

**PERCEPTION OF LECTURERS ON THE USE OF COMPUTER BASED TEST
(CBT) IN NIGERIAN PUBLIC UNIVERSITIES**

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Abstract

This study examined the perception of lecturers on the use of Computer Based Test (CBT) in General Studies (GS) examination in Nigerian tertiary institutions. It was hypothesized that the mean perception scores of male and female lecturers on the use of CBT in GS examinations will not differ significantly. Analytic descriptive design was adopted for the study. The sample comprised 130 males and 220 female lecturers of Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus. Simple random sampling technique was

used to select lecturers that teach GS courses. A 31-item researchers' constructed instrument titled "Perception of Lecturers on the Uses of CBT (PLUCBT)" was used to collect data for the study. The instrument was validated by three experts in the field of Measurement and Evaluation. The reliability index of the instrument were determined and this yielded coefficient values of 0.84 for section A, 0.79, for section B, 0.82 for section C and 0.74 for section D. Copies of the questionnaire were administered to the respondents by the researchers. The data collected were analyzed using mean and standard deviation to answer the research questions and independent t-test was employed to test the null hypotheses at .05 probability level. The results of the study showed that lecturers perception of that CBT had a positive influence on undergraduate students performance, that lecturers perception of CBT had no significant influence on the competencies required by students in GS courses. It was recommended among others that CBT is a laudable method of assessment, and for its sustainability good infrastructural facilities should be in place before the commencement of GS courses examination in Nigerian universities.

INTRODUCTION

Assessment is a vital element of instructional processes as it is often conducted to determine the degree to which stated educational objectives have been achieved and the extent to which educational institutions have aided the needs of the society in general. Assessment is essential not only to guide the development of individual student but also to monitor and continuously improve the quality of programmes, inform prospective students and their parents. It also provides evidence of accountability to sponsors of education. Fisseha (2010) asserted that assessment as a curriculum issue is a process for obtaining information that informs decision taking about student learning, curriculum, programmes or education policies matters. Generally, assessment is the process of investigating the status or standard of a learner's achievement/attainment or the achievement of a group of learners where group instruction prevails, with reference to expected outcomes which must have been specified as objectives (Anikweze, 2014). According to Chauchan in Anikweze, assessment is the practical application of measurement and just as all testing could be subsumed under assessment, so could all assessment be subsumed under measurement.

When someone is assessing something, the person is engaged in the determination of the worth and value of that thing. Educational assessment is the process of documenting, usually in measurable terms, knowledge, skills, attitudes and beliefs. Assessment can focus on the individual learner, the learning community (class, workshop, or other organized group of learners). Nevertheless, assessment goes beyond mere testing. Thus, for selecting students for entry into higher institutions (such as the one conducted by Joint Admission and Matriculation Board, JAMB), test may be used. Osegbo and Ifeakor (2011) defined test as a set of standard questions presented to an individual or group of individuals to answer or respond to. These questions contain some desirable characteristics which the examiner or tester expects from the testee. They reiterated that the response made by the testee/examinee is an indication of the extent of the desired characteristics possessed by

him/her. A test may be administered orally, on paper, on a computer or in a confined area that requires a test taker to physically perform a set of tasks (Nworgu & Urama, 2016).

Technology has significantly reshaped the method of assessment/testing. Technologies in teaching, learning and assessment has shifted the paradigm from paper-pencil test (PPT) to computer-based test/assessment (CBT or CBA) or e-assessment. The British Psychological Society (2002) refers to CBA or CBT as any psychological assessment or test that involves the use of digital technology to collect, process and report the result of that assessment. Olawale and Shafi'l (2010) stated that CBT is the process of which examinations are delivered, taken and scored electronically. It entails questions being deployed onto computer works stations (intranet and internet) and candidates answering the question on to the computer. Corroborating, Ojerinde (2014) affirmed that CBT is a method of administering tests in which the responses are electronically recorded and assessed.

According to Onyibe, Nwadu-Ikpor and Abdulhakim (2015), CBT means the candidate sits in front of a computer and the questions are presented on the computer monitor and the candidate submits the answers through the use of keyboard or mouse. Alabi, Issa and Oyekunle (2012) described CBT as a method of administering tests in which the responses are electronically recorded, assessed or both. Furthermore, Obioma, Junaidu and Ajagun (2013) stressed that automation of educational assessments, be it school-based assessment or other public examinations, can be described as the application of technology for the assessment of learning outcomes; using machines to perform those operations which hitherto were performed wholly or partly by teachers or employees. In this context, CBT could be a technology based assessment which provides opportunities to measure complex form of knowledge and practical abilities that are not possible to engage and assess through the traditional PPT method.

Moreover, Idika (2015) noted that CBT model has been designed in such a way that any Nigerian child who can use mobile handset should be able to use the model to attempt any question using the computer. Worthy to note, Idika stressed that educational testing or assessment is a critical aspect of educational system. The trend of testing in today's technological advanced world is geared towards bringing about development and upgrade in the conduct of public examinations. JAMB (2014) observed that the educational testing practices in Nigeria which have predominantly been paper and pencil (PPT) may not prepare children to face global development associated with the desired advancement in technology and education. According to Ojerinde (2014) CBT is embraced as a positive change that will put the Nigerian child on the same pedestal with its counterparts abroad. Ojerinde emphasized that with CBT, the following advantages are very possible in advancing the course of educational testing in Nigeria:

1. Efficient administration of examination and scoring of tests.
2. Increased delivery of test items that have been calibrated and delineated according to their pertinent item characteristics (instructional levels/objectives, difficulty level, discrimination level and functionality distracters).
3. Improved test security resulting from electronic transmission and encryption for total eradication of breaches of examination security.
4. Unbiased test administration and scoring.

5. Increased computer awareness.
6. Reduction in the spate of examination security breaches, issues of cancellation of result due to insecurity and missing results due to candidates carelessness will be eradicated and
7. Improving the quality and standard of education in the long run.

Meanwhile, Lukeman and Ogechi (2012) opined that CBT simplifies the entire testing cycle, including generation, execution, evaluation and presentation of test. The authors noted that CBT advantages include the standardization of test administration condition, offer test developers the opportunity to improve their productivity and lead to innovation in their fields and that no matter the tests' population size, CBT helps developers to set the same test conditions for all participants. Abubakar and Odey (2015) opined that the introduction of CBT examinations in tertiary institutions in Nigeria will afford both the lecturers and students to be information communication and technology (ICT) compliant while will go a long way to improve the web ranking of the universities among other world ranked tertiary institutions.

A study carried out by Lukeman and Ogechi (2012) investigated the effect of test mode administration on the validity of computer-based testing (CBT) among 120 students of University of Nigeria, Nsukka and University of Ilorin where CBT was already in use. The findings revealed that computer knowledge of students could influence their performance on CBT either positively or negatively. Confirming the findings of the study, Ojerinde (2014) observed that parents and candidates have shown great enthusiasm with the CBT use as this was shown by the number of registered candidates for 2013 CBT which was more than the initial target of JAMB. A study was carried out by Sanne and Mohammed (2015) on the views of students on the use of computer based test for the conduct of UTME. The study found that the introduction of CBT for UTME examination attracted most of students' attention and therefore led to CBT preference over the conventional way of writing the examination. The study revealed further that CBT can reduce examination malpractices and enhanced security as opposed to paper and pencil test. A similar study conducted by Aduwa-Ogiegbaen and Iyamu (2005) on line examination practices in vocational education and training found that students perceived on line assessment as a flexible and efficient means of conducting examination with immediate feedback. Another study by Oladimeji and Mwuese (2018) on CBT as a panacea on undergraduates students' performance found that CBT had a positive influence on their performance. They further found out some challenges such as the mixed up of results due to improper data base management which at times could lead to mass failure. Nevertheless, Joshua and Ikiroma (2013) findings were rather contradictory. They carried out a study on CBT in Nigeria's university entrants' matriculation examination, readiness and acceptability of critical stake-holders. The study among other things found out that found that the major stakeholders (the students), complained that the examination may be interrupted by electricity while others expressed fear that the computer used for the CBT could malfunction during the test. That notwithstanding, the Register of Jamb, Ojerinde in Adoberin (2012) noted that the CBT mode will improve the Board's service delivery; reduce the incidence of breaches of examination security and help Nigeria operate global best practices. Most Universities all over the world, colleges of education and polytechnics

seem to have replaced the customary paper and pen testing (PPT) with CBT for academic assessment and students' evaluation (Oladimeji & Mwuese, 2018).

Since the emergence of ICT, schools, institutions and examination bodies have incorporated computer based test (CBT) as an indispensable tool in their examination administration. In the same vein, David in Oladimeji and Mwuese (2018) added that online technologies have greatly influenced the means of conducting examination and assessment. Most institutions have adopted CBT as an assessment tool for admitting or screening students.

In Chukwuemeka Odumegwu Ojukwu University (COOU) Igbariam Campus, all General Studies courses namely G.S. 101 and 102 – Use of English I and II, G.S. 103 – Introduction to Philosophy and Logic; G.S. 104 – History and Philosophy of Science, G.S. 107 – Nigeria Peoples and Culture; G.S. 108 – Basic Communication in French; G.S. 208 – Peace and Conflict studies; G.S. 210 – Basic Communication in Igbo Language and G.S. 211 – Entrepreneurial Studies and many more are assessed with CBT. Despite the successful adoption of CBT in the university, it is still faced with some challenges as reported by previous researches. The success or otherwise of a laudable innovation like CBT depends in part on lecturers' disposition towards it. Disposition of individuals generally depends on their perception which is seen as an important determinant of human behaviour. As it were, perception of COOU lecturers (males and females) are not well understood as pertaining to this CBT, hence, the problem of this study is: What is the lecturers' perception on the use of CBT in General Studies courses?

The purpose of this study is aimed at ascertaining lecturers' (male and female) perception of the usefulness of CBT in General studies courses (GS); the infrastructural requirement of the use of CBT in GS courses; competencies required by students for the use of CBT in GS courses and the challenges associated with the use of CBT in GS courses.

Research Questions

The following research questions guided the study:

1. What is the mean score of lecturers' perception on the usefulness of CBT in GS courses?
2. What is the mean score of lecturers' perception of the infrastructural requirements on the use of CBT in GS courses?
3. What is the mean score of the competencies required by students on the use of CBT in GS course?
4. What is the mean score of lecturers' perception on the challenges associated with the use of CBT in GS courses?

Hypotheses

The following hypotheses were formulated and tested at .05 level of significance:

1. The mean perception scores of male and female lecturers on the use of CBT in GS courses did not differ significantly.
2. The mean perception scores of male and female lecturers on the infrastructural requirements on the use of CBT in GS courses did not differ significantly.

3. The mean perception scores of male and female lecturers on the competencies required by students on the use of CBT in GS courses did not differ significantly.
4. The mean perception scores of male and female lecturers on the challenges associated on the use of CBT in GS courses did not differ significantly.

Methodology

The study adopted analytic descriptive design. This design was appropriate because the variables of the sample are compared for the various identified strata of the sample using hypotheses e.g. gender, part/full time lecturers (Ifeakor, 2018). The area of the study is Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus. The population of the study comprises 660 lecturers in the university. Stratified random sampling technique was used to select 130 male and 220 female lecturers giving a total of 350 full time lecturers in General Studies Unit that teach all GS courses for both 100 and 200 level undergraduate students in the university. The instrument for data collection was a researchers' constructed questionnaire titled "Perception of Lecturers on the use of CBT (PLUCBT)."

The instrument consisted of two sections (A and B). Section A captured the demographic information of the respondents with respect to gender, mode of employment (part-time/full-time). Section B highlights the perception of full time lecturers on the use of CBT in GS courses as it relates to usefulness, infrastructure, competencies and challenges. The instrument is a 31 – item students questionnaire with four point response format of Strongly Agree (SA) – 4; Agree (A) - 3; Disagree (D) - 2 and Strongly Disagree (SD) - 1 for first, second and fourth clusters while the third cluster has a response format of Very High (VH) - 4; High (H) - 3; Low (L) - 2 and Very Low (VL) - 1.

The instrument was validated by three experts in the areas of Measurement and Evaluation unit drawn from Nnamdi Azikiwe University, Awka and Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus respectively. The criticisms, corrections and suggestions of the experts were incorporated in the final draft. In order to estimate the internal consistency of the instrument, a pilot test was conducted using 20 lecturers of University of Nigeria, Nsukka. The data collected were computed using Cronbach Alpha technique and the reliability index yielded 0.84, 0.79, 0.82 and 0.74 for first, second, third and fourth clusters respectively while the overall reliability of the instrument was 0.80. Copies of the questionnaire were administered to the respondents by the researchers. The administration and retrieval of the questionnaire from the respondents took a period of one week in order to allow them do a perfect work. All the 350 copies of questionnaire administered were retrieved and correctly completed and thus were used for the study. Mean and standard deviation were used to answer the research questions while independent t-test was used to test the null hypotheses at .05 level of significance.

Presentation and Analysis of Data

The data were presented in tabular based on the research questions and hypotheses that guided the study as follows:

Research Question 1: What is the mean score of lecturers’ perception on the usefulness of CBT in GS courses?

Table 1: Mean and standard deviation (SD) of lecturers’ perception on the usefulness of CBT in GS courses.

S/N	Item Description	N	\bar{X}	SD	Decision
1	Saves lecturers’ stress of marking large number of answer scripts within a limited time	350	3.64	0.84	Agree
2	Marking is more accurate because computers do not suffer from human error.	350	3.35	0.71	Agree
3	Use of computer in reporting results minimize error.	350	2.82	0.61	Agree
4	Use of CBT in GS courses will eliminate missing script syndrome.	350	2.82	1.32	Agree
5	CBT gives lecturers the opportunity of setting more questions to effectively cover the course contents.	350	2.77	0.74	Agree
6	CBT affords users to be information communication and technology (ICT) complaint.	350	2.85	0.84	Agree
7	CBT gives lecturers the opportunity to get immediate feedback on the examinations they have conducted.	350	3.51	0.66	Agree
8	CBT makes lecturers to have confidence that the grades for online assessment are safe.	350	3.00	0.76	Agree
9	CBT enhances lecturers productivity in assessment.	350	2.66	1.09	Agree
10	CBT gives users greater awareness of its uses.	350	3.20	0.79	Agree

The result of data analyse in table 1 showed that all the items had a mean above the criterion mean of 2.50. This implies that lecturers perceived that the use of CBT saves lecturers stress of marking large number of answer scripts. The use of CBT make marking more accurate, minimizes error, eliminates missing script syndrome, and affords lecturers to be ICT compliance etc. It can be inferred from the table that lecturers have positive perception on the use of CBT in the assessment of GS courses in Nigerian Universities.

Research Question 2: What is the mean score of lecturers’ perception of the infrastructural requirements of CBT in GS courses?

Table 2: Mean and SD of lecturers perception of infrastructural requirements of CBT in GS courses.

S/N	Item Description	N	\bar{X}	SD	Decision
11	Standby generator for CBT examination of GS courses.	350	3.00	0.88	Agree
12	Lecturers are expected to possess computer skills to enable them perform in the use of CBT in GS courses.	350	2.86	1.14	Agree
13	There is need for ICT facilities to enable lecturers administer CBT.	350	3.25	0.76	Agree
14	Funds to purchase computers and gadgets for students is required.	350	3.56	0.84	Agree
15	CBT halls in the university should be provided for the examination of GS courses.	350	2.95	1.15	Agree
16	There is need for facilities to assess practical skills in terms of creative abilities of students.	350	2.81	1.02	Agree

The results of data analysis as shown in table 2 indicate that lecturers perceived the need of standby generator for CBT examination of GS courses, possession of computer skills by lecturers, need for ICT facilities for CBT administration, funds to purchase computers and gadgets for CBT examinations. Lecturers also perceived that CBT halls in the university should be provided for the examination of GS courses.

Research Question 3: What is the mean score of lecturers’ perception on the competencies required by students for the use of CBT in GS courses?

Table 3: Mean and standard deviation of lecturers’ perception on the competencies required by students for the use of CBT in GS courses.

S/N	Item Description	N	\bar{X}	SD	Decision
17	Ability to use mobile phones enable students to use the model to answer any question using the computer	350	3.08	0.98	Agree
18	Ability to type words/figures using the keyboard.	350	2.98	1.01	Agree
19	Ability to use number keys.	350	2.78	0.74	Agree
20	Ability to use the mouse to point an area or word on screen.	350	2.77	0.95	Agree
21	Ability to use mouse clicking options such as left, right or double clicking.	350	2.68	1.47	Agree
22	Ability to use the mouse to move the cursor (vertically or horizontally) using the scroll button.	350	2.71	0.87	Agree
23	Ability to use the mouse to pen/close a pop-up window.	350	2.79	0.86	Agree
24	Ability to use the screen navigator command (previous/next).	350	2.70	0.94	Agree

The results in table 3 revealed the lecturers’ perception on the competencies required by students for the use of CBT in GS courses. All the items have a mean of 2.50 and above. This is an indication that lecturers’ perceive use of mobile phones and the applications,

type words/figures using keyboard, the use of number keys, the various uses of mouse and the use of screen navigator command as competencies required for the use of CBT in GS courses.

Research Question 4: What is the mean score of lecturers’ perception on the challenges associated with the use of CBT in GS courses?

Table 4: Mean and SD of lecturers’ perception on the challenges associated with the use of CBT in GS courses.

S/N	Item Description	N	Mean	SD	Decision
25	Power failure when writing GS courses.	350	2.75	0.96	Agree
26	Loss of network connection during GS examination.	350	2.95	1.07	Agree
27	Lack of computer skills by students pose a challenge to the use of CBT in GS courses.	350	2.83	1.00	Agree
28	Computer anxiety is a challenge to students.	350	2.67	1.10	Agree
29	Time allotted to CBT examination is not enough to complete the questions.	350	3.05	0.93	Agree
30	Computers available in the school are not sufficient to serve the large population of students.	350	3.45	0.99	Agree
31	CBT results sometimes get mix-up due to improper data base management thereby resulting to missing scripts.	350	2.73	0.87	Agree

From table 4, lecturers’ perception on the challenges associated with the use of CBT in GS courses were x-rayed. They perceived that power failure (2.75), loss of network connection (2.95), lack of computer skills by students (2.83), computer anxiety (2.67), time allotted to CBT examinations (3.05), mix-up of CBT scripts leading to missing scripts (2.73) are the challenges associated with use of CBT in GS courses examination.

Hypothesis One: The mean perception scores of male and female lecturers on the usefulness of CBT in GS courses did not differ significantly.

Table 5: Independent t-test of male and female lecturers perception on the usefulness of CBT in GS courses.

Source of Variation	N	Mean	SD	t-cal	df	p-value	Decision
Male	130	31.49	2.45	28.48	348	.000	Significant
Female	220	23.61	2.51				

As shown in table 5, independent t-test of mean perception of male and female lecturers on the usefulness of CBT in GS courses indicated that t-test was 28.48 at 348 degrees of freedom and p-value of .000 while the probability value was .05. This showed that p-value of .000 was less than .05, therefore the null hypothesis was rejected. Based on the result, there is a significant difference between the mean perception of male and female lecturers on the usefulness of CBT in GS courses.

Hypothesis Two: The mean perception scores of male and female lecturers on the infrastructural requirements of CBT in GS courses.

Table 6: Independent t-test of male and female lecturers perception on the infrastructural requirements of CBT in GS courses.

Source of Variation	N	Mean	SD	t-cal	df	ρ -value	Decision
Male	130	16.23	2.42	0.87	348	.381	Not significant
Female	220	16.45	2.15				

Table 6 indicated independent t-test of male and female lecturers' perception on the infrastructural requirements of CBT in GS courses. The calculated t-value (0.87) at 348 degrees of freedom and .05 probability level was not significant at a p-value of .381 which was greater than .05 alpha level. Based on the result, the null hypothesis of no significant difference was not rejected. Hence, there is no significant difference between the mean responses of male and female lecturers on the infrastructural requirements of CBT in GS courses.

Hypothesis Three: The mean perception scores of male and female lecturers on the competencies required by students on the use of CBT in GS courses.

Table 7: Independent t-test of male and female lecturers' perception on the competencies required by students on the use of CBT in GS courses.

Source of Variation	N	Mean	SD	t-cal	df	ρ -value	Decision
Male	130	23.53	3.64	0.24	348	.809	Not significant
Female	220	23.61	2.51				

The results from table 7 revealed that t-calculated was 0.24 at 348 degrees of freedom and p-value of .809. The p-value of .809 was greater than .05 alpha level. This implied that null hypothesis of no significant difference was not rejected. Therefore, there is no significant difference between the mean perception scores of male and female lecturers on the competencies required by students for the use of CBT in GS courses.

Hypothesis Four: The mean perception scores of male and female lecturers on the challenges associated with the use of CBT in GS course did not differ significantly.

Table 8: Independent t-test of male and female lecturers perception on the challenges associated with the use of CBT in GS courses.

Source of Variation	N	Mean	SD	t-cal	df	ρ -value	Decision
Male	130	18.45	4.71	7.64	348	.000	Significant
Female	220	15.10	3.45				

Findings from table 8 showed the independent t-test of 7.64 at 348 degrees of freedom and p-value of .000. The p-value of .000 was less than .05 level of significance, therefore the null hypothesis was rejected. Based on the result, there is a significant difference between the mean perception scores of male and female lecturers on the challenges associated with the use of CBT in GS courses.

Discussion

The findings of this study in line with research question one and hypothesis one revealed that lecturers perceived that CBT had a positive influence on undergraduate students performance. Lecturers perceived that the use of CBT saves lecturers stress of marking large number of answer scripts, marking is more accurate with CBT, reporting results minimizes error, gives students immediate feedback, makes students have confidence that their grades are secure and above all affords lecturers and students to be ICT compliant. This is in consonance with the findings of Abubakar and Odey (2015) who opined that the introduction of CBT examinations in tertiary institutions in Nigeria will afford both the lecturers and students opportunity to be ICT complaint which will go a long way to improve the web ranking of the universities among other world ranked tertiary institutions. Furthermore, Lukeman and Ogechi affirmed that CBT offers test developers the opportunity to improve their productivity and lead to innovation in their fields. Meanwhile the researchers were of the opinion that use of CBT in GS courses eliminated missing script syndrome. Further, the findings revealed that there is a significant difference between the mean perception of male and female lecturers on the usefulness of CBT in GS courses. Perception which is an important determinant of human behaviour seems to be positive or negative.

The result of this study in accordance with research question two and hypothesis two indicated that CBT halls for GS courses are conducive. Despite that, there are some infrastructural requirements of CBT in GS courses like erratic power supply, level of computer literacy of students, lack of ICT facilities, lack of funds to purchase computers, lack of facilities to assess practical skills. The result is in conformity with that of Joshua and Ikiroma (2013) who reiterated that CBT examinations are fault with erratic power supply and computer malfunctioning during examinations. Corroborating the assertion, Sanni and Mohammed (2015) affirmed that CBT lack facilities to assess practical skills in terms of creative abilities of students. The finding also revealed that there is no significant

difference between the mean perception of male and female lecturers on the infrastructural requirements of CBT in GS courses. Any difference that may have been observed was due to chance factor.

The findings of this study in accordance with research question three and hypothesis three indicated that there is no significant difference between the mean perception score of male and female lecturers on the competencies required by students for the use of CBT in GS courses. Researchers like Idika (2015) has noted that CBT model has been designed in such a way that any Nigerian child who can use mobile handset should be able to use the model to attempt any question using the computer. Ojerinde (2014) stressed that CBT is embraced as a positive change that will put the Nigerian child on the same pedestal with its counterparts abroad.

The result of this study in relation to research question four and hypothesis four showed that there is a significant difference in the mean perception of male and female lecturers in challenges associated with the use of CBT in GS courses. These challenges were among others; power failure when writing GS courses; loss of network connection during GS examinations; computer anxiety, time allotted to CBT examinations. This result is in consonance with researches carried out in the past. Joshua and Ikiroma (2013), Opara and Egbejule (2016) noted that power failure, computer anxiety among others were the major challenges associated to the use of CBT.

Conclusion

The study revealed that lecturers perceived that CBT had a positive influence on undergraduate students performance. It enhanced students performance and gave them immediate feedback. Nevertheless, CBT has some shortfalls in terms of infrastructural facilities, competencies required by undergraduates in the use of CBT in GS courses and challenges associated with the use of CBT in GS courses. CBT is a laudable innovative method of administering test hence all efforts should be geared to expose students to capacity building on general use of computer before subjecting them to CBT mode of assessment.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. CBT is a laudable innovation of assessment, and for its sustainability, good infrastructural facilities should be put in place before the commencement of GS courses examination in tertiary institutions.
2. Students should have a good knowledge of computer literacy in order to reduce computer anxiety and phobia.
3. Efforts should be made by the administrators of GS courses examination to avoid mix-up due to improper data base management thereby resulting to missing scripts.
4. Government policy on computer education at the primary and secondary school levels should be intensified to make all students computer literate from the grassroots.

5. The services of computer technologists should be engaged. This would make all computer gadgets for examinations to be overhauled before the commencement of CBT examinations.
6. Enough time should be allotted to CBT examinations, despite all limitations, to enable students have a fair examination administration.

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