

Islamic Studies Undergraduates' Perceptions on the Use of Manual and Computer-Based Tests in the University of Ilorin, Nigeria.

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ABSTRACT

Tests and examinations are central features of school systems. Effective administration of examination in large classes of students may require a computer-based method in order to minimize human errors and stress involved in the use of manual-based test (MBT). Computer-based test (CBT) system has thus been introduced by the University of Ilorin. Hence, this study examined Islamic Studies undergraduates' perceptions on the use of MBT and CBT in the University of Ilorin, Nigeria. The population of the study comprised all Islamic Studies undergraduates in the Department of Arts Education and Department of Religions, University of Ilorin. The sample for the study consisted of four hundred and fifty (450) students from 200, 300 and 400 levels. Simple random sampling technique was used to select the sample. A researcher-designed questionnaire was used to collect data from the respondents. T-test Statistical tool was used to test the hypotheses postulated for the study, all at 0.05 level of significance. The findings revealed that there was a significant difference in the perceptions of Islamic Studies students on the use of MBT and CBT based on academic level as well as on gender. It was recommended that the concerned university authority should be balanced in the conduct of tests and examinations because the Manual-Based test system is better suited to some Islamic Studies courses, and that the university authority should endeavour to organise orientation programmes for the students lagging behind on the use and application of the computer-based test. Also, Parents should endeavour to enrol their wards in computer training programmes and provide them with computer devices so as to enhance their performance in CBT in tertiary institutions.

Introduction

Education in the context of Islam is regarded as a process that involves the complete person, including the rational, spiritual, and social dimensions, the comprehensive and integrated approach to education in Islam is directed towards the balanced growth of the total personality through training man's spirit, intellect, rational self, feelings and bodily sense such that faith is infused into the whole

of his personality (Abbas, 2012). Abbas (2012) explained that education in Islam is classified into two folds: acquiring intellectual knowledge through the application of reasons and logic, and developing spiritual knowledge derived from divine revelation and spiritual experience. The most widely used word for education in the formal sense is *ta`lim* derived from the root *'alima*, which means to learn. The word is used to denote knowledge being imparted through instruction and teaching. He further

explained another term for education which is *tarbiyah* (grow) and this implies a state of spiritual and ethical nurturing in accordance with the will of Allah.

However, 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). Tests and examinations are central features of school systems in many countries (Sohaib, 2013). It is generally recognised that examinations reflect the extent to which educational objectives have been achieved as well as the extent to which educational institutions have served the needs of the community and society (Shah, 2002). Examinations are not limited to measuring educational or societal objectives and needs only but also incorporation of ways of coping with the educational system (Havens, 2002). Similarly, Rehmani (2003) briefly described examinations as playing 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. Test or examinations allured as alternative terms for assessment as an assessment indeed is placed to measure a test-takers' knowledge, skill, aptitude, physical fitness or classification in many other topics (Jamil, Tariq and Shami, 2012).

In a related development, Computer-Based Tests are perceived by Sorana-Daniela and Lorentz (2007) as tests or assessments administered by computer in either a stand-alone or dedicated network or by other technology devices linked to the internet or World Wide Web, most of them use multiple choice questions (MCQs), for instance, The numbers of Rak'at contained in each of the five salat Subh are _____ (a) two (b) four (c).three (d) four Computer based tests have been used since the 1960s to test knowledge and problem solving skills (Peter, Bill, & David, 2004). Computer based testing systems have enabled educators and trainers to author, schedule, deliver and report on surveys, quizzes, tests and assessment. It is on this note that Oladipo (2009) concluded that Computer-Based Test (CBT) is a system which spurs development in education as well as other sectors of the economy. CBT usually assists to ensure that candidate's identity in the examination hall is efficiently cross-checked not like MBT where a student can manipulate appearance by writing examination for another student. CBT is an efficient way for test sponsors to provide a secure, consistent environment for certification and license as it also enhances students' experience (Abubakar and Adebayo, 2014).

Moreover, numerous advantages are derivable by schools from CBT over the traditional paper and pen testing considering the large population of students. Some of the advantages include: increased delivery, administration and scoring efficiency, improved test security, consistency and reliability, faster response rate to mention a few (Riku, Laurif & Ari, 2001).The

predominant mode of testing students' performance in Nigerian universities is the manual-based test (Ogunlade & Olafare, 2015).

In the University of Ilorin, the traditional method (a combination of essay and practical examinations) is mostly used as assessment of students' knowledge. In the past few years, the number of students increased drastically and the conventional examination method became time consuming (Oduntan, Ojuawo and Oduntan, 2015). To ease the stress of examining extremely large classes of students, a system of computer-based testing was introduced by the University of Ilorin in 2008, primarily to address this concern and others. Educational measurement has been moving from manual-based test (MBT) to the use of computer-based testing (CBT) in the university (Oduntan et al, 2015).

There are two main types of computer-based testing. The more familiar type is where candidates fill in their responses on a paper form which is fed into a computer optical mark reader. This reads the form and scores the paper and may even report on the test reliability. The second type of computer-based testing is where computers provide an assessment interface for students; they input their answers and receive feedback via a computer (Peter, Bill, and David, 2004).

CBT has advantages over manual-based test, both for lecturers that give the test and the students who take the test. CBT allows for more accurate, secure, rapid and more controlled test administration (Ogunlade and Olafare, 2015). Ample research has been done to compare the effect of the use of the traditional method of assessment (Manual-Based Test) and the use of Computer-Based Test. Researchers such as Sanni (2015) who worked on the perception of students on the use of CBT for assessment showed that students prefer CBT to MBT as a method of assessment.

On the other hand, Oduntan, Ojuawo and Oduntan (2015) submitted that MBT refer to a general group of assessment tools in which candidates read questions and respond in writing. These methods include tests such as knowledge and ability tests, for instance, writing of Arabic text of Surat *al-Fātiḥah*, meaning and full commentary, and inventories such as personality and interest inventories as in the topic of history of the Prophet Muhammad and his companions. They further explained that MBT can be used to assess a subject or a course such as Quranic memorization, job-related knowledge and ability or skill-qualifications. Because many candidates can be assessed at the same time with a paper and pencil test, such tests are an efficient method of assessment. They refer to this method as a traditional method of evaluation (a combination of essay examination and practical examination) mostly used for evaluation of students' knowledge.

Nature of Computer-Based Test

Test and assessment is not new to academia with the roots of the current movement dated back to over two decades (Martell & Calderon, 2005). But two decades hardly take us back to the origins of test and assessment in the United States (Pearson, Vyas, Sensale & Kim, 2001). To this end, Akinyemi, Adebisi and Ekong (2007) submitted that the advent of web applications into the computing technology has brought about a significant revolution in our social life, including the traditional system of education and examination. The 1960's witnessed further support of standardised testing when the National Assessment of Educational Progress (NAEP) was formed and it produced the Nation's Report Card but perhaps, no initiative had had as broad and pervasive impact as the No Child Left behind Act of 2001 (NCLB), which formally ushered us into an age of accountability. The NCLB act is a sweeping piece of legislation that requires regularly administered standardised testing to document students' performance (Linn, 2002).

In a related development, the history about the origin of computer-based assessment did not stop in the western world but continued in Nigeria as a worldwide phenomenon. Today, Open and Distance Education (ODE) has also become an acceptable mode of education in Africa and particularly in Nigeria (Adekanmbi, 2004). In 2002, a university with the name National Open University of Nigeria (NOUN) was established. NOUN started with four schools and later added another one making five till date. In addition, the Nigeria National IT policy formulated in the year 2000 is responsible for the monumental developments across the various sectors of the economy. The vision is to make Nigeria an IT-capable country in Africa and a key player in the information society. Its primary mission was to "Use IT" for education; creation of wealth; poverty eradication; job creation; governance; health; agriculture, etc (Ajayi, 2005).

On the influence of gender on CBT and MBT, researchers such as Sanni (2015) have reviewed students' views on the influence of gender on use of CBT in Nigeria. The finding revealed, among others that the majority of the respondents confirmed that CBT can curb examination malpractice and that majority of candidates were also found to prefer CBT to MBT or the conventional way of writing examinations. The respondents' preference for CBT was sensitive across gender.

Statement of the Problem

Manual-based tests in Nigeria are observed to be characterised by different forms of examination malpractices such as bringing in unauthorized materials, writing on currency notes and identity cards, spying on other candidates in examination halls, fraudulent change of answer sheets and examination scores or grades. Also, Nigerian universities, especially, the University of Ilorin are heavily subscribed as evident in the ever-increasing number of students admitted, and ever-escalating

work commitments for academic staff. This is also seemed to be a factor militating against the use of manual-based test. In this respect, the researcher wants to find out the perception of Islamic Studies students as regards Manual and Computer-based tests.

Many researchers have studied the use of MBT and CBT in tertiary institutions. Adewale (2011) who wrote on perceptions of learners on electronic examination in Open and Distance Learning Institutions. He found out that the difference in students' perceptions is based on the reduction of examination malpractices, wide coverage of scheme of work, students' academic performance, and inadequate facilities. More so, Ricketts and Wilks (2001) investigated the appropriateness of using CBT system for teaching numeracy and statistics to 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. Hence, this study examined Islamic Studies undergraduates' perceptions on the use of MBT and CBT in the University of Ilorin, Nigeria.

Purpose of the Study

The main purpose of this study was to find out Islamic Studies undergraduates' perceptions on the use of manual and computer-based tests in the University of Ilorin, Nigeria. Specifically, the study finds out the:

- (i) perceptions of Islamic Studies undergraduates on the use of CBT and MBT in the University of Ilorin based on gender
- (ii) difference in perceptions of Islamic Studies undergraduates on the use of CBT and MBT in the university of Ilorin based on academic level.

Research Questions

The following research questions were raised for this study:

1. Is there any significant difference in the perceptions of Islamic Studies undergraduates in the University of Ilorin on the use of CBT and MBT based on gender?
2. Is there any significant difference in the perceptions of Islamic Studies undergraduates in the University of Ilorin on the use of CBT and MBT based on academic level?

Research Hypotheses

The following hypotheses were formulated and tested for this study:

H₀₁: There is no significant difference in the perceptions of Islamic Studies undergraduates in the

University of Ilorin on the use of CBT and MBT based on gender

H0₂: There is no significant difference in the perceptions of Islamic Studies undergraduates in the University of Ilorin on the use of CBT and MBT based on academic level

Research Methodology

The research type adopted for this study was a descriptive research survey. This research method deals with conditions that exist with how and or what exists in relation to some preceding events that have influenced or affected a present condition or event (Abiola, 2007). The descriptive survey was adopted based on its appropriateness for the large population sample. The survey involved the use of researcher-designed questionnaire to elicit information on students' perception on the use of CBT and MBT. The population of the study comprised all Islamic Studies undergraduates in the Department of Arts Education and Department of Religions, University of Ilorin. One hundred and sixty-three (163) out of two hundred and twenty-two (222) 100 level Islamic Studies students, and one hundred and forty-five (145) out of one hundred and ninety (190) 300 level Islamic Studies students, and one hundred and forty-two (142) out one hundred and eighty-five (185) 400 level Islamic Studies students totaled four hundred and fifty (450) respondents were considered as sample for this study because of their experience in the use of computer and manual-based tests. Simple random sampling technique was used to obtain the sample. The researcher-designed questionnaire was used to collect data from the respondents. After the questionnaire had been drafted, it was given to experts in Test and Measurements in the University of Ilorin for vetting in order to enhance the face and content validity and reliability of the instrument. The final draft of the questionnaire was administered on fifty (50) students drawn from the Department of Arts Education and Department of Religions that were not part of the main sample. Test re-test method was adopted within two weeks. The data collected was analysed using Parson Product-moment Correlation Statistical tool. The coefficient of reliability was calculated at 0.84 which indicated that the instrument was reliable for this study.

RESULTS

H0₁: There is no significant difference in the perceptions of Islamic Studies undergraduates in the University of Ilorin on the use of CBT and MBT based on gender.

Table 1

Results of t-test showing difference in the Perceptions of Islamic Studies Undergraduates in

University of Ilorin on the use of CBT and MBT based on Gender

	N	X	SD	df	t-cal	Sig (2-tail)	Decision
Male	273	7.57	0.36				
				448	4.783	0.000	Ho ₁ Rejected
Female	177	9.59	0.57				

Table 1 shows a calculated t-value of 4.783, while p-value .000. Since p-value is less than the significant value of .05 for 448 degrees of freedom. Therefore, the hypothesis which states that there is no significant difference in the perceptions of Islamic Studies undergraduates in the University of Ilorin on the use of CBT and MBT based on gender is rejected. Hence, there was a statistically significant difference in the perceptions of Islamic Studies undergraduates in the University on the use of CBT and MBT based on gender.

H0₂: There is no significant difference in the perceptions of Islamic Studies undergraduates in the University of Ilorin on the use of CBT and MBT based on academic level.

Table 2

ANOVA showing the difference in the Perceptions of Islamic Studies Undergraduates in University of Ilorin on the Use of CBT and MBT based on Academic Level

Source of Variable	df	SS	Mean Square	Cal F-value	Sig.	Decision
Between	2	1.946	0.973			Ho ₂
				5.321	0.000	Rejected
Within	447	81.801	0.183			

*Significant P<.05

Table 2 showed the F-value calculated of 5.321, while p-value is .000. Since the p-value is less than the significant value of .05, therefore, the hypothesis which states that there is no significant difference in the perceptions of Islamic Studies undergraduates in the University of Ilorin on the use of CBT and MBT based on academic level is rejected. Hence, there is a significant difference in the perceptions of Islamic Studies undergraduates in the University of Ilorin on the use of CBT and MBT based on academic level.

Discussion of Results

Based on the findings, it was revealed that there was a significant difference in the perceptions of Islamic Studies undergraduates in the University of Ilorin on the use of CBT and MBT based on gender. The study is in conformity with the finding of Clariana and Wallance (2002) that gender was related to

performance differences between CBT and MBT. Some female undergraduates avoid too much Arabic texts unlike their male counterparts, which makes them prefer CBT that provides keys (options from which correct answers are to be chosen) unlike MBT which requires writing full texts of Arabic.

Also, it was revealed that there was a significant difference in the perceptions of Islamic Studies undergraduates in the University of Ilorin on the use of CBT and MBT based on academic level. The study is similar to the finding of Sanni (2015) that the perceptions of students on the use of manual-based test and computer-based test varies based on the application of the test. This implies that some students are very vast in computer knowledge while some are not. The statement of Adewale, Ajadi and Inegbedion (2011) also supported this finding that the difference in the students' perceptions on the use of CBT and MBT is based on the fact that CBT reduces of examination malpractices in it and encourages students to study wide range of course outlines. However, inadequate computer systems, and students; low performance when online assessment is used and the students difficulty in interacting with computer screen have made a significant difference compared to MBT.

Conclusion

The study concluded that some students prefer writing all examinations with CBT than MBT because they spend less time, more comfortable and sometimes, CBT does not allow them to express themselves. The potential for immediate feedback with CBT could help students learn better than the delayed feedback of MBT. The CBT system is vulnerable to hackers an CBT examination is not appropriate for every subject area. CBT enables assessment of a wide range of topics more quickly than MBT. MBT is prone to examiner bias than CBT. Marking is more accurate in CBT. Female undergraduates experience more stress while attempting CBT examination more than their male counterparts. It is easier for female to cheat in computer based test than male counterparts. Students at a higher level of education spend less time and more comfortable when doing CBT examination than MBT.

Recommendations

From the findings and conclusion of this study, the following recommendations are made:

1. The concerned university authority should be balanced in the conduct of tests and examination because the Manual-Based test system is better suited to some Islamic Studies courses.
2. The university authority should endeavour to organise orientation programmes for the students lagging behind on the use and application of the computer-based test.
3. Parents should endeavour to enroll their wards in computer training programmes and provide them with computer devices so

as to enhance their performance in Computer-Based test in tertiary institutions.

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