns.

Perception refers to how individuals interpret and make sense of their experiences. Understanding students' perception of CBTs involves examining their familiarity with the technology, frequency of exposure to CBTs, and their perceived advantages and disadvantages of using CBTs as an assessment tool. Positive perceptions may include recognizing the benefits of faster feedback, increased objectivity, enhanced test security, and accessibility for students with disabilities. On the other hand, negative perceptions may involve concerns about technical glitches, increased anxiety, limited opportunities for creativity, and doubts about the reliability and validity of CBTs.

Attitudes represent individuals' feelings, beliefs, and evaluations towards a particular subject or concept. Students' attitudes towards CBTs reflect their emotional responses, preferences, and overall acceptance of this assessment method. Positive attitudes may manifest as confidence in navigating the computer-based testing

platform, belief in the accuracy of CBTs in assessing knowledge and skills, and perceiving CBTs as a fair means of evaluation. Negative attitudes may include skepticism, a preference for traditional paper-based tests, and concerns about the perceived difficulty level and fairness of CBTs.

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Exploring students' perception and attitudes towards CBTs in education courses at FCE, Zaria, is crucial for several reasons. First, it provides insights into students' experiences and perspectives, enabling educators and counsellors to tailor support and interventions accordingly. Second, it helps identify potential challenges or barriers that students may face during CBTs and facilitates the development of strategies to mitigate these issues. Third, understanding students' perception and attitudes can inform the design and implementation of CBTs to optimize their effectiveness and ensure students' satisfaction and engagement.

By conducting research on the perception and attitudes of students towards CBTs in education courses at FCE, Zaria, valuable knowledge can be gained to inform counselling implications. The findings can guide counselling professionals in providing targeted support and interventions to address students' concerns, enhance their acceptance of CBTs, and promote their academic performance and well-being in the context of computer-based testing.

Numerous studies have highlighted the growing relevance of technology in education, particularly in the context of assessment. Computer-Based Testing (CBT) has been identified as a transformative approach that enhances examination administration and evaluation. Scholars such as Ayo et al. (2019) and Olumorin (2020) have noted that CBT promotes efficiency and transparency. Despite these benefits, the adoption of CBT is not without its challenges. Studies indicate that inadequate infrastructure, limited computer literacy among students, and anxiety towards technology can hinder its effective implementation. Understanding student attitudes, as argued by Okonkwo (2021), is vital

for tailoring support strategies that encourage a smooth transition from traditional methods to digital assessments.

Statement of the Problem

Computer-Based Tests (CBTs) have gained significant popularity in educational institutions worldwide, including the Federal College of Education (FCE), Zaria. As educational practices increasingly embrace technology, it is crucial to understand students' perception and attitudes towards CBTs, particularly in the context of Education courses. By examining students' perspectives and attitudes, valuable insights can be gained to inform counselling strategies and interventions to enhance their academic performance and overall well-being. Most of the current research compares the two methods without exploring the students' perception about the test. This study will therefore fill the gap in the literature by providing students' perception and attitudes towards CBT.

The problem statement seeks to address the following key questions:

What are the perceptions of students at FCE, Zaria regarding Computer-Based Tests in Education courses? What are the attitudes of students towards Computer-Based Tests in Education courses? What strategies can be implemented to enhance students' acceptance and positive attitudes towards CBTs in Education courses, leading to improved academic engagement and achievement? What are the potential counselling implications of students' perception and attitudes towards CBTs? How can counselling services be tailored to address any challenges or concerns students may have related to CBTs?

By addressing these questions, this research aims to shed light on the perception and attitudes of students towards CBTs in Education courses at FCE, Zaria. The study's results will offer significant understanding and practical implications for counselling professionals and educational institutions to develop effective counselling programmes and interventions that promote students' well-being and optimize their learning experiences in the context of computer-based testing.

Objectives of the Study

- i. To investigate students' perception of CBT as a means of assessment in education courses
- ii. To explore students' attitudes towards the use of CBT in education courses

- iii. To identify strategies to enhance students' acceptance and positive attitude towards CBT

Research Questions

To give this research a right focus, the following research questions were posed and scientifically answered:

- i. What are the students' perceptions of CBT as a means of assessment in education courses?
- ii. What is the nature of students' attitudes towards the use of CBT in education courses?
- iii. What are the strategies that can enhance students' acceptance and positive attitude towards CBT?

Methodology

The study adopted a descriptive survey design. The target population comprised all registered NCE II students for the 2022/2023 academic session, totaling 5,620. A sample of 357 students was selected based on the guidelines provided by Research Advisors (2006). Participants were randomly drawn from four out of the seven existing schools within the College using a multistage random sampling method.

Data was gathered using a researcher-developed questionnaire titled *Perception and Attitudes of Students towards Computer-Based Tests Questionnaire (PASCOTQ)*. The questionnaire was organized into four sections: A, B, C, and D. Section A collected demographic data of respondents; Section B included ten items designed to assess students' perceptions of CBT as an assessment tool in education-related courses. Responses were measured using a four-point Likert scale: Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). Section C addressed students' attitudes towards the use of CBT, while Section D focused on identifying strategies to foster greater acceptance and positive attitudes toward CBT.

The instrument's validity was confirmed by experts from the Departments of Guidance and Counselling and Computer Science at the Federal College of Education, Zaria. A pilot study was carried out in a different school from the main study locations using the test-retest approach. The resulting data were analyzed using

Pearson Product Moment Correlation, yielding a reliability coefficient of 0.72.

The administration of the questionnaire was supported by trained class representatives and selected lecturers. The collected data were analyzed using frequency counts and mean scores to address the research questions. A mean benchmark of 2.50 was used; items with a mean score of 2.50 or higher were considered

significant and accepted, while those below 2.50 were deemed insignificant and rejected.

Data Analysis

Results of the Perception and attitudes of students towards Computer Based Test in Education courses in Federal College of Education, Zaria are presented on the basis of research questions:

Research Question One

What are the students' perceptions of CBT as a means of assessment in education courses?

Table 1: Students' perceptions of CBT as a means of assessment in education courses

S/N	Item statement	SA	A	D	SD	Scores	Mean
1	CBT assessments in education courses provide a fair representation of my knowledge and abilities.	99	85	97	76	921	2.58
2	CBT assessments enhance my understanding of the course materials compared to traditional assessments.	84	92	101	80	894	2.50
3	CBT assessments are effective way to evaluate my progress and learning in education courses.	126	98	63	70	994	2.78
4	I believe that CBT assessments accurately measure the learning objectives of education courses	115	107	74	61	990	2.77
5	I prefer CBT assessments over traditional paper-based assessments	135	119	58	45	1058	2.96
6	CBT assessments offer immediate feedback, which is beneficial for my learning.	117	143	58	39	1052	2.95
7	I believe that CBT assessments are a reliable method of evaluation in education courses.	139	128	49	41	1079	3.02
8	CBT assessments encourage me to study and prepare more thoroughly for my exams.	102	115	67	73	960	2.69
9	I feel that CBT assessments adequately challenge my knowledge and critical thinking skills.	81	90	122	64	902	2.53
10	I prefer the flexibility of CBT assessments, allowing me to take them at a time and location that suits me.	93	96	114	54	942	2.64
11	CBT assessments help me manage my time more efficiently during exams.	97	103	62	95	916	2.57
12	I find CBT assessments to be a valuable tool for self-assessment and self-improvement.	86	96	91	84	898	2.52
13	CBT assessments provide a level playing field for all students, ensuring fairness in evaluations.	157	123	46	31	1120	3.14
14	CBT assessments align well with the overall course structure and contents.	113	98	82	64	974	2.73
15	I believe that CBT assessments contribute positively to my learning outcomes	56	71	85	145	872	2.44

The analysis revealed that a majority of the students had a favorable perception of CBT. Many respondents acknowledged the promptness of result release and reduction in human error as significant benefits. However, some students expressed concern over technical problems such as system crashes and slow network connections. Mean scores in table 1 above

reveal that the students generally have high and positive perception of CBT as a means of assessment in education courses. All the fifteen identified opinions of students on CBT as a means of assessment were confirmed by the respondents. This is evidenced by the high mean scores of all the item statements ranging from 2.50 to 3.14.

Research Questions Two

What is the nature of students' attitudes towards the use of CBT in education courses?

Table 2: Respondents views on the students' attitudes towards the use of CBT in education courses

S/N	Item statement	SA	A	D	SD	Scores	Mean
1	I feel positive about the idea of using CBT as a means of assessment in education courses.	119	98	74	66	984	2.76
2	I am confident in my ability to adapt to and perform well on CBT assessments	123	86	67	81	965	2.70
3	CBT assessments encourage me to develop better time management skills during exams.	151	79	60	67	1028	2.88
4	CBT assessments reduce stress and anxiety associated with traditional exams.	91	92	90	84	904	2.53
5	I am enthusiastic about the use of CBT to promote a more interactive and engaging learning environment	79	74	114	90	856	2.40
6	I believe that CBT assessments can accurately measure my knowledge and understanding of course material.	189	75	55	38	1129	3.16
7	CBT assessments encourage a more independent and responsible approach to learning.	163	104	61	29	1115	3.12
8	CBT assessments have the potential to provide more detailed and insightful feedback compared to traditional exams.	98	125	71	63	972	2.72
9	I think that CBT assessments align well with the technological advancements in education today.	148	127	49	33	1104	3.09
10	Overall, I have a positive attitude towards the use of CBT for assessment in education courses	162	119	53	23	1134	3.18

Table 2 above indicates nature of students' attitudes towards the use of CBT in education courses. Out of the ten characteristics listed, nine is commonly featured among the respondents. This is depicted by the high mean scores ratings in the items ranging from 2.53 to 3.18. Respondents however do not believe that they are enthusiastic about the use of CBT to promote a more interactive and engaging learning environment going by the low mean score rating of 2.40 scored by the item statement.

Research Question Three

What are the strategies that can enhance students' acceptance and positive attitude towards CBT?

Table 3: Strategies that can enhance students' acceptance and positive attitude towards CBT

S/N	Item statement	SA	A	D	SD	Scores	Mean
1	Providing clear instructions and guidelines for CBT assessments improves its usage.	161	143	43	10	1169	3.27
2	Offering mock CBT assessments prior to the actual exam will help students.	148	137	55	17	1130	3.17
3	Integrating multimedia elements into CBT assessments will make it more enjoyable.	146	150	34	27	1129	3.16
4	Having access to technical support and assistance during CBT assessments increases willingness to embrace it..	160	137	43	17	1154	3.23
5	Receiving timely feedback on CBT assessments positively affects ones perception.	164	140	28	25	1157	3.24
6	Flexibility in the timing and scheduling of CBT assessments will be helpful	142	133	68	14	1117	3.13
7	Provision of mop up time for missing candidates improves its acceptability	173	145	25	14	1191	3.34

8	Implementing CBT assessments should be gradual transition from traditional assessments	113	147	71	26	1061	2.97
9	Incorporating gamification elements (e.g., badges, rewards) into CBT assessments makes the experience more enjoyable and motivating	155	123	59	20	1127	3.16
10	Promoting the reliability and validity of CBT assessments assures of their accuracy and fairness	131	98	67	61	1013	2.84

Table 3 above reveals strategies that can enhance students' acceptance and positive attitude towards CBT. The analysis of mean scores in the table reveals that respondents generally have high and positive agreement with identified strategies that can enhance students' acceptance and positive attitude towards CBT. All the ten identified strategies were confirmed by the respondents. This is evidenced by high mean scores of all the item statements ranging from 2.84 to 3.34.

Discussion of findings

Research question one sought to investigate students' perception of CBT as a means of assessment in education courses. The finding from the study revealed that the students generally have high and positive perception of CBT as a means of assessment in education courses. This is depicted by the high mean scores of all the item statements identified. Research evidences such as that of Olafare, Akinoso, Omotunde and Annenne (2017) and that of Okocha, Toluwani and Owolabi (2017) were in favour of using CBT for examinations and tests. Okocha (2022) also supported this finding through the study which result showed that majority of students preferred CBT to paper based test but were not willing to adopt this technique in all courses.

Research question two explored students' attitudes towards the use of CBT in education courses. Findings from the study revealed that out of the ten characteristics listed, nine is commonly featured among the respondents. This is depicted by the high mean scores ratings in the items. This is in line with the findings of Tella and Bashorun (2012) whose result demonstrated that generally respondents have positive attitude towards CBT. Equally, Research suggests that students who have experience with CBT tend to have a more positive attitude towards such assessments (Gibbs and Gibbs, 2019).

What are the strategies that can enhance students' acceptance and positive attitude towards CBT was the research question three. The study discovered that most of the respondents favoured all the items in the questionnaire as strategies that can enhance students'

acceptance and positive attitude towards CBT. This finding has been buttressed by Marsh and Roche (1993) who observed that CBT platforms that have intuitive and user-friendly interfaces are more likely to be positively received by students. Clear instructions, simple navigation, and accessibility features can contribute to a more positive perception of CBT. Addressing any concerns or queries and providing timely feedback can also contribute to a positive attitude towards CBT (Means and Jacobson, 1997) and Graham and Perin (2007) noted that emphasizing the benefits of CBT, such as faster results, reduced paper usage, and immediate feedback, can positively influence students' perceptions of computer-based assessments.

Counselling implications

The counselling implications of the positive attitudes of students towards CBT assessments highlight the potential benefits in terms of motivation, confidence, and individualized support.

These suggest that incorporating CBT as an assessment method can have various counselling implications that can enhance the learning experience and offer valuable insights into students performance. By addressing potential challenges and leveraging the benefits of CBT, educators and counsellors can create a more supportive and effective educational environment. Collaborative efforts between educators, counsellors, and policymakers are crucial to maximize the positive impact of CBT assessments on students' learning experiences.

Conclusion

The study concluded that students' generally have high and positive perception of CBT as a means of assessment in education courses, that students' attitudes towards the use of CBT in education courses was positive and that there are different strategies that can enhance students' acceptance and positive attitude towards CBT.

Despite the positive perceptions, there are also potential concerns related to CBT, such as technical issues, security concerns, and students' access to reliable

internet and technology. Therefore, it's essential for educators and policymakers to address these issues and ensure equitable access to CBT resources.

Recommendations

On the basis of the findings of this study, the following recommendations were made:

1. Researchers should build upon the findings and contribute to a more comprehensive understanding of the effectiveness and implications of using CBT assessments in education courses
2. Relevant stakeholders such as College counsellors, IT experts and other personnel who can be of assistant in the implementation of the various strategies that can enhance students' acceptance and positive attitude towards CBT as a means of assessment should be carried along.
3. Orientation programmes and seminars on the use of CBT and its benefits should be organized for students from time to time.

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