ADMINISTRATION OF COMPUTER - BASED TESTING AMONG NIGERIAN UNIVERSITY STUDENTS

BY

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Abstract

The University of the 21st century must be a market place of ideas where information and bold new ideas can be generated and made available to the masses of our people. Although the invention of the printed book and the internet event has greatly changed methods of teaching and learning, there is still a place for the direct spoken word between student and teacher, but the main function of university today is to show the student where to find the information he required and then make him read it for himself to pass his tests and Computer-based testing. Computer-based testing (CBT) is becoming increasingly common type of testing for certificate and admission of students. This type of test mode administration is being used in different parts of the world. The use of computer- based testing simplifies the entire examination cycle: generation, execution, evaluation and presentation. Specifically, the study sought to undertake the validity of computer Based testing among Nigerian university students and to ascertain the extent to which test development of CBT, standardization process, education and pedagogy, students performance and computer-based testing advantages, when taken together, would explain computer-based testing among Nigerian University students.

Introduction

One major problem for us today in Nigeria education is how to administer computer based testing which simplifies the entire evaluation cycle: generation, execution, evaluation and presentation for the people concerned. An important key to this problem lies in the integration of information communication technologies to promote e-education, e-examination and so strengthen and improve the quality of teaching and learning in schools, for it is only after this has been settled that the efforts invested in the building and equipping educational institutions can yield appreciable dividends.

In this challenging millennium, the world will be witnessing a sudden rise in the use of telecommunications and information technology in almost all aspects of human interaction. The wireless revolution and the internet event are not only changing the way we live our lives

in developing nations but also shaping the manner in which we transact business and pursue education in school and school-less settings. The availability of the internet services on even mobile phones has made it possible for a wide range of services to be transacted without the help of computer device. One of the major advantages of this phenomenon is to bridge the information gaps between the developed and developing nations, between the urban and rural areas, and so, contribute immensely towards improving education, developing business, and creating jobs. Clearly, then, it can be said that the use of telecommunication and information technology industry has taken the centre stage in world and national affairs, and education cannot be left out in the process (Eyibe, 2004).

Today, the wide spread availability of computers has significant impact on our curriculum, instruction delivery and students learning in education. Schools must create the right environment for effective education, training and examination. Indeed, lecturers must have access to computers while professors must function with the internet so that the necessary skills can be mastered and transferred. The advancement of these new technologies should provide the measurement environment, both urban and rural, with the potentials in test development and an alternative test delivery mode of on line or Computer-Based Test (Claviana and Wallace, 2002). This paper will therefore, be discussed under the following headings:

1) Test development of Computer-based testing.
2) Standardization process
3) Education and pedagogy
4) Students and high performance
5) Advantages of Computer-based testing
6) Conclusion and Recommendation

Computer-Based Testing (CBT)

Computer-Based Testing is a process by which examinations are delivered, taken and stored electronically. This involves the deployment of test or examination questions on to computer workstations, both intranet and internet, and candidates are expected to answer the questions on to the computer. Clearly, then, the process of writing this mode of examination is thus completely paperless (Olawale and Shafi'l, 2010).

Again, one of the challenges facing education and examination in the new millennium is the integration of information communication technologies to promote e-education, e-

examination, strengthen and improve the quality of teaching and learning at the secondary and higher education levels throughout the Federation. The thrust is to encourage the use of information communication technology as a learning tool in schools especially in face-to-face teaching and learning, on-line network and effective laboratory work among other support services. Here again, to be able to do this well, teachers at all levels of education must be equipped technically and technologically.

Standardization process

The standardization of test administration condition is one of the benefits offered by the computer-based testing. This testing method is being extensively used in many parts of the world today. One of the major advantages of the computer-based testing is that it helps to simplify the entire examination or testing cycle including generation, execution, evaluation, and presentation. The true novelty of the computer-based testing is that it offers test developers the opportunity to improve their productivity and enables the examiners to gain experience and confidence in test or examination development and so familiarize themselves with the answers to improve the content validity of the test scores.

Clearly, then the effect of answer changing on test performance within the context of computer-based testing is a great consideration of its validity. It is gratifying to observe that no matter what the tests' population size is, computer- based testing (CBT) helps test developers to set the same test conditions for all candidates (AI-Amri 2008).

Testing is a vital tool in educational measurement and evaluation. Tests are used to gather valuable data on which educational decisions are based. These decisions are varied and centre on the learner. To obtain authentic and accurate data, the tests employed for that purpose should possess essential characteristics of reliability and validity. Reliability of a test relates to the degree of consistency or stability which the test exhibits. In other words, this has to do with how far a' particular test result represents the student in the attribute being measured, and how reproducible such test results are when the measurement is repeated on different occasions, or when retested with an identical test.

Let us assume that two students; James and John obtained scores of 42% respectively in a particular test. Three days later, the same test was re- administered to the same class, and their scores were 65% and 23% respectively. As the scores of these two students or testees on the same test are inconsistent over time, such test is said to be unreliable. Reliability, therefore, connotes the accuracy, trustworthiness' or dependability of a test. Again, validity of a test refers to the extent to which a test measures what it is set out to measure and nothing else.

The validity of a test, therefore, depends on the purpose. This means that a test which is valid for one purpose may not be valid for another. For instance, a test which is valid for assessing achievement in Senior Secondary one Mathematics will not necessarily be valid for assessing achievement in Senior Secondary two Mathematics (Nworgu, 1992).

Clearly, then, standardization refers to uniformity of procedure in administering and scoring the test. For scores obtained by different individuals to be comparable, testing conditions should be the same for all. This means that the process of standardization is visible in all aspects of testing: construction, administration, scoring, reporting, and interpretation of results. A standardized test, therefore, refers to an assessment instrument which is designed to obtain samples of behaviour under uniform procedures. To secure uniformity of testing conditions, the test marker or developer should provide directions for administering newly developed test as a major part of test standardization in Computer-Based Testing procedure.

Education and Pedagogy

Education and pedagogy are particularly important, interesting and suitable in the innovation of computer-based testing in Nigeria. Today, employers of labour are conducting attitude tests for job seekers through computer-based testing. The basic hypothesis of this paper is that computer familiarity or experience accounts for major factors that affect student's scores on computer-based testing. Similarly, the inability of students to be accustomed to looking at the computer monitor, to efficiently record, and edit ideas, interferes with their ability to communicate their thinking in writings on computer-based testing (Russel and O'Connor, 2003).

The action needed now is to provide the necessary telecommunications infrastructure so as to improve the educational and economic life of the country. While it is observed with dismay that the computer is still a mystery in many urban and local primary and secondary schools in Nigeria, it is clear that real progress will require that the Federal and state governments should ensure that more computers are introduced into the primary and secondary schools. As we strive to refine the lower levels of education in this direction, the NCE graduates nationwide should be computer literate with skills right across the subjects of the curriculum so that by the time our pupils and students leave schools many will be familiar with the computer keyboard and accustomed to looking at the monitor (Eyibe, 1989).

Progress will require that what may seem obstacles to sustainable education and information technology be turned into opportunities. The concept of information technology is closely related to the concept of globalization. Both offer powerful net benefits for developed and developing nations. The globalization of the world economy, for example, although carrying the

prospect of social and environmental damage, also carries prospects for gradual technology transfer, and the opportunity for introducing principles and policies for environmentally responsive economic development leading to the reduction of poverty levels (Eyibe, 2004).

These arguments are fully accepted, of course, by all. The educational system of a country is linked closely and organically to the whole production process just as it is to the political and to the social environment. In earlier times, this point was frequently overlooked, partly because apprenticeship tended to be seen as alternative to schooling; an alternative, moreover, which was not an integral part of real education. When production of material goods, however, depends as largely as it does upon the contributions of specialists in the basic and applied sciences, upon the careful and skilled work of well-educated practitioners, the relationship of education to production becomes evident to all. Universities and technical/technological institutions are now among the chief sources of trained manpower. They contribute directly to the general increase in wealth. Recently, the universities and other tertiary institutions are registering and conducting electronic examination for students through the internet and other electronic networking gadgets. Computer-based testing (CBT) has not been widely adopted by all Nigerian Universities in the Unified Tertiary Matriculation Examination (UTME). This is a kind of pre-admission screening. It is unfortunate that few universities in Nigeria have started using the computer- based testing for their examination. It is expected that others will follow gradually as is the case in other parts of world.

Performance Assessment

One major advantage which computer-based test has over paper and pencil test (PPT) is found in large-scale assessment of candidates. McDonald (2002) observed that there is abundant empirical evidence that identical paper- based and computer-based tests will not obtain the same results. These findings are based on factors bordering on the "test mode effect". There is no doubt that the performance of students is not always adequately measured. Again, the performances of students who are not accustomed to writing with computers are underestimated by computer-based writing test. Likewise, students become more fatigued when reading texts on a computer screen than when they read the same text on paper in our developing environment.

Advantages of Computer-Based Testing

The first major advantage of Computer-based testing is that it ensures prompt delivery of raw scores. Second, it eliminates cases of incomplete result. Third, it eliminates result blackout.

Fourth, it checks examination malpractice cases. Again, candidates also have two options namely: paper and pencil test (PPT) and secondly, Dual computer and paper based test.

Factors Affecting Validity of Tests

The following factors affect validity of tests:

1. Unclear or vague instructions in a test will likely misdirect the testees in responding to the items accurately.
2. Poor sentence structuring in tests affects the testees' comprehension of the tests required in the tests.
3. The use of inappropriate vocabularies such as strange technical jargons or words in tests affects the testees' understanding of the tasks required in tests.
4. The use of ambiguous statements in tests is likely to lead to misinterpretations, and so confuse the pupils or students. Such tests are, therefore, not valid.
5. This means that every lesson in class is a lesson in English, and every teacher in school a teacher of English.
6. All tests must be specific on terms of behaviour being measured

Conclusion and Recommendations

This study has examined the test mode of Computer-Based testing among Nigerian university education students and has seen that computer familiarity is one of the major problems facing students in this mode of testing. This means that test formats and prior computer experience are important factors that affect validity of scores provided by computer-based testing in Nigerian students. The following recommendations are made:

1. It is recommended that this mode of administration should be considered and practiced on a continuous basis in order to promote instructional uses of computers in education and testing (Eyibe, 1989).
2. Future research should be focused on quality of computer-based tests.
3. It is also recommended that future investigations should be directed towards content familiarity or content validity so as to ascertain the extent to which the test measures

both the subject matter content and the instructional objectives designed for a given course which is the most appropriate form of validity for achievement test.

4. For selection purposes, aptitude tests are preferred to achievement tests. This means that there is need for a paradign shift from achievement test to aptitude test for UME/UTME (Obioma and Salau, 2007).

5. It is mandatory to include experts in Measurement and Evaluation in the post UME test development.

6. Teachers at all levels and university teachers in particular, need to maintain the integrity of their examinations/tests and expose their students to computer applications.

In the light of events, it can be seen that there is hardly room in Nigerian education for professional competence and motivation for the use of varied teaching approaches such as small group teaching, group discussion, computer assisted instruction, seminar methods of teaching that enable students to develop abilities for synthesis, critical analysis, communication, reading, listening, and problem solving skills which are vital, if their education is to impact on national development. What we have in Nigeria is corrupt forms of teaching/lecturing where the teacher hurriedly dictates from notes or texts. Excellence in teaching must be nurtured if our higher education is to retain their mission of discovering, transmitting, preserving knowledge and skill and so help to construct the national economy.

Unfortunately, our curriculum content and implementation are examination-centered, content driven and encourages memorization of learning with teachers and students running helter skelter to cover the examination syllabus (Eyibe, 1990). If we must impact on the construction of a knowledge economy and society, we must de-emphasize the cognitive mastery, paper qualification, and the result of written examination and place greater emphasis on ability to think critically, analyse computer problems, seek for solutions apply and accept responsibility. This means that we must adopt a learner- centered pedagogy and begin there to fix the broken down Nigerian education system for the benefit of all (Eyibe 2012).

Finally, we would like to conclude by saying that equally important is the need for some specific empirical studies aimed at throwing more light on various aspects of these enormous innovative practices in our education and examination systems. But again, unless there is a continuous flow of electricity, how can the computer-based testing provide its beneficent effects on examinations? Here is one area, in which we need more serious national thinking and less wishful thinking.

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