WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Students' Perception in the Use of Computer-Based Assessment (C.B.A) in General Courses (G.S) in Colleges of Education in South East; A Case Study of Anambra and Imo

Chijioke Anthony Azodo

Department of Educational Psychology/ Guidance and Counselling, Nwafor Orizu College of Education, Nsugbe.

Sponsored
Tertiary Education Trust Fund (TETFund), Institution Based Research
DOI: https://doi.org/10.55248/gengpi.5.0224.0428

ABSTRACT

This study examined the Students' Perception in the use of Computer-Based Assessment (C.B.A) in General Courses (G.S) in Colleges of Education in South East; A case study of Anambra and Imo. The study adopted a survey research design. The population of the study is made up of students in both Colleges of Education making it a total of 200 respondents. A stratified random sampling technique was employed to select 200 students. The instrument for data collection was structured questionnaire which was validated by supervisor and two experts in measurement and evaluation. Data collected were analyzed using mean. Mean weight of 2.50 and above were accepted, while any one lower than 2.50 was rejected. The findings revealed students perception on the use of computer based test in examinations are as follows: Computer based test is better than paper and pencil exam, computer based test makes examination easy to write and mark, computer based test does not take time in displaying results, computer based test reduces tests/exam anxiety, and computer based test does not make room for cheating in examinations. The study revealed that problems encountered by students when using computer based test were inadequate power supply (Epileptic power supply), poor network connection during examination or test, and problems posed by insufficient supply of computers. The study revealed that the practices which should be introduced to improve the use of computer based test are as follows: provision of adequate power supply such as standby generators, enough computers should be provided for computer based test, provision should be made to enhance adequate internet connection in other to avoid network problems. The researchers made recommendations and conclusion was drawn.

***Key words**: Student, Computer, Test, Computer-based Test.*

INTRODUCTION

Information and communication technology (ICT) has become within a very short time, one of the basic building blocks of a modern society. This is because it adds value to learning and to the organization and administration of learning institution. It encompasses different types of technologies, which are utilized for capturing, processing and transmitting data and information using computer facilities. Information and communication technology (ICT) focuses specifically on the application of these new technologies in an educational context and environment. It also serves as a tool for supporting the various components of education, such components include among others, teaching and learning resources, management (human, material, financial resources) and admission and examination (Jim, 2014).

One of specific form of ICT for assessment is the Computer Based Testing (CBT) or Computer Based Assessment (CBA) or e-examination. E-assessment is the use of computer and its software to evaluate skills and knowledge in certain areas. It can range from online screen testing system that automatically mark learners test, to electronic portfolios where learner's work can be assessed and marked. Computer based assessment or e-examination can also be seen as a method of administering tests in which the responses are electronically recorded, assessed or both. The use of C.B.A. for entrance examinations in educational certification examinations by professional groups and promotional examinations in various stages and categories of life cannot be over emphasized. The popularity emerged through the post UME and university main examinations in Nigeria. Institutions are now maximizing the use of C.B.A. as a tool for undergraduate and post graduate assessments (Isaac, 2014).

This method of assessment is important because it measures different skills or sets of knowledge in order to provide new and better information about individual abilities. The C.B.A was initially designed to offset the many limitations of the paper based assessment (PBA) method used previously for conducting examinations. Presently, the predominant mode of students' assessment in Nigeria is still the traditional method. In this method, students are assessed using paper and pen on cognitive abilities. This method of assessment has imposed serious limitations to the effectiveness of the method (Benson, 2017).

The traditional method (Paper based assessment method) is characterized by various forms of examination malpractices and errors such as bringing in unauthorized materials, writing on currency notes and identity cards, copying from other candidates in examination hall, substitution of answer sheets and change of examination scores and grades. Others include impersonation, leakage of questions to students before examination, conniving with supervisors and school authorities to cheat, body writing or tattoo in which students, especially females write on hidden part of their bodies (Bector, 2012).

Jim, (2014) corroborates this by identifying the paper-based assessment (P.B.A) with many problems such as tedious manual processes and procedures, delays in the release of results, subjective scoring and missing grade among others. The use of e-examination by examiners is to curb examination irregularities. However the advantages of using computer technologies for educational assessment in a global sense have been recognized which include lower examination cost, time saving and less demand on examiners, teachers and others.

The challenge of computer based assessment test designer and administrators is to construct computer based assessment to be fair and reliable and always produce valid scores. It is also designed to minimize examination frustration and to limit the sources of examinees anxiety (Bector, 2012). This is because students' attitudes and feelings toward a test/ assessment is an important factor on test outcome. Therefore, providing key information about students' perception on C.B.A in examinations may enable improvement of the current use of C.B.A.

Concept of Computer

There are millions of definition on what a computer is by many scholars, dictionaries and educators. Oxford Dictionary (2012) defines it as an electronic device which is capable of receiving information (data) in a particular form and of performing of operations in accordance with a predetermined but variable set of procedural instruction (program) to produce a result in the form of information or signals. Cambridge Dictionary defines computer by listing it major function which state "Any electronic machine that can be used for storing, organizing, finding words, numbers and pictures, for doing calculations and for controlling other machines (Davis, 2013).

A computer can also be a mechanical device. A mechanical computer is built from mechanical components such as levers and gears. The most common examples are adding machines and mechanical counters; which use the turning of gears to increment output displays. More complex examples could carry out multiplication and division. Mechanical computers can be either analog, using smooth mechanisms such as curved plates or slide rules for computations or digital which use gears (Encarta, 2019). Some computers are electro-mechanical computers. Early electrically powered computers constructed from switches and relays rather than vacuum tubes (thermionic values) or transistors are classified into this group.

Student

A student according to Cambridge Advanced Learners Dictionary & Thesaurus (2014), is a person who is learning at a college or university. Nyerere, (2012) states that a student is a learner, or one who attends an educational institution. According to Obidigwe (2017) in some nations, the English term (or its cognate in another language) is reserved for those who attend high school (secondary schools) and higher schools (tertiary institutions like university, colleges of education, polytechnic, e.t.c) while a schoolchild under the age of eighteen is called a pupil in English (or an equivalent in other languages). However, for the purpose of this research, students here refer to learners in higher institutions.

Test

In education, the term test according to Ede and Aduwa, (2011) is otherwise called assessment, which refers to the wide variety of method or tools that educators use to evaluate, measure and document the academic readiness, learning progress, skill acquisition or educational needs of students. Assessments are developed by groups and individuals, which include teachers, district administrators, universities, private companies, state departments of education and groups that include a combination of these individuals and institutions (Fonts, 2012). While assessment can take a wide variety of forms in education, the following descriptions provide a representative overview of a few major forms of educational assessment (Ede and Aduwa, 2011)

Concept of Computer Based Test

Computer Based Test according to Obidigwe (2017) is the use of information technology in various forms of test such as educational test, health test, psychiatric test and psychological test. This may utilize an online computer connected to a network. This definition embraces a wide range of students' activities, ranging from the use of a word processor to on-screen testing. Specific types of e-test include multiple choice, online/electronic submission, computerized adaptive testing and computerized classification testing.

Computer based testing means many things to many people and comes under many different names and tittles. It embraces the use of information technology for any activity, which involves the assessment of skills, knowledge, understanding, competency or aptitude. It is used in formal qualifications to support learning to collect evidence of competency and achievement, in diagnostic testing of learning in many other similar application. In the broadest view it covers virtually all aspects of assessment activity where the computer is used to deliver a task, or set of tasks and questions, and then collect, store the response and allow them to be evaluated or marked. It could also involve capture of work originally on paper that scanned into a computer and then marked by some combination of human/ electronic markers (Linn, 2012).

Forms of Educational Test

a. High-stakes test: This is typically standardized tests used for the purposes of accountability i.e. any attempt by federal, state or local government agencies to ensure that students are enrolled in effective schools and being taught by effective teachers. In general "high stakes" means that important decisions about students, teachers. Schools or districts are based on the scores students achieve on a high stakes test, and either punishments (sanctions, penalties reduced funding, negative publicity, not being promoted to the next grade, not being allowed to graduate) or accolades (awards, public celebration, positive publicity, bonus, grade, promotion, diplomas) result from those scores.

b. Pre-test: This form of test is administered before students begin a lesson unit, course or academic program. Students are not necessarily expected to know most, or even any of the material evaluated by pre-test. They are generally used to (1) establish a baseline against which educators measure learning progress over the duration of a program, course or instructional period or (2) determine general academic readiness for a course, program, grade level or new academic program.

c. Formative Test: This is in-process evaluation of students' learning that is typically administered by teacher. The general purpose of formative test is to give educators in-process feedback whether students are learning or not learning so that instructional approaches, teaching materials and academic support can be modified accordingly. Formative test is usually not scored or graded and they may take a variety of forms, from more formal quizzes and assignments to informal questioning techniques and in-class discussions with student.

d. Summative Test: This is used to evaluate students learning at the conclusion of a specific instruction period –typically at the end of a unit, course, programme, e.t.c. Some schools usually organize mock WAEC or Jamb to know the capability of their students before they start the main exams.

e. Placement Tests: This used to 'place' students into a course, course level, or academic program.

f. Screening Test: This is used to determine whether students may need specialized assistance or services or whether they are ready to begin a course, grade level or academic program. Screening test may take a wide variety of forms in educational setting and they may be developmental, physical, cognitive or effective oriented (Davis, 2013).

Stages involved in use of Computer in Educational Testing

Where questions or tasks are delivered to the candidate via computer terminal, this typically involves some combination of the following six stages, namely:

1. **Develop:** The assessor develops and stores questions or tasks in an item back or repository.
2. **Produce:** He/ She selects a subset of questions or task and gather them together in an electronic paper assignment.
3. **Deliver:** He/ She displays computer stored question or tasks.
4. **Process:** He/ She collects responses from candidates in a controlled and secured manner.
5. **Mark:** The computer/marks the peoples' responses.
6. **Feedback:** He/ She returns results to candidates and administration systems (Pearson, 2011).

In fact, CBT fits into a range of areas of work, which include:

1. **E-learning**: This is used as the method of measuring progress on a course of study.
2. **Electronic Portfolios**: This is used as a means of developing and holding course work or material for a set of assignment.
3. **Computer based examination administration:** This is used to hold registration entries and results of qualifications, examination and tests.
4. **EDI and data transfer:** This serves as a means of transferring large volume of data between computer systems in a quick, fool proof and auditable manner.
5. **OMR:** This serves as data collection system.

Computer Based Test can be used as part of high stakes qualifications (such as publicly accredited qualifications) and low stakes test within the classroom, work place, Kruger and Heisser (2017). Wikipedia (2015) sees e-test as the use of information technology for any test related activity. This definition embraces a wide range of student activity ranging from the use of a word processing to on -screen testing (Adika, (2017).

Method and Purpose of Test

Test is one of the most significant areas of an educational system. It defines what a student takes to be important, how they spend much of their academic time and in many ways how they value themselves. Test can serve as a system employed to discover truth about an educational system, In addition, test is important because students cannot avoid it, and is now becoming the mode of assessing students' performance. Boud (2015) said, "students can, with difficulty, escape from the effects of poor teaching, they cannot (by definition if they want to graduate) escape the effects of poor test". Birenbaum (2018)

examined the relationship between students' learning patterns and their perception toward e-test which characterized by multiple choice examinations, among student in higher education. The results reveal two patterns of relationships between the learning-related variables and the perception. Dochy (2012) agreed that students with good learning skills, who have high confidence in their academic ability, tend to prefer the constructed response type of test over the multiple choice type and vice versa. The other pattern shows that low test anxiety measures were related to positive attitudes towards the open-ended e-test (OE) format. Students with high test anxiety, have more unfavourable attitudes towards the OE format and a preference to the choice response type. Rowntree (2017), declared that test procedures offers answers to the following questions; what student qualities and achievement are actively valued and rewarded by the system? How are its purposes and intentions realized? To what extent are the hopes and ideas, aims and objectives professed by the system ever truly perceived, valued and striven for by those who make their way within it?

Test has two main purposes; the first reason is to assist learning, the second is to determine the effectiveness of the education system. According to Linn, (2012) only with this can we as educators improve the education of our students. As tutors, we assess for a variety of reasons?

1. To pass or fail a student
2. To grade or rank a student
3. To select for future courses
4. To predict success in future courses
5. To provide a profile of what a student has learnt.
6. To diagnose student's strength and weaknesses.
7. To provide feedback to students and improve their learning
8. To help student to develop his/ her skills of self-test
9. To motivate student to provide feedback to a teacher.
10. To evaluate a courses strengths and weaknesses

Test that is summative may or may not include feedback. The main differences between this form of test and that which is formative is that grades are awarded. The grade will indicate performance against the standards set for the test task, and can either be part of in-course test or test at the end of a course. Boud (2015) says that test activities have to encompass formative test for learning and summative for certification. Summative and formative tests are not types of test but rather purposes to which test are put.

Challenges of Computer Based Test in Nigeria

Computer based test is still a new phenomenon in Nigeria. However, CBT in the conduct of examination in Nigeria poses a lot of challenges

These challenges have been categorized into ten factors for clarity and proper presentation below:

- **Economic factor:** ICTs remain a low financial priority in most educational systems in Africa. Most countries in the region lack resources for a sustainable integration of ICTs in education (Evoh,). This has made it difficult for Nigerian educational system to acquire and install ICT facilities for the use of teachers and students. Nigeria has over 6,000 public secondary schools. Majority are short of books, paper and pencils. Many of the schools lack adequate infrastructure such as classrooms and only few are equipped with television or radio. Apart from the basic computers themselves, other costs associated with peripherals such as printers, monitors, paper, modem, extra disk drives are beyond the reach of most schools in Nigeria. The schools cannot also afford the exorbitant internet connection fees (Aduwa-Ogiegbaen and Iyamu, 2015). Therefore, public budgets do not permit significant provision for these initiatives.
- **Security Factor:** Existing biometric and non-biometric e-examination system involved sending examination questions to the e-exam centre from the examination bodies, where operator will then enter the questions into the system. The biometric system consists of picture box and fingerprint scanner that collect the biometric data of the candidates (Olawale and Shafi'i, 2010). But due to the transferring of the question involved, the security of the system is at risk. There may be a higher risk of (e-) cheating, e.g. by hacking the database of the question items, a risk of total loss of examination data or a lower security of sensitive personal data is inevitable (Olumorin, Fakomogbon, Fasasi, Olawale, Olafare, 2013)
- **Poor ICT culture, policy & implementation:** The ICT revolution is yet to attain that critical mass required for it to register the necessary impact in the teaching, student and civilian population nationwide. Whilst Obafemi Awolowo University Ile-Ife,(OAU), University of Jos (UNIJOS), and the Federal College of Education in Omoku could be said to be in the vanguard, the majority of Nigeria's universities, polytechnics, nursing and midwifery schools, and colleges of education lack computers (Osei, 2017). The absence of policy has not helped co-ordinate ICT projects and programmes being carried out separately by various agencies operating in the education sector, and will lead to resource wastage and duplication (Osei, 2017). The Nigerian Federal Government's 1988 policy introduced computer education to the high schools (Okebukola, 2017; cited in Adomi and Kpangban, 2010). The only way this policy was implemented was the distribution of computers to federal government high schools, which were never used for computer education of the students. No effort was made to distribute computer to state government or private schools.

- **Poor ICT funding:** E-learning and ICT application to education in general may come of age in Nigerian schools. Schools in Nigeria are not given adequate funds to provide furniture, requisite books, laboratories and adequate classrooms let alone being given adequate funds for high-tech equipment (computers) and internet connectivity (Aduwa- Ogiegbaen & Iyamu, 2015). Many of the lecturers in these public institutions have to go to commercial cyber cafés before they can have access to a computer. The private universities are better, since majority of them, such as the ABTI-American University of Nigeria (AAUN) has 24-hours Internet connectivity on campus, and each student is provided a laptop with the cost factored into the fee structure (Osei, 2017).

- **Poor information infrastructure:** The lack of requisite telecommunications infrastructure capable of transporting multimedia messaging Osei, (2017) is another major challenge. Research confirms that one among the impediment to the use of ICT in Nigerian school is poor information infrastructure. It has been reported by South-Wood (2014) cited by (Adomi and kpangban, 2010) that more than 40% of the population of Africa is in areas not covered by telecom services. Schools located in such areas will experience ICT connectivity problem.

- **Power failure:** Lack of electric power and telecommunications infrastructure in a considerable part of the country is a problem. Mobile telecommunication currently covers 60% of the national territory, but mobile telephone companies generally power their base stations using private electric power generators since the Power Holding Company of Nigeria (PHCN) is unable to guarantee supply of power. This phenomenon is prevalent nationwide and constitutes the bottleneck to effective countrywide deployment of ICT in education (Osei, 2017). Computer equipment was made to function with other infrastructure such as electricity under "controlled conditions". For the past fifteen years, Nigeria has been having difficulty providing stable and reliable electricity supply to every nook and cranny of the country without success. Currently, there is no part of the country, which can boast of electricity supply for 24 hours in a day except probably Government Reserves Areas. In rural Nigeria, most inhabitants do not have access to electricity, thereby denying rural schools opportunity to benefit from the use of electronic equipment such as radio, television, video recorders and computers. The few Internet access available in Nigeria is found in urban centers. These environmental realities are difficult to manage because stable electricity are lacking in many urban homes and rural areas (Aduwa-Ogiegbaen and Iyamu, 2015).

- **Inadequate ICT manpower/skills:** Nigeria does not only lack information infrastructure, it also lacked the human skills and knowledge to fully integrate ICT into secondary school education. There is acute shortage of trained personnel in application software, operating systems, network administration and local technicians to service and repair computer facilities. Those who are designated to use computers in Nigeria do not receive adequate training, and at worst, do not receive any training at all (Okebukola, 2017; Anao, 2013). Most of the school teachers lack the skills to fully utilize ICT in curriculum implementation hence, the traditional chalk and duster approach still dominates in secondary school pedagogy. Information transfer using ICT is minimal or non-existence in secondary schools in Nigeria.

- **Software factors:** There is no doubt that the ultimate power of technology is the content and the communication. Software developers and publishers in the developed countries have been trying for long to develop software and multimedia that have universal application, due to the differences in education standards and requirements. However, these products do not integrate into curriculum across countries. Salomon (1989) cited in Aduwa-Ogiegbaen & Iyamu (2015), states that there are clear indications from many countries that the supply of relevant and appropriate software is a major bottleneck obstructing wider application of the computer. Even if Nigeria tries to approach this software famine by producing software that would suit its educational philosophies, there are two major problems to be encountered. First, the cost of producing relevant software for the country's educational system is enormous. Second, there is dearth of qualified computer software designers in the country.

- **Gender equity:** Nigeria is confronted with a persistent problem in girls' education, principally in the northern and rural areas, because of traditional beliefs and roles reserved for girls in the family and religious set-ups. This has prompted government to embrace gender equity programmes in education. However, school enrollment disparities still exist in the rural and northern areas (Osei, 2017). Students with insufficient computer literacy or differences in computer performance may be disadvantaged despite their expertise/understanding in the course content Obidigwe (2017).

- **Accessibility to the internet:** In Nigeria there are few Internet providers that provide Internet gateway services to Nigerians. Many of these internet providers (i.e. companies) provide poor services to customers who are often exploited and defrauded. The few reputable companies which render reliable services charged soaring fees thus limiting access to the use of the Internet. The greatest technological challenge in Nigeria is how to establish reliable cost effective Internet connectivity. In a country where only about 0.6% of the populace has home personal computers, the few reliable Internet providers who have invested huge sum of money in the business have a very small clientele. They have to charge high fees in order to regain their investment in reasonable time. Also, secondary schools in rural areas lack access to internet facilities due to adequate electricity supply. Nigeria is lagging behind other African countries such as Senegal, Uganda and South Africa who are already helping secondary school students to become better information users. Worst still, all Internet service providers in Nigeria are based in the urban areas (Aduwa-Ogiegbaen and Iyamu, 2015).

Prospects of Computer Based Test in the Conduct of Examination in Nigeria

Computer Based Test has many advantages over PPT testing both for states that run the test programs and for the students who participate in them. These advantages are recognized by the U.S. Department of Education, which is one of its major initiatives. Osei, (2017) has identified many positive prospects of this approach to test as follows. More efficient than paper-based tests, year-round testing, flexible scheduling, individualized testing environment, faster score reporting, within approximately two weeks of testing, immediate viewing of scores on screen, convenient to undergraduates, graduates and the larger university community, ability to access all tests that are demanded by students and the community at large

Statement of the Problem

Many challenges, difficulties and problems are being encountered while organizing examination using computer based method throughout developing countries like Nigeria. These difficulties have subjected the students to different views and perception towards the use of C.B.T. in schools, such challenges or problems include power interruption, unconducive centre, students' poor I.C.T. skills, and invigilators not being I.C.T compliant among others which more or less hampers students' performance. So putting all these negative variables together one can come to possible conclusion on the use of C.B.T in conducting examinations. It was against this backdrop that the research aims at examining the Students' Perception in the use of Computer-Based Assessment (C.B.A) in General Courses (G.S) in Colleges of Education in South East; a case study of Anambra and Imo.

Research Questions

The following questions guided the study:

1. What are the perceptions of the students on the use of computer based test in general courses?
2. What are the problems encountered by students when using computer based test?
3. What are to be done to improve the use of computer based test?

Theoretical Framework

This framework is based on certain theories which explain the general principles of computer and test that gives meaning to the study. These theoretical frameworks are discussed under the following sub-heading:

1. **Steinberg Theory of Computer Based Instruction (CBI)** by Steinberg Gagné in 1977
2. **Kember and Murphy Theory of Technology** by Kember and Murphy in 1990

Steinberg Theory of Computer-Based Instruction (CBI)

Theory of Computer-Based Instruction (CBI) was developed by Steinberg Gagné in 1977. CBI draws on learning theories, instructional models, practical experience and technology. For understanding how these domains contribute to computer-based instruction, Steinberg (1977) developed a six-component framework for computer-based instruction. Four components were derived from learning theories and instruction models: target population, goals, task, and instruction. Two of the components, computer application and environmental implementation, reflect research and experience with CBI. Steinberg synthesizes the theories of Gagné (1977) in developing his framework. Bransford's theory explored learning, remembering, and understanding from a process perspective. His framework consisted of four components: learner characteristics, criteria task, nature of materials to be learned, and nature of learning activities. He emphasized that the most significant idea underlying this framework is the interaction among components. From Steinberg's synthesis of Gagné's theories, she concluded that four components are central to learning, regardless of the theoretical perspective: target population (who is learning), goals (what they are supposed to learn), task (the materials and skills involved), and instruction (the externally planned activities). When one looks at the target population, there are many individual differences. The many characteristics of learners affect their ability to learn and to acquire new knowledge. An individual's subject-specific knowledge and general knowledge both affect comprehension. A general characteristic of all human beings is that they have a limited capacity to process information. Too much information presented simultaneously is not likely to be learned and remembered. Goals, the second component, are the expected outcomes of instruction. Goals in CBI may be lesson or computer determined. CBI goals include demonstrating knowledge or skill, engaging in a simulated experience such as decision making, learning how to learn, or influencing attitudes (Bransford, 1979).

Kember and Murphy Theory of Technology

Kember and Murphy in 1990 suggest that instructional design theory and educational technology have been rooted in behavioral psychology. Instruction designed based on behavioral learning theory has been limiting and that new theories should be consistent with constructivist theories of psychology and allow flexible, pragmatic development approaches. They believe that for meaningful and lasting learning to occur, greater attention should be given to the constructivist paradigm, and specific techniques need to be devised and implemented which encourage deep learning.

Approaches to instructional design need to be developed that don't just transmit knowledge, but are able to accomplish conceptual change in the student, that is, misconceptions in the learners need to be analyzed, and techniques devised to help them to overcome such problems. If teaching is the facilitation of learning, then efforts need to be concentrated on the learner rather than the instruction.

METHODOLOGY

The study adopted a descriptive survey research design aimed at determining the Students' Perception in the use of Computer-Based Assessment (C.B.A) in General Courses (G.S) in Colleges of Education in South East; A case study of Anambra and Imo. Nwana (2015) also explains survey research design as a design that facilitates the description of a situation in its current state and solicit information directly from the respondents which makes the

information more discrete and finite. In this study, sample of the entire population is studied and findings are expected to be generalized to the entire population.

The population of the study consists of all the students in both schools which comprises of 2678 students. Nwafor Orizu is made up 1013 students while Alvan Ikoku College of Education is made up of 1665 students. Hence the total population is made up of 2678 students. The institutions both have six schools namely: School of Arts and Social sciences, School of Languages, School of Vocational and Technical Education, School of Education and School of Early Child Care and Primary Education Studies. The instrument used for data collection is a structured questionnaire. The instrument was structured on a four point Likert rating scale of; Strongly Agree, Agree, Disagree and Strongly Disagree with the numerical values of 4, 3, 2 and 1 respectively. The questionnaire was made up of twenty one (21) items. The reliability of the questionnaire was established before use.

Research Question 1 What are the perceptions of the students on the use of computer based test in general courses

Table 1: Responses of the Perceptions of the Students on the Use of Computer Based Test in General Courses

N: 200

S/N	Questionnaire Items	SA	A	D	SD	$\overline{X}$	Remarks
1.	Computer based test is better than paper and pencil examination.	75 300	84 252	21 42	20 20	3.07	Agree
2.	Computer based test makes examination easy to write and mark	71 284	89 267	13 26	27 27	3.02	Agree
3.	Computer based test does not take time in displaying results.	85 340	65 195	23 46	27 27	3.06	Agree
4.	It is an interesting technique used in examination.	61 244	69 207	39 78	31 31	2.80	Agree
5.	Computer based test reduces tests/exam anxiety.	89	80	22	9	3.25	Agree
6.	The use of CBT causes loss of confidence while attempting the questions.	14 56	16 48	80 160	90 90	1.77	Disagree
7.	Computer based test does not make room for cheating in examinations.	50 200	58 174	46 92	19 19	2.56	Agree

The result presented in Table 3 showed that items 1, 2 , 3, 4, 5, 6 and 7 scored above were rated high by the respondents. This was clearly indicated from their respective mean score of 3.07, 3.02, 3.06, 2.80, 3.25, 3.23, 2.56 respectively, which are above the criterion of acceptance fixed at 2.5 and above.

Research Question 2: What are the problems encountered by students when using computer based test?

Table 2: Responses of Students on the Problems Encountered by Students when Using Computer Based Test.

N 200

S/N	**Item**	**SA**	**A**	**D**	**SD**	$\overline{X}$	**Remarks**
8	Inadequate power supply (epileptic power supply)	88 352	77 231	24 48	11 11	3.21	Agree
9	The use of faulty computers in computer based test which affects performance negatively	76 304	85 255	30 60	9 9	3.14	Agree
10	Poor network connection during examination or test	61 244	52 156	53 106	34 34	2.70	Agree
11	Inadequate knowledge of computer by the students	72 288	88 264	31 62	9 9	3.12	Agree
12.	Phobia on the use of computer by the students	84 336	75 225	30 60	11 11	3.16	Agree
13.	Inadequate number of trained personnel to guide the students during test or examination.	89 356	88 264	21 42	2 2	3.32	Agree
14.	Problems posed by insufficient supply of computers	90 360	87 261	15 30	8 8	3.30	Agree

The result presented in Table 4 showed that items 8, 9, 10, 11, 12, 13 and 14 scored above were rated high by the respondents. This was clearly indicated from their respective mean score of 3.21, 3.14, 2.70, 3.12, 3.16, 3.32 and 3.30 respectively, which are above the criterion of acceptance fixed at 2.5 and above.

Research Question 3: What are to be done to improve the use of computer based test?

Table 3: Responses of students on the practices that can be introduced to improve the use of Computer Based Test.

N: 200

S/N	Item	SA	A	D	SD	$\bar{X}$	Remarks
15.	Provision of adequate power supply such as standby generators.	125 500	75 225	-	-	3.63	Agree
16.	Enough computers should be provided for computer based test	72 288	88 264	31 62	9 9	3.12	Agree
17.	Provision should be made to enhance adequate internet connection in order to avoid network problems	84 336	75 225	30 60	11 11	3.16	Agree
18.	Faulty computers should not be given to candidates during computer based test	89 356	88 264	21 42	2 2	3.32	Agree
19.	Trained personnel with adequate computer knowledge should be employed to supervise and guide the students during CBT	90 360	87 261	15 30	8 8	3.30	Agree
20	The study of computer should be made compulsory in lower level of education (primary and secondary)	125 500	75 225	-	-	3.63	Agree
21.	There should be constant computer practical lessons to help students get use of computers	72 288	88 264	31 62	9 9	3.12	Agree

The result presented in Table 5 showed that items 15, 16, 17, 18, 19, 20 and 21 scored above were rated high by the respondents. This was clearly indicated from the their respective mean score of 3.16, 3.32, 3.30, 3.63, 3.12 respectively, which are above the criterion of acceptance fixed at 2.5 and above

Summary of the Major Findings

Based on the analysis of data, the following findings were made:

- The study revealed findings on the students perception on the use of computer based test in examinations are as follows: Computer based test is better than paper and pencil examination, computer based test makes examination easy to write and mark, computer based test does not take takes time in displaying results, computer based test reduces tests/exam anxiety, they always lose their confidence while attempting the questions using computer based test and computer based test does not make room for cheating in examinations.
- The study revealed that problems encountered by students when using computer based test are as follows: inadequate power supply (Epileptic power supply), the use of faulty computers in computer based test which affects performance negatively, poor network connection during examination or test, inadequate knowledge of computer by the students, students have phobia on the use of computer for examination, inadequate number of trained personnel to guide the students during test or examination and problems posed by insufficient supply of computers.
- The study revealed that the practices which should be introduced to improve the use of computer based test are as follows: provision of adequate power supply such as standby generators, enough computers should be provided for computer based test, provision should be made to enhance adequate internet connection in other to avoid network problems, faulty computers should not be given to candidates during computer based test, trained personnel with adequate computer knowledge should be employed to supervise the students during computer based test, the study of computer should be made compulsory in lower level of education (primary and secondary) and there should be constant computer practical lessons to help the students.

Conclusion

It can be seen from the findings that the perceptions of students on the use of computer based test in examinations are as follows: Computer based test is better than paper and pencil exam, it reduces tests/exam anxiety and computer based test does not make room for cheating in examinations.

Finally, the study concluded that the practices that are useful to improve the use of computer based test are as follows: there should be provision of adequate power supply such as standby generators, enough computers should be provided for computer based test, provision should be made to enhance adequate internet connection in other to avoid network problems, faulty computers should not be given to candidates during computer based test, trained personnel with adequate computer knowledge should be employed to supervise the students during computer based test, the study of computer should be made compulsory in lower level of education (primary and secondary) and there should be constant computer practical lessons to help students.

Recommendations

The following recommendations were made based on the findings of the study:

1. Government should make provision of constant power supply in tertiary institution in Nigeria in order to make use of computers for examinations.

2. Computer education should be made compulsory from lower level to higher level of education and students should be allowed to use computer always in order to be acquainted with it.
3. Seminars and workshops should be organized for lecturers and non-teaching staff of higher institutions on information and communication technology (ICT).
4. Government should adequately provide computers in schools and there should be good network connection of the computers.
5. The students should be trained on the use computer based test software in writing examination.

REFERENCES

Adegbija, M.V., Fakomogbon, M.A. & Daramola, F.O. (2012). The New Technologies and the Conduct of E-Examinations: A Case Study of National Open University of Nigeria. *British Journals* ISSN 2047-3745. 3 (1), 60-61.

Adekanmbi, H.D (2014). Opportunity to learn: Implications for professional development. *Journal of Negro Education*, 2 (3) *62*, 311-323.

Adika, L. O. (2017). An assessment of secondary school teachers Uses of ICT'S: implications for further development of ICT'S Use in Nigerian secondary schools. *The Turkish Online Journal of Educational Technology – TOJET 6(3)34-53.*

Adomi, U & kpangban S.A. (2010). Assessment of Total Quality Management Practices and Organizational Development: The case of Telecom Services Sector of Pakistan. *Mediterranean Journal of Social Sciences 2(2) 12-17.*

Aduwa-Ogiegbaen, S. E., & Iyamu, E. O. S. (2015). Using Information and Communication Technology in Secondary Schools in Nigeria: Problems and Prospects. *Educational Technology & Society*, 8 (1), 104-112.

Alabi, A. T., Isaa, A. O., & Oyekunle R. A. (2012). "The Use of Computer Based Testing Method for the Conduct of Examinations at the University of Ilorin", *International Journal of Learning & Development*, ISSN 2164-4063 2012, 2(3) 91-102

Anao, D. (2013). *Science and technology education in Africa: Focus on seven sub-computer application*. Enugu: Pearson Education limited.

Andrew, L.W., & Taylor, B.J (2010). *Classroom environment study*. Oxford: Pergamon press.123-134.

Audette, B. (2015). Beyond curriculum alignment: How one high school is using student assessment data to drive curriculum and instruction decision making. Retrieved 1/15/06 from: *www.http://functionaleducation.com.ng/html*

Ayo, C.K Akinyemi, I.O Adebiyi, A.A & Ekong, U.O (2017). "The prospects of e- examination implementation in Nigeria", *Turkish Online Journal of Distance Education,* 8(4) 125-134.

Bector, H. (2012). *The Impact of Information and Technologies on Pupil Learning and Attainment*. Lagos: Longman Nigeria. 72-84.

Benson, M. (2017). *Impact of ICTs on Open and Distance Learning in a Developing Country Setting.* New York: Lexicon International Publishers. 283-296.

Birenbaum, S.D. (2018). The equivalence of paper-and-pencil and computer- based testing. *Journal of Research in Computer Education*, *28*(3), 282–299.

Boud, D . (2015). Enhancing Learning through Self Assessment.London: Kogan 78-88.

Bransford, J. D. (1979). *Human cognition.* Belmont, CA: Wadsworth.

Davis, P.C (2013). *Technostress: The Sign of the Time*. Nsukka: Deepspring Printing Press.125-128

Dochy, F. (2012). The relation between assessment practices and outcomes of studies: the case of research on prior knowledge, *Review of Educational Research*, 69(2), 147–188.

Ede, O. S. I. & Aduwa O. S. E. (2011). Assessment of the use of educational technology by social studies teachers in secondary schools in western Nigeria. *International journal of instructional media,* 19(4) 15-21.

Encarta Dictionary (2009). "Application of Technology Knowledge in learning" *www.businessdayonline.com* Assessed on 10th September 2013.

Federal Republic of Nigeria (2014). *National curriculum for Social studies*

Fonts, J. (2012). "Research on Computers and Assessment in Education: Past, Present and Future". Retrieved 30 October, 2012 *www.education.com*

Gagné, R. M. (1979). *The conditions of learning* (3rd ed.). New York: Holt, Rinehart, and Winston. *http://www.nesinc.com/PDFs/2005_07Audette.pdt*

Isaac, B. (2014). *The Challenges Facing Teaching and Learning of ICT in Senior High School: A Case Study in the Bekekum, Manicipality.* New York: Longman 63-69.

Jamil, M., Tariq, R. H., & Shami, P. A. (2012). Computer-Based Vs Paper-Based Examinations: Perceptions of University Teachers. *The Turkish Online Journal of Educational Technology, 11(4): 371 – 381.*

Jim, G. & Sean S. (2016) *Social Media and Youth Development.* Assessed on 11th September 2000.

Jim, G. (2014). *The Genesis of English Language.* London: New York University press.

Johnson, O. & Aragon, (2002). Challenges of Teaching and Learning with Computers.Retrieved from *http://www.itnetwork.org.uk/56.htm.*

Johnson, S. D., & Aragon, S. R. (2012). *An instructional strategy framework for online learning environments.* In T. M Egan & S. A. Lynham (Eds.), *Proceedings of the Academy of Human Resource Development Annual Conference (41-1).* Bowling Green, OH: Academy of Human Resource Development.

Kazi A.S. (2014), *World Development Report: Knowledge for Development. New York*: Oxford University press.

Kemper, D., & Murphy, D. (2010). Alternative new directions for instructional design. *Educational Technology, 30(4), 42-47.* Kern, G. M., & Matta, K. F.

Kissocks R. (2017). *Learning Continuing Education Technologies for Adult*, 28(2) 121-133.

Kruger, D. W., & Heisser, M. L. (2017). Student outcomes assessment: What institutions stand to gain. In: D.F. Halpern (Ed.), *Student outcomes assessment: What institutions stand to gain. New Directions for Higher Education* 45-56, San Francisco: Jossey-Bass.

Linn, R. (2012). .Assessment and accountability. *Educational Researcher, 29* (2), 4-16.

Mwalongo, A. (2011). Teachers' perceptions about ICT for teaching, professional development, administration and personal use. *International Journal of Education and Development using Information and Communication Technology (IJEDICT),* 2011, 8(3), pp. 36-49.

Nwana .E. (2015). *Research Design: Qualitative ,Quantitativeand Mixed Approaches.(third Ed.).* London: Sng Publication .Inc *3(6) 15-19*

Nworgu, B. G. (1991), educational research: basic issues and methodology. (2nded). Nsukka: university trust publishers.

Nyerere, G. (2012), *philosophy and education in e. M. Nwabuisi (ed), philosophical and Sociological foundations of Education*. Ibadan: Heinemann Educational Books (Nigeria) Ltd.

Obidigwe, I. E. (2017). *Scientific Learning of Computer in Higher Education*. Benin: Benin Educational press.

Ojo, I.M (2014) *investigated the prospects and challenges that will pose threats to the success of adopting CBT in all examination and how to neutralize them.*

Okebukola, A. (2017). Instructional Technology in Higher Education: A case of Selected Universities in Nigeria Delta. *Journal of Asia-Pacific Forum on English LanguageLearning Technology.* 10(2): 7-8.

Okebukola, M.O.G (2017). Computer Exploration in Academic performance in English Language. *The Nigerian Teacher Today*. 18 (182) :77-83.

Okebukola. H. (2012), *Effects of instructional media on the academic. Achievement of students in Business Education in Junior Secondary Schools:* Abeokuta: PNLA Quarterly-Pacific Northwest Library Association.