

## **LECTURERS' PERCEPTION OF THE USEFULNESS OF COMPUTER-BASED EXAMINATION IN TERTIARY INSTITUTIONS IN EDO STATE, NIGERIA**

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**ABSTRACT:** *This study investigated lecturers' perception of the usefulness of computer-based examination in tertiary institutions in Edo State, Nigeria. Three research questions guided this study while one hypotheses was tested at 0.05 level of significance. The study adopted the descriptive survey research design. The population of this study was 1,480 lecturers in three tertiary institutions in Edo State. A sample of 148 lecturers was chosen for this study. The instrument used was the researcher designed questionnaire titled: "Lecturers Perception on the Use of the Computer-Based Examination Questionnaire (LEPUCBETEQ)". The instrument was validated by the researchers with assistants of two other experts in Educational Management. The reliability test was carried out on the instrument using test-re-test reliability method and a reliability index of 0.82 was obtained. The data collected were analyzed using percentage and one way analysis of variance. The findings of the study showed that the lecturers had positive perception on the use of the CBE by students and that lecturers had positive perception on students' acceptability of the use of computer-based examination and that no significant difference exist in lecturers' perception of the use of CBE as a mode of assessment of the students in the tertiary institutions based on school type. It was recommended that Vice-Chancellors of universities, Rectors of polytechnics and Provosts of Colleges of Education should introduce Computer-Based Examination in their schools as mode of students' assessment and that government as proprietors of these institutions should endeavour to provide the necessary ICT facilities for the full implementation of CBE in the tertiary institutions.*

**KEYWORDS:** Lecturers' Perception, Usefulness, Computer-Based Examination, Tertiary Institutions

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### **INTRODUCTION**

Education is an inevitable key to the socio-economic development of any nation of which Nigeria is not an exception. Nelson Mandela (1918-2014), former president of South Africa, presents education as 'the most powerful weapon to change the world'. Education is a means through which we can rebuild our own nation. The importance of education to any society or country therefore, cannot be underestimated. Education fosters the worth and development of the individual, for each individual's sake and for the general development of the society. Education is seen as an instrument that fosters national development and as a tool for achieving the national goals of Nigeria which include: building a free and democratic society; a just and egalitarian society; a united, strong and self-reliant nation; a great and dynamic economy and a land full of bright opportunities for all citizens (Federal Republic of Nigeria (FRN), 2013). By extension, education leads to not only the individual's development but the development of the society as well.

Tertiary education according to FRN (2013) is the education that is given after secondary education in Universities, Colleges of Education, Polytechnics, Monotechnics including institutions offering correspondence courses. The goals of tertiary education according to the National Policy on Education include (a) contribution to national development through high level relevant manpower training; (b) providing accessible and affordable quality learning opportunities in formal and informal education in response to the need and interests of Nigerians; (c) providing high quality career counselling and lifelong learning programmes that prepare students with the knowledge and skills for self-reliance and the world of work; (d) reduction of skill shortages through the production of skilled manpower relevant to the needs of the labour market; (e) promotion and encouragement of scholarship, entrepreneurship and community service; (f) forging and cementing of national unity; and (g) promotion of national and international understanding and interaction.

In order to achieve these national aspirations and tertiary education goals, examination which is still seen as the best tool for assessment of learners should not be compromised. According to Jimoh (2009), examination still remains the best tool for objective assessment and evaluation of what learners have acquired over a period of schooling, thus any action or inaction poses a great danger to the validity, reliability and authenticity of examination results and certificates. It is generally recognized that examinations determine the extent to which educational objectives have been achieved as well as the extent to which educational institutions have served the needs of the learners, community and society. Examinations are not limited to measuring educational or societal objectives and needs, but incorporate in a way of coping with the educational system. This is why Rehmani (2003) posited that ‘examinations play a significant role in determining what goes on in the classroom in terms of what, and how teachers teach and students learn and can have impact on both teaching and learning’.

Therefore, the conduct of examination is a critical factor in the realization of educational objectives in any society. The relevance of examination to the teaching and learning process cannot be overemphasized. Examination still remains a major means of assessing the learner’s ability and also determining the extent of accomplishment of the teacher’s goals and objectives of a course. Regardless of the level of education, examination serves many useful purposes: such as promotion, classification or placement, employment, appointment and award of scholarship, among others. Examination is the measurement of proficiency in knowledge and skills, either in oral or written forms. Examination is the pivot around which the whole system of education evolves (Akpan, 2011 & Ajibola, 2011).

Conducting examinations for learners for the purpose of evaluating them on a course of study has been observed to be characterized with many challenges, such as examination malpractices, poor time management by the examiners, inadequate invigilators, poor condition of examination venues, and bias in marking examination scripts by the lecturers, delay in the release of results, among others. Most prominent of all these, are examination malpractices and delay in release of results. Examination malpractice is a threat to the national education goals as it undermines the authenticity and validity of certificates issued. It undermines the goals of examination in adequately assessing the academic performances of students.

In other to reduce the rate of examination malpractices, bias in marking examination scripts, delay in release of results, among others, computer based examination is been advocated for in the

tertiary institutions in Nigeria, and in Edo State in particular. There is a growing increase in the use of computers for assessment purposes within tertiary educational institutions globally. Examination is one of the best methods of evaluating the knowledge and ability of an individual. To this end, various methods have been employed in examining the ability of an individual, starting from manual means of using Paper and Pencil Test (PPT) to Computer-Based Examination (CBE), from oral to written, theoretical to practical and many others. Computer-Based Examination (CBE) is a way of conducting examinations with the use of computer as instrument. The CBE is a way or method of evaluating learners in a supervised or non-supervised environment. Computer-Based Examination is a way to increasingly provide a quick method of marking summative assessment for a large group of students. Computer-based examination is the logical extension of computer enhanced learning (McConnell & Schoenfeld-Tachner, 2001).

The predominant mode of evaluating students in tertiary institutions in Nigeria is the paper based test. In this method, students are assessed using paper and pen and all other necessary materials. The PPT in Nigeria may be characterized by different forms of challenges, among which are examination malpractices such as bringing in unauthorized materials, writing on currency notes and identity cards, spying on other candidates in examination hall, substituting of answer sheets and change of examination scores or grades. Others may also include: impersonation; leakage of questions to students before the examination; convincing the supervisors and school to cheat; body writing or tattoo in which students especially females write on hidden parts of their bodies.

The successes of the change from one examination method to the other depends on the extent and ability of testing professionals to communicate the benefits and limitations of the test method to stakeholders and the use of computers for assessments. It is on this note that Oladipo (2009) concludes that Computer- Based Examination (CBE) is a system which spurs development in the education as well as other sectors of the economy. The CBE usually assists to ensure that the candidate's identity in the examination hall is efficiently cross-checked.

In the past few years the number of students' enrollment in the tertiary institutions has increased tremendously and the traditional educational examination method make marking stressful for lecturers and time consuming in terms of the examination time for evaluation and assessment. A solution of examination in large classes of students is the automated testing system which had not yet been fully introduced by institutions in the country. The pitfalls of PPT which includes subjective scoring, plausible manipulations of results, late release of results and missing grades, does not exist in the use of CBE, hence, the advantages to CBE over PPT mode of assessment includes instant feedback to students, improved impartiality, improved reliability (machine marking is much more reliable than human marking, measurement efficiency, test security, among others).

The use of CBE for entrance examinations in education, military training and examinations for award of certificates by professional groups and promotional examinations at various stages and categories of life cannot be overemphasized. Erle, Benjamin, Einar and Raymond (2006), noted that CBE had gained popularity as a means of testing with large scale professional examinations such as the United States Medical Licensing Examination (USMLE). The inclusion of Information and Communication Technology (ICT) in the education system used for data storage of students' information and admission process and other relevant academic activities such as on-line application and admission should create room for rethink to change the traditional examination methods. Computer and related technologies provide powerful tools to meet the new challenges

of designing and implementing assessment methods that go beyond the conventional practices and facilitates to record a broader repertoire of cognitive skills and knowledge.

The perception of lecturers on the use of CBE in the conduct of examination in tertiary institutions in Nigeria is germane to this study. Lecturers over the years could be of different opinions, following the researcher's interview with some cross section of the academic staff. Some seemed to be of total support of the CBE as a mode of assessment while some seemed to still prefer the PPT mode of testing. It was therefore important to ascertain if lecturers' perception on the use of the CBE are based on school type. It is believed that school type that is, universities, polytechnics and colleges of education could influence their perception on the use of CBE for students' assessment. University lecturers may differ significantly in their perception on the use of CBE to their counterpart lecturers in Colleges of Education and Polytechnics and vice-versa. This perhaps is as a result of the level of ICT integration in the respective institutions and the level of access to the facilities by staff and students in those institutions. It was in the light of the above that this study assessed lecturers' perception of the use of CBE in the tertiary institutions in Edo State, Nigeria.

### **Statement of the Problem**

The search for adequate and appropriate methods of conducting examinations in schools has continued to pose challenges to stakeholders of the education sector. Conducting examinations in tertiary institutions of learning in the country has always been a major course for worry as the process is characterized with examination malpractices, poor time management by the examiners, inadequate invigilators, poor condition of examination venues, bias in marking examination scripts by the lecturers, delay in the release of results, problem of managing large number of students, among others. Examination malpractice is also a common practice by students, teachers and parents in institutions (Philemon, 2007).

It is often observed that there are delays in the marking of students' scripts and submission of such results for processing. Cases of missing results are common in the tertiary institutions due to the method of assessment. These problems most times retard the students from graduating at the stipulated time thereby leading to educational wastages. Some students might have been demoralized as a result of delay in the computation of their results. Alteration of result scores and illegal upgrading of results may have characterized the practices of many tertiary institutions in Nigeria which further reduces the authenticity of the certificates awarded in these institutions. What are, therefore, the perceptions of lecturers on the use of CBE as mode of assessment of students in tertiary institutions in Edo State? Although several studies have been carried out in the area of computer-based testing, no study has been undertaken in tertiary institutions in Edo State on the lecturers' perceptions of the use of computer-based examination. Hence, a knowledge gap exists in literature which this study sought to fill.

### **Purpose of the Study**

- (a) find out the perception of lecturers on the use of the CBE by students in the tertiary institutions in Edo State;
- (b) find out lecturers' perception on the students' acceptability of the CBE in the tertiary institutions in Edo State; and
- (c) determine if the lecturers differ in their perception of the use of the CBE as a mode of assessment of the students according to school type.

### **Research Questions**

- (a) What is the perception of the lecturers' on the use of the CBE by students in the tertiary institutions in Edo State?
- (b) What is the lecturers' perception of the students' acceptability of the computer-based tests in the tertiary institutions in Edo State?
- (c) To what extent does school type influence lecturers' perception on the use of the CBE as a mode of assessment of the students in the tertiary institutions in Edo State?

### **Hypothesis**

School type do not significantly influence lecturers' perception of the use the CBE as a mode of assessment of the students in the tertiary institutions in Edo State.

### **LITERATURE REVIEW**

The rapid advancement of Information and Communication Technologies (ICT) in teaching and learning has shifted in paradigm from paper-pencil-based to computer-based system of examinations which are usually termed as Computer Assisted Testing, Computerized Assessment, Computer Based Examination (CBE), Computer Aided Assessment (CAA), Computer Based Assessment (CBA), Online Assessment, E-Assessment and Web-Based assessment (Uysal & Kuzu, 2009). Computer – based examinations are the form of assessment in which the computer is an integral part of question papers' delivery, response storage, marking of response or reporting of results from a test or exercise (Whittington, Bull & Danson, 2000). Electronic assessment tools had reduced the burden of teachers and facilitate to conduct examinations purposefully.

The use of computer-based examination in conducting examinations and other related tests in tertiary institutions are being emphasized by stakeholders of the education sector. This is because of the advantages the CBE is said to have over the other modes of evaluation especially in curbing examination malpractices and the rate of feedback process. It becomes important that the perception of lecturers who among other staff of the institutions who apply this method on the recipients (students) be put into consideration. Citigrad Technologies (2015) assert that the computer-based testing is the solution to curbing examination malpractices and also provide an avenue to conduct examinations in a standardized environment that conforms to international standards. It is a paperless end-to-end process for conducting tests and assessments. Scoring, grading and collation of results are done online at real-time and alterations cannot be made upon completion of exams.

Nyagorme, Qua-Enoo, Bervell and Arkorful (2017) investigated the awareness and use of e-learning platforms in some selected senior high schools in the Accra metropolitan area of Ghana with emphasis on parameters such as perception, training, accessibility, and infrastructural availability. Questionnaire was used to sample 303 respondents in this descriptive survey. Linear regression analysis and correlation were used on participants' training, motivation and computer availability in relation to perception, e-learning usage and awareness of e-learning implementation. The findings suggest participants know of e-learning and e-learning platforms but lacked adequate training. The computer literacy was low and most schools lacked adequate ICT laboratories and reliable internet negatively affects e-learning adoption. The major mode of internet access was the mobile phones. Students had a positive perception of e-learning and its adoption. The study recommends among other things that the Ghana Education Service train and educate teachers and students on e-learning to enhance their use and/or development of e-learning



platforms. Furthermore, it should provide properly furnished ICT laboratories enhance accessibility and e-learning.

Edumadze, Ossei-Anto, Edumadze, Tamakloe, Asamoah and Boadi, (2014) assessed the awareness and perceptions of lecturers in using e-learning tools for instructional delivery in the University of Cape Coast. Specifically, the study sought to investigate the state of the awareness and perceptions of lecturers in incorporating e-learning tools in their lesson preparation and delivery. The target population was lecturers of UCC and responses were obtained from 128 lecturers who were randomly sampled for the study. The study revealed among other things that, many lecturers fail to use e-learning tools because they are not proficient in using them. Nevertheless, they are ready or willing to participate in programmes to equip them with the requisite skills that will make them proficient in using the e-learning tools. The study recommends among other things that the Computer Centre of the University should educate the lecturers on e-learning and give them the necessary training that will equip them in using the e-learning platform (Moodle) that the university had installed since 2007. Also, the University should provide reliable Internet and computer access coupled with adequate technologically enhanced classrooms and laboratories to facilitate the integration and use of e-learning tools by lecturers in their instructional delivery.

Sanni and Mohammad (2015) examined the Computer-Based Examination (CBE): An assessment of students' perception of JAMB UTME in Nigeria. The research was to assess the students' perception on the use of computer based testing in examinations. The survey research method was adopted. A total of 300 questionnaires were administered to students who participated in the 2014 UTME at the Ahmadu Bello University (ABU) and 237 of the questionnaires were adequately completed and found usable representing 79%. The findings revealed among others that majority of the respondents confirmed that the CBE could curb examination malpractice. The majority of the candidates were also found to prefer the CBE to the PPT mode of writing exams. It was however recommended that JAMB should adopt the CBE mode of assessment in their subsequent examinations, because it curbs examination malpractice, it is more efficient and solve the problems of delay and non- release of examination results. Students should be sensitized about the new mode of assessment.

Anzene (2014) carried out a study and investigated lecturers' perceptions of the usefulness; ease of use and credibility of the CBE in Nigerian universities. The study adopted survey method of descriptive research. Sample was drawn from the lecturers from four Nigerian universities: Covenant University; Kogi State University; University of Ibadan; and University of Ilorin. A total of 850 lecturers represented the sample for the study. The data were analysed using percentage and mean to answer the research questions. The study revealed that lecturers had positive rating on perceived usefulness (65.1%), ease of use (65.2%), and credibility (70.2%) of CBE. The study concluded that lecturers perceived the CBE as useful, easy to use and credible. The implication was that the perception of the usefulness, the ease of the use and the credibility of the CBE would lead to increase in the use of CBE by lecturers in Nigerian universities. It was recommended among others that Nigerian universities should improve the efficiency of the computer-based examination to increase its credibility. Lecturers should be more encouraged to constantly use the CBE while conducting their tests and examinations not minding the number of students.

Okpala (2014) asserted that Computer- based examination (CBE) was an efficient way to providing a secure, consistent environment for assessment. Awosiyan (2010) quoting Prof. Olu Jegede, the former Vice-Chancellor of National Open University of Nigeria (NOUN), said that e-examination was introduced to address series of anomalies being encountered in the manual tests. He said that the e-examination would remove all human errors recorded in manual examination and create opportunity for students to access their results immediately. With the total conduct of the 2015 JAMB UTME examination (Nigeria's tertiary institutions entrance examination) by the CBE, the e-examination has come to stay in Nigeria.

The perception of lecturers on students' acceptability is an important aspect to be considered in this study. A large body of literature already exists on online assessment using computers and paper, and the attitude and preferences of stakeholders. Research outcomes have supported the fact that when students are motivated and testing conditions are equivalent, there are no differences between the scores obtained via CBE or PPT (Alabi, Issa & Oyekunle, 2012). From students' perspective of the CBE there have been a number of mixed reactions. Researchers have shown that more people anticipated problems with the computer assisted assessment than actually had them (Erle, Benjamin, Einar & Raymond, 2006). Their research also showed that despite fewer students being confident about CBE before completing the assessment more students stated a preference for CBE afterwards. Previous study conducted indicated a preference for CBE over PPT (Jimoh, Shittu & Kawu, 2012).

Jimoh, Shittu and Kawu (2012) carried out a research on students' perception of computer- based-examination (CBE) for examining undergraduate chemistry courses in university of Ilorin. The sample for the study was 48 students who had taken tests on CBE in chemistry and the instrument used for data collection was the questionnaire. The data analysis shows optimistic characteristics of the target context for the CBE implementation as majority (95.8%) said they were competent with the use of computers and 75% saying their anxiety was only mild and low, but notwithstanding, they have not fully accepted the testing mode with only 29.2% in favour of it due to the impaired validity of the test administration which they reported as being many erroneous chemical formulas, equations and structures in the test items even though they have nonetheless identified the achieved success the testing has made such as immediate scoring, fastness and transparency in marking.

Okocha, Toluwani and Owolabi (2017) examined perception and acceptance of computer based testing: A case study of Landmark University Students. Three hundred (300) questionnaires were distributed, of which 168 were returned and analyzed. Descriptive analysis and Regression analysis were carried out using the Statistical Package for Social Science Software (SPSS). Result revealed that the acceptance rate of Computer Based Testing by students is high, though majority of the students were in support of training prior to taking assessments. Also, the acceptance rate of Physics and Chemistry assessments were relatively low compared to other courses. The study also reported sex differences in the acceptance of CBE and also discovered that College of Study determined the acceptance of CBE. This study has implications for university administrators to ensure that assessments align with the international guidelines for computer testing and also the need to consider the interface design in Physics and Chemistry assessments.

Ogunlade and Olafare (2014) conducted a study on lecturers' perception of computer based examination in Nigerian universities. The study adopted the descriptive research. The sample of the study was drawn from four Nigerian universities: Covenant University; Kogi state University;

University of Ibadan; and University of Ilorin. And a total of 850 lecturers represented the sample for the study. The study revealed that lectures had positive rating on perceived usefulness (65.1%), ease of use (65.2%), credibility (70.2%) of CBE. It was recommended that Nigerian universities should improve the efficacy of computer based test to increase the credibility and that lecturers should be more encouraged to constantly use the CBE while conducting their tests and examinations not minding the population of the students.

## **METHOD AND PROCEDURE**

This study adopted the descriptive survey research design. This design was descriptive because it investigated lecturers' perception of the use of Computer-Based Examination (CBE) in tertiary institutions in Edo State. This method was considered appropriate because it enabled the researcher to use a representative sample of lecturers that accurately captured and assessed the entire population of the study.

### **Population of the Study**

The population of this study consisted 622 lecturers from Ambrose Alli University, Ekpoma, 810 lecturers from Federal Polytechnic, Auchi and 48 lecturers from the College of Education, Igueben. This gave a total of 1, 480 lecturers as the population for the study as at 2016/2017 academic session.

### **Sample and Sampling Technique**

A sample of 148 lecturers was selected for this study. This was done using the multistage sampling technique. This method was used to first select three tertiary institutions in Edo State. The population of lecturers was therefore drawn from three tertiary institutions that is, Ambrose Alli University, Ekpoma, Federal Polytechnic, Auchi and College of Education, Igueben and thereafter the simple random sampling technique was used to select 10 percent from the entire population of lecturers that was used for this study. The use of ten (10%) of the population of lecturers is supported by Nwana (1981) cited in Ehiaguina (2013) who stated that in a population of several thousands, above 5% or fewer sample size is sufficient as representative of the population characteristics.

### **Instrument of the Study**

The instrument that was used for the collection of data was the researcher's self designed questionnaire titled: "Lecturers' Perception on the Use of the Computer-Based Examination Questionnaire (LEPUCBETEQ)". The instrument was categorised into two sections 'A' and 'B'. Section 'A' comprised the demographic data of the respondents such as name of institution, sex, and type of institution.

Section 'B' of the instrument consisted of two sub units "I" and "II". Sub unit "I" consisted of twenty (20) response items that were used to elicit responses from the lecturers on their perception of the use of computer-based examination in tertiary institutions in Edo State. Each of the items was rated on a four (4) point scales of Strongly Agreed (SA), Agreed (A), Disagreed (D) and Strongly Disagreed (SD). This will be scored as follows: SA = 4, A = 3, D = 2 and SD = 1. Sub unit "II" of the instrument comprised ten (10) item questions that looked at students' acceptability of CBE as mode of conducting examinations. This was also rated on four (4) point scales of Strongly Agreed (SA), Agreed (A), Disagreed (D) and Strongly Disagreed (SD). This was scored as follows: SA = 4, A = 3, D = 2 and SD = 1.



### Validity of the Instrument

The questionnaire was subjected to face validity by the experts in the Department of Educational Foundations and Management, Ambrose Alli University, Ekpoma who carefully scrutinised the items to ensure that its contents were relevant, clear, unambiguous and precise. Observations, corrections and amendments spotted were incorporated into the final draft that was administered to the respondents.

### Reliability of the Instrument

The test-re-test reliability method was used. This was done by administering the copies of the questionnaire to the respondents and the data obtained were sorted. After two weeks of initial administration, the same instrument was re-administered to the same respondents and the data collected was analysed. Thereafter, the two sets of scores were correlated and analyzed using the Pearson Product Moment Correlation Coefficient. A reliability index of 0.82 was recorded which was considered to be reliable because according to Cohen cited in McHugh (2012), a reliability of 0.60 and above is strong enough to sustain a relationship.

### Administration of the Instrument

The researchers administered the instrument personally. The researchers sought approval from the authorities of the institutions before the copies of the questionnaire were administered to the respondents. The researchers spent enough time in each institution and retrieved the completed instrument on the spot. This helped to ensure high rate of return.

### Method of Data Analysis

The statistical techniques used for analysis were percentage for questions 1 and 2, and ANOVA to test the hypothesis. The items on the questionnaire were rated and scored as follows: SA = 4, A = 3, D = 2 and SD = 1.

## RESULTS

**Research Question 1:** What is the perception of the lecturers' on the use of the CBE by students in the tertiary institutions in Edo State?

**Table 1:** Percentage analysis of Lecturers' perception on the use of the CBE by students in the Tertiary Institutions in Edo State

	Frequency	Percent	Valid Frequency	Cumulative Percent
Disagreed	22	14.9	14.9	14.9
Agreed	112	75.6	75.6	90.5
Strongly Agreed	14	9.5	9.5	100.0
Total	148	100.0	100.0	

Table 1 showed the percentage analysis of the perception of the lecturers' on the use of the CBE by students in the tertiary institutions in Edo State. From the analysis, 22 of the respondents representing 14.9% disagreed on the students' use of CBE, 112 respondents representing 75.6% agreed to the response while 14 the respondents representing 9.5% strongly agreed with the response. This shows that the perception of the lecturers' on the use of the CBE by students in the tertiary institutions in Edo State is positive. This means that students in tertiary institutions in Edo State would embrace computer based examination as a means of testing because it can curb examination malpractice, eradicate the irregularities before, during and after examination, stop

leakage of examination questions, checkmate examination impersonation, more reliable in the scoring of students, make marking easier and more accurate among others.

**Research Question 2:** What is the lecturers' perception of the students' acceptability of the computer-based examination in the tertiary institutions in Edo State?

**Table 2:** Percentage analysis of lecturers' perception of the students' acceptability of the computer-based tests in the tertiary institutions in Edo State

	Frequency	Percent	Valid Frequency	Cumulative Percent
Agreed	145	98.0	98.0	98.0
Strongly Agreed	3	2.0	2.0	100.0
Total	148	100.0	100.0	

Table 2 presents the frequencies and percentage analysis of lecturers' perception of the students' acceptability of the computer-based tests in the tertiary institutions in Edo State. From the analysis above, 145 respondents representing 98% agreed to the responses while 3 respondents representing 2% strongly agreed to the responses. Meanwhile, there was no response on the disagreed and strongly disagreed. This meant that lecturers had strong positive perception of students' acceptability of the computer-based examination in the tertiary institutions in Edo State.

**Hypothesis 1:** School type do not significantly influence lecturers' perception of the use of the CBE as a mode of assessment of the students in the tertiary institutions in Edo State.

**Table 3:** Analysis of variance of the school types and lecturers' perception of the use the CBE as a mode of assessment of the students in the tertiary institutions in Edo State

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.021	2	.011	.044	.957
Within Groups	35.546	145	.245		
Total	35.568	147			

Table 3 showed the analysis of variance (ANOVA) of the difference by school types and lecturers' perception of the use of CBE as a mode of assessment of the students in the tertiary institutions in Edo State. The f-calculated of 0.44 was not significant as ( $P > .05$ ) at 0.05 alpha level of significance. Therefore, the null hypothesis was retained. This shows school types do not influence lecturers' perception differently on the use of CBE as a mode of assessment of the students in the tertiary institutions in Edo State. The perception of lecturers in the university, polytechnics and colleges of education were not significantly different.

## DISCUSSION

The result of this study showed that the perception of the lecturers' on the use of the CBE by students in the tertiary institutions in Edo State is positive. It was concluded that lecturers had positive perception of students use of CBE in tertiary institutions in Edo State and that students would embrace computer based examination as a means of evaluation because of its advantages over the traditional method such as its reliability in the scoring, makes marking easier and more accurate, time management, eradication of delay in the release of results, among others. The lecturers' perception was that students would embrace CBE if properly introduced and managed with the requisite equipment looking at the gains of using CBE. The result could be as a result of the fact that the global world has gone digital and tertiary institutions in Edo State can not afford

to be left behind among the comity of nations. It could also be that if CBE is introduced in all tertiary institutions; it could prompt staff and students to learn the computer and the art of computing when virtually everything within the system is done online. It could also be as a result of the fact that assessing records online makes it easier for students to assess their records such as checking of results, and this could reduce the workload on the part of the lecturers.

The result of this study is in consonance with that of Edumadze, Ossei-Anto, Edumadze, Tamakloe, Asamoah and Boadi, (2014) who found among other things that, many lecturers fail to use e-learning tools because they are not proficient in using them. Nevertheless, they are ready or willing to participate in programmes to equip them with the requisite skills that will make them proficient in using the e-learning tools. This means that lecturers have positive attitude or perception on students' use of the computer-based examination in tertiary institutions.

The result of this study corroborates that of Okocha, Toluwani and Owolabi (2017) that the perceived acceptance rate of Computer Based Examination by students was high, though majority of the students were in support of training prior to taking assessments. Also, the acceptance rate of Physics and Chemistry assessments were relatively low compared to other courses. The study also reported sex differences in the acceptance of CBE and also discovered that College of Study determined the acceptance of CBE. Sanni and Mohammad (2015) in a similar study found among others that majority of the respondents confirmed that the CBE could curb examination malpractice. It also found that majority of the candidates were also found to prefer CBE to the PPT mode of writing examinations.

The result of this study showed that there was no significant difference in the lecturers' perception of the use CBE as a mode of assessment of the students in the tertiary institutions in Edo State based on school type. The perception of lecturers in the universities, polytechnics and colleges of education were not different as regards the use of CBE as mode of testing in tertiary institutions. The reason for this could be that the lecturers in these institutions are faced with similar problems of examination malpractices and government non commitment to providing the necessary ICT tools facilities. Though, some institutions maybe more equipped than the others, however, their perception is that CBE as a mode of testing will add value to the way evaluation is carried out our tertiary institutions which the lower levels of the education system can emulate.

This result has correlation with that of Ogunlade and Olafare (2014) who conducted a study on lecturers' perception of computer based examination in Nigerian universities and found out that lecturers had positive rating on perceived usefulness (65.1%), ease of use (65.2%), credibility (70.2%) of CBE. The perceptions of lecturers were not varied according to institution. This meant that irrespective of the institution, it is the belief of lecturers that CBE will help to improved on the mode of testing if properly used.

Jimoh, Shittu and Kawu (2012) had also found in their study though similar results to this study but some contrasting facts when they revealed that there was optimistic characteristics of the target context for the CBE implementation as majority (95.8%) said they were competent with the use of computers and 75% saying their anxiety was only mild and low, but notwithstanding, they have not fully accepted the testing mode with only 29.2% in favour of it due to the impaired validity of the test administration which they reported as being many erroneous chemical formulas, equations and structures in the test items even though they have nonetheless identified the achieved success the testing has made such as immediate scoring, fastness and transparency in marking.

Notwithstanding, lecturers across tertiary institutions would give in to CBE as mode of testing if the necessary equipments are available to its effective functionality.

## CONCLUSION

- (a) Lecturers' have positive perception on the use of the CBE by students in the tertiary institutions in Edo State, Nigeria.
- (b) Lecturers have strong positive perception on students' acceptability of the computer-based examination in the tertiary institutions in Edo State, Nigeria.
- (c) there is no significant difference in school type and lecturers' perception of the use CBE as a mode of assessment of the students in the tertiary institutions in Edo State, Nigeria.

## Recommendations

- (a) Vice-Chancellors of universities, Rectors of polytechnics and Provosts of colleges of education should introduce Computer-Based Examination in schools as mode of assessment of students considering its advantages over the traditional methods of assessment.
- (b) Government as proprietors of public institutions should endeavour to provide the necessary facilities for the full implementation of CBE in tertiary institutions.
- (c) Students should be well sensitized on the advantages of CBE over other modes of testing for smooth implementation and wide acceptance.
- (d) All academic staff should be trained in the use of CBE as mode of assessment and be provided with access to the internet within the campus environment.

## Implications for Educational Management

The result of this study showed that lecturers had positive perception towards the use of CBE as a mode of assessment of students in tertiary institutions. This means that lecturers are willing and ready to accept its usage. The administrators and heads of these institutions have the responsibility of ensuring that the necessary apparatus are provided for its full implementation. It is also their responsibility to ensure academic staff are trained in this direction for the effectiveness of the process. The study also found out that many students will accept CBE if the facilities are provided and functional. It behooves on the administrators of the institutions to ensure that adequate good working computers are provided with good internet system, adequate maintenance and right man power for the efficiency of the system.

## Contributions to Knowledge

This study has contributed significantly to knowledge in the following ways:

- (a) The result of the study had revealed the importance of the use of CBE as mode of assessment of students as it enhances ease of scoring method.
- (b) The result of the study had revealed that lecturers do not differ in their perception of the use of CBE as mode of assessment of students based on school type.
- (c) The result of the study had revealed that students would welcome the idea of the use of CBE as mode of assessment because its advantages are quite overwhelming.

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