Lecturers' perceptions of computer-based test in Nigerian Universities

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Abstract

Information and communication technology has transformed assessment through objective, verifiable, replicable and more effective ways of testing students. Some Nigerian universities have adopted computer-based test (CBT) for their courses and examinations. The perceptions of lecturers' on CBT in Nigerian universities have not really been established and very few studies determined the lecturers' perceptions of CBT. Based on these limited studies, a study of this nature was conducted to investigate perceptions of lecturers on CBT. The objective of this study was to investigate: lecturers' perceptions of the usefulness; ease of use and credibility of CBT in Nigerian universities. The study adopted survey method of descriptive research. Sample was drawn from 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. Data was 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 CBT. The study concluded that lecturers perceived CBT as useful, easy to use and credible. The implication was that the perception of the usefulness, ease of use and credibility of CBT will lead to increase in use of CBT by lecturers in Nigerian universities. It was recommended among others that Nigerian universities should improve the efficiency of computer-based test to increase its credibility. Lecturers should be more encouraged to constantly use CBT while conducting their tests and examinations not minding the number of students.

Key words: *Computer-based test, Credibility, Lecturers perceptions*.

Introduction

Educational system has been influenced by a rapid change in technology as it is increasingly used in teaching and learning. This has implications on quality of University education, as quality is believed to have been compromised by the quantity of universities. Quality is related to standard; therefore the standard of university education can only be achieved through evaluation process. The evaluation process is done through accreditation process which is used to evaluate the process of educational performance in the university. Evaluation is a way of assessing a system in order to make a declaration on the outcome of the system (Ojedele & Ilusanya, 2006).

Evaluation is a qualitative description of pupil behaviour (Jim & Sean, 2006). It also concerns determining the quality of the curriculum, facilities and performance of learners, using various tools. It is a systematic collection of information for use in judging the worth of a programme, product, procedure, or objective; or the potential utility of alternative approaches designed to attain specific objectives (Joshua, 2004). According to Onuka (2006), evaluation is mainly two types namely: formative and summative evaluation. Formative evaluation is undertaken during the developmental stage of a programme or during the teaching and learning process. Obemeata (2005) also concluded that it is for the purpose of guiding and assisting a

programme or learning to achieve its objective. Onasanya (2005) agreed that it guides and aids development and implementation of a programme. Summative evaluation takes place at the end of a program. This was why (Obemeata, 2005) pointed out that the purpose of summative evaluation are to provide evidence to judge the success or otherwise of such programmes. It suggests appropriate action concerning whether to continue or modify the programme. According to Onuka (2006) there are different tools for evaluation out of which test is one of the most important.

Test has to do with merit and worth of the data as applied to a specific use or context. Teachers and administrators need analysis skills to effectively interpret and make value judgments about tests' results. Tests and testing practices are often based on provision of good quality tests to test takers in a cost-effective manner, with the help of test sponsor, test developer, and test administrator (Barbara, 2002).

The predominant mode of testing student's in Nigeria universities is the paper-based test. In this mode, students are assessed using paper and pen. Paper-based test in Nigeria is characterized by different form of examination malpractices such as bringing in unauthorised materials, writing on currency notes and identity cards, spying of other candidates in examination hall, substitution of answer sheets and change of examination scores or grades. Others include, impersonation, leakage of questions to students before the examination, conniving with supervisors and school authorities to cheat, body writing or tattoo in which students especially females write on hidden parts of their bodies, (Olatoye n.d).

The successes of transition from one test method depend on the extent and ability of testing professionals to communicate the benefits and limitations of that test method to stakeholders (Jones, 2000). The use of computers for assessment can provide several benefits for educators and test-takers. It is on this note that Oladipo (2009) concludes that Computer-Based Test (CBT) is a system which spurs development in education as well as other sectors of the economy. CBT usually assist to ensure that candidate's identity in the examination hall is efficiently cross-checked. Computer-based test (CBT) is an efficient way for test sponsors to provide a secure, consistent environment for certification and licensure as it also enhance students' experience (Abubakar & Adebayo, 2014).

Computer-based testing is the use of computers to administer tests. Computer Based Test 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. CBT had advantages over Paper-based test, both for lecturers that give the test and for the students who participate in the test. CBT allows for more accurate, secure, rapid and more controlled test administration. Administration of test on the computer helps to minimise almost entirely the use of paper printing. This could also reduce administration costs as well as environmental impact.

Statement of the Problem

Adewale, Ajadi, and Inegbedion, (2011) carried out a research on perception of learners on electronic examinations in open and distance learning institutions using National Open University of Nigeria as a case study. Adewale et. al, (2011) reported that the difference in students' perception is based on the reduction of examination malpractice, wide coverage of the scheme of work, students' academic performance, and inadequate facilities. More so studies like Ricketts and Wilks (2001) investigated the appropriateness of using CBT system for teaching numeracy and statistics to the first year Biology students. They discovered that students' performance was poor when online assessment was used and students had difficulty in interacting with computer screen. Similarly, Daly and Waldron (2002) used a model for CBT

systems to examine the factors that enable computer science students pass the programming exams despite low level skill in problem solving abilities. The Study found out that acceptance depended on their performance in their exams. The use of computer for test administration in university education is to change the state of test administration but the integration has not yet being fully utilized in Nigerian universities. Most past studies on Computer-Based Test in Nigeria universities e.g (Raji & Jolayemi 2010; Tella & Bashorun 2011) have considered lecturers attitudes towards computer-based test and effectiveness of Computer-Based Test on students' academic performance. However, only few researchers had determined lecturers perceptions of CBT (e.g Nurcan 2010, Terzis & Economides 2011, JImoh, Yussuff, Akanmu, Enikuomehin, & Salman, 2013) but the researchers in their studies did not create valuable insights into the lecturers perceptions of CBT. Majority of the studies dealt with students, thus this study investigates lecturers perceptions of computer-based test in Nigerian universities.

Review of Literatures

Literatures related to the study are reviewed as follows

Computer-Based Tests

Computer-Based Test is a way of conducting examinations with the use of computer as a medium. Computer-Based **t**est is a test that can be used in a supervised or non-supervised environment. McConnell & Schoenfeld-Tachner (2001) viewed computer-based test as a way to increasingly provide a quick method of marking summative assessments for large groups of students. Computer-based test is the logical extension of computer enhanced learning.

The uses of computers are well known and apparent in teaching and learning process, but its integration to testing in education has not been fully utilized (Raikes & Harding, 2003). With the development of technologies, computer has evolved as a tool that can improve the accuracy and efficiency of tests. Computers have transformed the way testing is being conducted over the years and computers have been used to administer examinations since the 1970s (Liao & Ho, 2010). As computers become increasingly available in educational settings; teachers make use of it to administer tests (Trotter, 2001). Computer-based test helps to develop new assessment methods by combining flexible technical possibilities with elaborated understanding of how to assess various forms and levels of knowledge.

CBT allows students to check their own progress through self-assessment. It is use for testing lower-order skills (such as knowledge, understanding and application) and higher-order skills so as to improve students' analysis, synthesis and evaluation skills. Computer-based **t**est automate a very time consuming task**,** marking and monitoring progress. Computer-Based test enables easier control and editing of exam items, gives room for better incorporation of testing into the learning environment using specific feedback. The use of computer-based test combines advantages with respect to content (integration of other media, favourable presentation of pictures, and possibility of other examination formats) with rapid data analysis (Hochlehnert, Brass, Moeltner & Juenger, 2011).

The advantages of CBT are listed below:

- Saves time and manpower for the test administration
- Faster and more controlled test revision process
- Fewer response interpretation errors (reading, decoding)
- Convenience of individualized administration at requested date and location
- Improved test security due to electronic transmission and encryption

− Improved translation and localization with universal availability of content (Bodmann & Robinson, 2004; Alabi, Issa & Oyekunle, 2012)

Apart from the advantages that CBT has, there are some challenges in it use. CBT is likely to be more expensive Professional Testing Inc., (2006). Also, Hofer, (2007) listed some of the challenges of CBT as;

− Enables the testing of more knowledge dimensions
− High development costs
− Long transition time for changing from traditional assessment to CBT due to the effort in adapting routines and technology
− Long transition time to build up the necessary psychometric level for new question forms and items
− Negative effects of computer anxiety
− Due to lack of experience with CBT, training of the candidates may be necessary.

Computer-based test can be of different types (i) Linear and Fixed computer-based test (ii) Computer-adaptive test (CAT). Linear and fixed computer-based test are test delivery methods that are most similar to paper-based testing. Linear and Fixed computer- based test is the random method which can be used to administer a fixed set of items to provide a modest test security benefit. Computer Adaptive Testing (CAT) is a criterion referenced test. In CAT, when a user answers a question correctly, the next test item has a slightly higher level of difficulty. The difficulty level of the questions presented to the examinee continues to increase until a question is answered incorrectly. Then a slightly easier question is presented. In this way the test is tailored to the individual's ability level (Professional Testing Inc., 2006).

CBT can make use of specially designed templates for item construction, and indeed some companies market special software to allow test developers to construct tailor-made tests (Questionmark, e.g. at http://www.qmark.com/). Soft-ware like author ware (Copyright 1993, Macromedia Inc.) can easily be used to facilitate test development, without the need for recourse to proprietary software. Durojaiye and Omotehinwa (2013) developed a software package for computer-based test using Unified Software Development Process. Computer-based test has become a popular way of testing and it has been very effective for testing both on the path of the lecturers and the students with more of its advantages than disadvantages.

Purpose of the Study

The main purpose of this study was to determine Lecturers' perceptions of computer-based test in Nigerian Universities. The specific purpose was to:

1. examine lecturers' perceived usefulness of computer-based test in Nigerian universities.
2. determine lecturers' perceived ease of use of computer-based test in Nigerian universities.
3. find out lecturers' perceived credibility of computer-based test in Nigerian universities.

Research Questions

The following research questions were answered in the study.

1. How do lecturers perceive the usefulness of computer-based test in Nigerian universities?
2. How do lecturers perceive the ease of use of computer-based test in Nigerian universities?

3. How do lecturers perceive the credibility of computer-based test in Nigerian universities?

Methodology

The study adopted the descriptive approach of the survey type. The population for this study consists of lecturers in the Universities that were involved in the use of Computer-based test in Nigerian Universities. The general sample size was determined from the total number of lecturers who were users of computer-based test in the selected Nigerian universities. From anecdotal record it is observed that a total of 1,027 lecturers from the University of Ilorin, a total of 1,326 lectures from the University of Ibadan. Similarly, a total of 604 lecturers from Kogi State University while 385 lecturers from Covenant University. This gives a total of 3,342 as the target population for the lecturers in this study. The sample selection of these lecturers was based on Israel's model. The model posited that given a total population of N, if ±3% is taken for precision levels where confidence level is 95% and p=.5, the sample
(n) should be = X (Israel 2003).

Table 1: Sample Size Determination for Lecturers

Size of Population	Sample Size (n) for Precision (e) of:			
	±3%	±5%	±7%	±10%
3,000	811	353	191	97
4,000	870	364	194	98
5,000	909	370	196	98
6,000	938	375	197	98
7,000	959	378	198	99
8,000	976	381	199	99
9,000	989	383	200	99
10,000	1,000	385	200	99
15,000	1,034	390	201	99

Table 2: Lecturers Sample Selection

Universities	Total number of Lecturers	Sampled
University of Ilorin, Ilorin	1027	457
University of Ibadan, Ibadan	1326	142
Kogi State, University, Anyigba	604	20
Covenant University, ota	385	231
Total	3342	850

From the table, a total of 457 lecturers from the University of Ilorin; 142 lectures from the University of Ibadan; 20 lecturers from Kogi State University; 231 lecturers from Covenant

University were sampled. This gives a total of 850 lecturers who are using computer based test in all the selected universities. This represents 25% of the total population of lecturers using CBT.

A researcher-designed questionnaire entitled "Lecturers' perceptions of computer-based test in Nigerian universities (LPCBTNU)" was used for the collection of data in this study. The reliability of the questionnaire used in this study was achieved by administering the questionnaire on lecturers of Federal University of Technology, Minna. Cronbach Alpha was adopted to determine the reliability of the instrument. The item on the Lecturers' questionnaire had reliability co-efficient of 0.81.

Table 3: Reliability co-efficient for Lecturers Questionnaire

SECTIONS	No. of items	Lecturers
perceived usefulness	15	0.82
perceived ease of use	16	0.80
perceived credibility	15	0.77

Table 3 showed the reliability co-efficient obtained. These indicate that the three sections of the items were reliable for its use in the study.

Table 4: Total number of Questionnaire Administered

Respondents	No. of Administered questionnaire	No. of retrieved questionnaire	% of retrieved Questionnaire
Lecturers	1000	850	85.0%

Data Analysis Techniques

The results of the administered researcher-designed questionnaire was subjected to inferential and descriptive statistics and was coded and analyzed using Statistical Package for Social Sciences (SPSS) version 20.0 for windows. The statistical tests used were the descriptive analysis involving the percentage and mean to answer the research questions 1 to 3.

Result

Demographic table

The data presented in this section provides a summary of the major characteristics of the lecturers that were involved in the study. The questionnaire was directed to this set of respondents to ensure that necessary information was captured and measured accurately. The demographic representation of lecturers was presented in table and bar chart below.

Table 5: Distribution of Respondents (Lecturers and Students) by Universities

Name of University	Lecturers	
	Frequency	Percentage
University of Ilorin	457	(53.8)
University of Ibadan	142	(16.7)
KogiState University	20	(2.3)
Covenant University	231	(27.2)
Total	850	(100)

The distribution of the lecturers according to the Universities shows that 53.8% of them were from the University of Ilorin, 16.7% were from the University of Ibadan, 2.3% were from Kogi State University while 27.2% were from Covenant University. The distribution of the students according to Universities shows that 25.9% of them were from the University of Ilorin, 25.1% were from the University of Ibadan, 25.6% were from Kogi State University, and 23.4% were from Covenant University.

Analyses of Research Questions

This part presents the result of the analyses on lecturers' perceptions of computer-based test. The purpose was to determine the perceived usefulness, perceived ease of use and perceived credibility of computer-based test. The response for the positively worded items on the questionnaire were recorded so that strongly agree was rated 4, agree=3, strongly disagree= 2 and disagree was 1. The scoring method was reversed for the negatively selected items on the questionnaire. As a result of this scoring mode, possible range of scores for lecturers' questionnaire items on section BI=15 to 60, section BII=16 to 64, and section BIII=15 to 60; students' scores on questionnaire for section BI=15 to 60, section BII=17 to 68, and section BIII=16 to 64.

Research Question 1: How do lecturers perceive the usefulness of Computer-Based Test in Nigerian Universities?

The research question was asked to find out lecturers perceived usefulness of computer-based test in Nigerian Universities. Thus the researcher analyzed the responses from the items on the questionnaire and the results are as shown in Table 6.

Table 6: Lecturers' Perceived Usefulness of Computer-Based Test in Nigerian Universities (N=850)

	Perceived Usefulness of computer-Based Test	Strongly agree %	Agree %	Strongly disagree %	Disagree %	Mean
1.	Using CBT gave me greater control over my courses.	24.0	38.2	7.8	30.0	2.56
2.	CBT improved my students' academic Performance.	23.4	40.5	0.9	35.2	2.52
3.	CBT improved my academic productivity	32.1	32.2	6.6	29.1	2.67
4	CBT enhances the effectiveness of my teaching activities.	3.3.9	27.8	0.8	37.5	2.58
5.	CBT improved the quality of the examination for students.	24.9	30.6	15.4	29.1	2.51
6.	CBT provides an attractive test examination for students	21.3	60.6	0.9	17.2	2.86
7.	CBT is relevant to the course I teach.	35.5	27.5	7.1	29.9	2.68
8.	The use of CBT for my course influenced other lectures' use of CBT.	53.6	10.0	27.4	5.90	2.21
9.	I like using CBT because i am computer Literate.	18.4	57.4	23.8	0.5	2.94
10.	My University requires me to use CBT for my test	43.3	21.3	6.1	29.3	2.79
11.	CBT makes marking easier	56.4	35.2	1.4	2.1	3.41
12.	CBT allows applications such as statistics, charting, graphing during test.	10.0	27.5	27.5	34.9	2.13
13.	CBT allows good communication such as email, mailing lists, conferencing during examination.	10.2	27.9	21.1	40.8	2.08
14.	If CBT were not mandatory, I would still use it	18.2	45.8	8.9	27.1	2.55
15.	CBT is easier to do my course.	14.9	44.0	25.4	15.6	2.58

Note: Strongly agree and agree were merged to strongly agree, Strongly disagree and disagree were merged to strongly disagree

The results in table 6 suggest that 62.2% of the lecturers strongly agreed that using CBT gives greater control over courses while 37.8% strongly disagreed. Furthermore 63.9% strongly agreed that CBT improved students' academic performance while 36.1% strongly disagreed, 64.3% strongly agreed that CBT improved academic productivity while 35.7% strongly disagreed. 61.7% of the respondents strongly agreed that CBT enhanced the effectiveness of teaching activities while 38.3% strongly disagreed. A 55.5% of the respondents strongly agreed that CBT improved the quality of the examination for students while 44.5% strongly disagreed.

Furthermore, a total of 81.9% of the respondents strongly agreed that CBT provides attractive test environment while 18.1% strongly disagreed; and 63% strongly agreed that CBT was relevant to the course they taught while 37% strongly disagreed. A total of 63.6% of the lecturers strongly agreed that their use of CBT for courses influenced other lecturers' use of CBT and 36.4% disagreed, 75.8% of the lecturers like to use CBT because they were computer literate and 24.2% strongly disagreed. A total of 64.3% of the lecturers strongly agreed that University require the use of CBT for test while 35.7% strongly disagreed. More so, a high percentage 91.6% of the respondents strongly agreed that CBT makes marking easier for them while 8.4% strongly disagreed. A total of 37.5% of the lecturers strongly agreed that CBT allows applications such as statistics, charting, graphing during test while 62.5% strongly disagreed. A total of 38.1% strongly agreed that CBT allowed good communication such as email, mailing lists, conferencing during examination while 61.9% strongly disagreed, 64% of the lecturers strongly agreed that if CBT were not mandatory, they would still use it and 36% strongly disagreed.

Furthermore, a total of 58.9% the lecturers strongly agreed that CBT is easier to use for their courses generally while 41.1% strongly disagreed. These result suggest generally that lecturers' perceived usefulness of computer-based test in Nigerian Universities was positive and this might have accounted for the success recorded on the part of the lecturers in those universities. The average mean score of lecturers' perceived usefulness of CBT on table 11 was 39.07 out of maximum mean score of 60, which translated to 65.1%. With this result, it is postulated that lecturers' perceived usefulness of computer-based test was positive.

Research Question 2: How do lecturers perceive the ease of use of Computer-Based Test in Nigerian Universities?

The research question was asked to find out lecturers perceived ease of use of computer-based test in Nigerian Universities. Thus the responses from the items on the questionnaire were analyzed to measure the lecturers' perceived ease of use of computer-based test in Nigerian Universities. The results are shown in Table 7.

Table 7: Lecturers' Perceived Ease of Use of Computer-Based Test in Nigerian Universities (N=850)

Perceived Ease of Use of Computer-Based Test	Strongly agree %	Agree %	Strongly disagree %	Disagree %	Mean
1. I believe that it is easy to use the CBT for my course.	13.2	56.1	3.4	27.3	2.55
2. Interaction with the computer is clear and understandable during CBT.	30.4	56.9	3.4	9.3	3.08
3. Overall, CBT is easy to use.	24.2	65.1	5.8	4.9	3.09
4. I need an experienced person nearby when I use CBT for my test.	15.5	38.4	15.9	30.2	2.39
5. I am not in complete control test when I use a CBT.	5.6	50.6	25.5	18.2	2.44

6. I do not need someone to tell me the best way and time to use CBT.	28.9	52.6	6.0	12.5	2.98
7. Testing with CBT does not require a lot of mental effort.	8.9	22.2	26.1	42.1	1.98
8. Due to ease of use I will use CBT for my courses in future.	33.1	48.2	6.4	12.4	3.02
9. My students find CBT Easy To Use.	6.4	59.2	13.2	21.3	2.51
10. CBT needs more technical skills of computer that I don't have.	0.5	23.1	26.7	49.8	1.74
11. CBT is easy to use.	30.1	49.2	8.8	11.9	2.98
12. There is not enough time to use CBT for Test.	40.4	27.2	32.4	0	1.92
13. CBT is too expensive to use regularly.	33.2	4.4	44.1	18.4	2.48
14. I do not have sufficient access to CBT resources.	27.8	11.4	88.4	0.5	2.34
15. To set questions for CBT takes up too much of my time.	8.9	18.4	39.2	33.5	2.97
16. CBT is convenient to supervise.	31.6	61.4	1.4	5.5	3.19

Note: Strongly agree and agree were merged to strongly agree
Strongly disagree and disagree were merged to strongly disagree

The results in table 7 reveal that 69.3% of the lecturers strongly agreed that it was easy to use the CBT for their courses while 30.7% strongly disagreed. A total of 87.3% strongly agreed that Interaction with the computer is clear and understandable during CBT while 12.7% strongly disagreed. A total of 53.9% strongly agreed that they need an experienced person nearby when they use CBT for test while 46.1% strongly disagreed. Similarly, 56.2% strongly agreed that they were not in complete control of test when CBT is used for test while 43.8% strongly disagreed.

A total of 81.5% of the respondents strongly agreed that they don't need someone to tell them the best way and time to use CBT while 18.5% strongly disagreed; 31.1% strongly agreed that testing with CBT does not require a lot of mental effort while 68.9% strongly disagreed. Also, a total of 81.3% of the lecturers strongly agreed that due to ease of use, they would use CBT for courses in future while 18.7% strongly disagreed. A total of 65.6% of the lecturers strongly agreed that students found CBT easy to use while 34.4% strongly disagreed; 23.6% of the lecturers strongly agreed that CBT needs more technical skills in computer that they don't have while 76.4% strongly disagreed. In addition, a high percentage of 79.3% strongly agreed that CBT was easy to use for them while 20.7% strongly disagreed. A total of 67.6% of the lecturers strongly agreed that there is no enough time to use CBT for Test while 32.4% strongly disagreed. A total 37.6 strongly agreed that CBT is too expensive to use regularly while 62.4% strongly disagreed. A total of 39.2% of the lecturers strongly agreed that they don't have sufficient access to CBT resources while 60.8% strongly disagreed. Furthermore, a total of 27.3% of lecturers strongly agreed that to set questions for CBT usually takes too much of their

time while 72.7% strongly disagreed. Also, 93% of the lecturers strongly agreed that CBT was convenient to supervise while 7% strongly disagreed. This result suggested that lecturers' perceived ease of use of computer-based test in Nigerian Universities was very high and hence the ease of use has made the use of CBT a success on the part of the lecturers in the Universities. The average mean score of lecturers' perceived ease of use of CBT in table 12 was 41.66 out of a maximum mean score of 64, which translated to 65.2%. This is an indication that lecturers' perceived ease of use of computer-based test was positive.

Research Question 3: How do lecturers' perceive the credibility' of Computer-Based Test in Nigerian Universities?

This research question answered how lecturers perceived the credibility of computer-based test in Nigerian Universities. The responses to the items that measured the lecturers' perception of the credibility of Computer-Based Test in Nigerian Universities were analyzed. The results are as shown in Table 8.

Table 8: Lectures Perceived Credibility of Computer-Based Test in Nigerian Universities (N=850)

Perceived Credibility of Computer-Based Test		Strongly agree %	Agree %	Strongly disagree %	Disagree %	Mean
1.	CBT gives the opportunity for reusing questions.	26.6	51.9	1.2	20.4	2.85
2.	CBT enables assessment of a wide range of topics very quickly.	45.2	46.6	2.6	5.6	3.31
3.	CBT reduces the time dedicated to marking.	46.7	48.1	1.5	3.6	3.38
4.	The need for double marking is totally eliminated by CBT.	39.3	42.7	6.2	11.8	3.00
5.	Time saving by CBT allows more regular assessment than might otherwise have been possible.	36.1	36.7	13.1	14.1	2.95
6.	CBT enables more detailed knowledge of students' progress.	33.9	47.5	6.4	12.2	3.03
7.	CBT fills a gap that neither lecturers nor smaller tutorial groups could otherwise fulfill, when resources are available.	16.4	40.8	21.2	21.6	2.52
8.	CBT leads to deep learning with more transient gains.	27.5	42.2	9.4	20.8	2.77
9.	CBT allows course evaluation by lecturers to be undertaken more easily.	7.4	58.6	16.5	17.5	2.56
10.	The construction of valuable CBT needs adequate staff training.	14.1	35.2	18.4	32.4	2.31
11.	CBT allows testing of superficial level of understanding.	32.5	49.4	5.2	12.9	3.01

12.	CBT measures student's ability to communicate with the lecturers.	55	7.6	6.0	31.4	2.27
13.	CBT creates propensity for original thinking during test.	12.2	43.9	7.9	36.0	2.32
14.	CBT allows additional training in terms of IT for lecturers.	9.2	58.7	8.0	24.1	2.53
15.	Security measures during CBT reduce plagiarism.	42.2	45.5	10.8	1.4	3.29

Note: Strongly agree and agree were merged to strongly agree, Strongly disagree and disagree were merged to strongly disagree.

The results in table 8 suggest that 78.5% of the lecturers strongly agreed that CBT gives the opportunity for reusing questions while 21.5% strongly disagreed. A total of 91.8% strongly agreed that CBT enabled the assessment of a wide range of topics very quickly while 8.2% strongly disagreed; 94.2% also strongly agreed that CBT reduces the time dedicated to marking as 5.8% strongly disagreed. Also, 82% strongly agreed that the need for double marking was totally eliminated by CBT while 18% strongly disagreed. Respondents 72.8% strongly agreed that time saving by CBT allow more regular assessment while 27.2% strongly disagreed.

A total of 81.4% respondents strongly agreed that CBT enables more detailed knowledge of students' progress and 18.6% strongly disagreed; a total of 57.2% strongly agreed that CBT fill a gap that neither lecturers nor smaller tutorial groups could otherwise fulfill when resources are available as against 42.8% who strongly disagreed. Another 69.7% of the lecturers strongly agreed that CBT leads to deep learning with more transient gains and contrarily 30.3% strongly disagreed; 66% of the lecturers strongly agreed that CBT allow course evaluation by lecturers to be undertaken more easily while 34% strongly disagreed. Similarly, 49.3% of the lecturers strongly agreed that the construction of valuable CBT needs adequate staff training while 50.7% strongly disagreed.

Moreover, a high percentage of 8l.9% strongly agreed that CBT allow testing of superficial level of understanding while 18.1% strongly disagreed. In addition 62.6% of the lecturers strongly agreed that CBT measure students' ability to communicate with the lecturers while 37.4% strongly disagreed; a total 56.1% strongly agreed that CBT creates propensity for original thinking during test while 43.9% strongly disagreed. A total of 67.9% strongly agreed that additional training for IT use should be allowed while 32.1% strongly disagreed. Also, 87.7% of the lecturers strongly agreed that security measures during CBT reduce plagiarism while 12.3% strongly disagreed. These results suggest generally that lecturers' perceived credibility of computer-based test in Nigerian Universities was very high and hence the credibility have made the use a success on the part of the lecturers in the universities. The average mean score of lecturers' perceived ease of use of CBT in table 13 was 42.10 out of the maximum mean score of 60, which translated to 70.2%. With this result, it is established that lecturers' perceived credibility of computer-based test was high.

Discussion

Lecturers' Perceptions of Computer-Based Test

The result of this study reveals that lecturers perceived computer-based test to be useful in Nigerian universities. This finding is supported by Bull (1999), Cheong and Park (2005) who

reported that computer-based test had the potential to impact institutions with faster quality and speed of feedback which could enhance the capability of academics to pinpoint progress and learning deficiencies. The report of Chalmers and McAusland (2002) also buttress this finding when they explained that computer-based test, in the context of pedagogical applications enable lecturers to cover a wide range of content, reduce workload especially in the case of double marking, conserve time and resources, and helped identify learning problems by adapting them to match their abilities.

The result reveals that lecturers perceived computer-based test to be easy to use in Nigerian universities. This finding is consistent with some other findings reported in the literature such as the report by Linn and Miller (2005) who reported that computer-based test is easy to use as it is not stressful. Similarly, Ricketts and Wilks (2001) also reported that computer-based test is perceived to be easy to use as it is user friendly and the user friendliness aids its usefulness. Farrell and Leung (2004) reported that the competency level of lecturers increases the rate at which they find CBT easy to use. In the same vein, the report by Venkatesh (2000) shows the inter-relationship between usefulness and ease of use of computer-based test produced substantial support for this study. Bugbee (1996) also reported that the ease of use of computers really affects its uses for test. The result of this study replicates a similar finding in a study on acceptance of e-assessment conducted by Nurcan (2010) and also in conformity with the original TAM study by Davies (1989).

Lee (2003) reported that some lecturers perceived CBT not to be useful as their students perform lower in CBT than they would have in a PBT. This Lee's finding contradicts the finding of this study.

Conclusion

The study discovered that the usefulness, ease of use and credibility are important in the use of computer-based test in Nigerian universities as perceived usefulness, easy to use and credibility plays an important role in the use of computer-based test.

Recommendation

Based on the findings and conclusions, recommendations were made that Nigerian universities should improve the efficiency of computer-based test to increase its credibility. Since CBT was useful for lecturers then they should put more effort to the use of it for all the courses they teach.

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