
Application of Information Communication Technology-Based Classroom Assessment in Nigeria Secondary Schools

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Abstract

The paper examines the importance of the application of ICT-Based classroom assessment into Nigeria Secondary Schools as it would reduce examination irregularities, high failure and dropout rates. It would encourage the production of reliable human resources with relatively high level of achievement necessary for the national development of Nigeria as a country. The paper ends with a number of recommendations.

Introduction

Half a century ago the classroom was a world of blackboard and chalk, students sitting on benches or bare floor, facing the teacher whose job was to impart knowledge to the largely passive students who knew that one day they would be examined on the knowledge acquired through this process (Molina, 2006). Over the years this process may have added white board and ink pen, over head projectors and some videos but the passive learning processes have hardly changed for most. Today, few would be able to argue cogently in favour of the permanence of this system for the future in the face of the changes and possibilities opened by the new technology. Indeed, arguments for no or little change in schools do not seem to exist, apart from “lack-of-resource” reasons that tend to discourage people from starting innovation processes that may require substantive investments. On the other hand, the reasons for ICT innovation in schools and the educational system are powerful, amongst them are:

- a world in constant change and need for learning;
- opportunity to work for a better society and education system: not only a “learning society” – also a “better society”;
- no class or even subject can desirably remain an “Island of the past” Hence, students should be introduced to ICT – Based classroom assessment;
- good examples of ICT use in schools and educational system are increasing; and

- ICT-Based classroom assessment will enhance learning and reduce wastage.

Today's and future generation are growing in societies where the primary of Information and Communication Technology (ICT), networks, knowledge, and constant innovation in economic growth and society at large, has led many scholars to talk of "information society", the "knowledge society", the "learning society". In addition, information and communication technology are parts of the major elements that characterize our society. Therefore, introducing ICT-based assessment into secondary schools will enhance learning and makes school more interesting to students.

The Concept of ICT

The marriage of computer science and telecommunication equipment using any of the available and reliable technologies to gather or obtain information of various levels is called Information and Communication Technology (ICT) (Molina, 2006). It must be noted that in the new knowledge, society demands more independent and responsible behaviour and much less routine execution of orders. To prosper and sometimes even to survive, people now need to be able to make responsible and timely decision in new and unexpected situations. Most of all they need to continue to learn throughout life. Individuals seek to use ICT for personal growth, creativity and joy, consumption and wealth. They need to be able to analyze mass media information critically and to use it productively. The skills noted above are indispensable to ICT-supported and ICT learning environments. However, more and more industrial professional and business occupations call for knowledge-based and skillful intellectual work. A worker's ability to use ICT fluently is necessary in more and more occupations. Former skills have become obsolete. The abilities to make pen and paper, arithmetic calculations are now viewed as specialized ability.

Today, ICT has been of great assistance in the following areas among others:

- E-Learning;
- E-Classroom assessment;
- E-Government;
- E-Voting;
- E-Business;
- E-Commerce;
- E-Trading; and
- E-teaching and learning in schools.

With the advantages of being nature-protecting, non-polluting, less energy consuming and more human friendly, ICT applications are becoming indispensable part of our contemporary culture, spreading across the globe. Hence, ICT could be exploited to assess students in the classroom in an attempt to enhance learning.

Assessment practice in Nigeria

Assessment in the classroom referred to the mechanism of deducing the extent to which instructional objectives have been achieved in the class (Ogunboyede, 2006). Instructional processes are designed to foster desirable characteristics in learners. These processes are usually formal and do take place in the classroom, where the

teacher leads learners to learn. Hence, educational assessment ought to be accorded prominent place in the school curriculum. Therefore, the planning of instructional processes at any educational level ought to depend on useful assessment information. The intention being that learning tasks or activities should be made relevant to the entering characteristics of the learner if meaningful learning is to take place.

Educational assessment is also serviceable during instruction to guide the learning process towards the desired goal, thereby fulfilling formative purposes, i.e assessment along the teaching learning process. Educational assessment at this stage provides information on human behaviour in the learning environment and thereby promotes needed information to enhance learning. Furthermore, there is need for adequate information on outcome of instruction. This is readily provided by educational assessment.

The history of Educational Assessment in Nigeria educational system started with the establishment of schools by the missionaries during the pre-colonial era. Classroom assessment then was based on one-short examination usually called terminal examination Terminal Examination had for long time dominated the scene of assessment of pupils' progress and achievement and had been about the only form of determining students progress and performance especially in developing countries (Ogunboyede, 2001). Hence, passing examination at all cost to secure certificates had led to series of examination irregularities in Nigeria (Oluyeba, 1998). Examination and its associated problems in Nigeria has reached such a level and intensity that causes a great concern to the examiners and the examinee, the government and its people, teachers, parents, employers of labour, admissions and examining bodies and the institutions of learning themselves. The problems created by examination irregularities have been commented upon at various levels by many researchers (Aliyu and Adeloje, 1991; Yakubu, 1995). In fact, Okoye (1986) concluded that the Nigerian national hopes and aspirations as regards building up a virile, prosperous and stable nation may be utterly negated, if these irregularities are allowed to continue riding rough shod over the Nigeria populace. Hence, the federal government on its part introduced continuous assessment policy into our educational system with the hope of exterminating examination-associated problems from our educational system. This is because, with the introduction of continuous assessment, the final assessment of the child would not be based on one-shot examination which is prone to examination malpractice but based on the continuous and cumulative assessment of the child. Hence, unnecessary emphasis is not expected to be placed on one shot examination.

Specifically, continuous assessment was introduced by the Federal Government in Nigeria Educational system in 1982 and the practice had been on since then. The policy reviewed the erstwhile system of determining students' achievement by the one short end-of-year or end-of-course examination. The new policy now known as 6-3-3-4 system of Education lays emphasis on the continuous assessment of students in all educational institutions in the country, including primary schools.

Primary Education: the Federal Government policy document advocates:

- (i) ‘that progress along the education cycle will be based on continuous assessment – over all guidance-oriented assessment by teacher and Headmasters’
- (ii) “That the first school leaving certificate Examination will ultimately be abolished and primary school certificate will be issued by the Headmasters of individual schools and will be based on continuous assessment of pupils and not on the result of a single final examination”. (NPE, 1998: 13).

This is supported by paragraph 99 (1), which states that:

Ultimately, there will be no formal examination at the end of the first six years of primary education; certificates will be based on continuous assessments.

This then means that continuous assessment results will be used wholly for certification at this level. Apart from these policy statements at the primary level, continuous assessment has almost equally important roles to play in the Junior and Senior Secondary School certification in particular.

Secondary Education: Briefly the policy states that the Junior Secondary School and Senior Secondary School Certificates should be based on a combination of continuous assessment results and a final examination. In secondary school education, continuous assessment would also be given special consideration in the admission of pupils into the secondary schools, unlike in the past when the national common entrance examination was the only instrument of selection. The Government in its white paper states that:

- (i) As an interim measure, the present system of a National Common Entrance Examination will be allowed to continue until the Junior Secondary School system has taken off such that it incorporating Headmasters’ Continuous Assessment.
- (ii) At the end of the first three years (3years) following primary education, the Junior Secondary School Certificate will be based on state examination and Continuous Assessment method. The certificate will be issued by state ministry of education.
- (iii) At the end of the second three years course (Senior Secondary) a formal examination will be given but the performance during the three years will be weighted and taken into account for certificate purposes. (NPE, 1998:21)

It was initially proposed that continuous assessment would be weighted 60% and examination 40% for the Junior Secondary Schools while 40% continuous assessment and 60% for examination at the Senior Secondary School-level; it was changed to 70% examination and 30% continuous assessment for both Junior Secondary School and Senior Secondary School level. The continuous assessment weighting by class according to decision reached by National Council on Education (NCE) in February, 1988 are JSS I 5%; JSS II 12%; JSS III 12½% ; SS I 10%; SS II 10%; SSIII 10%.

Even though the ratios have been reduced for reasons to be discussed later, the emphasis and importance is not reduced. Students can now have a consistent and all

round assessment with the continuous assessment. All aspects of learning and development are taken into consideration throughout one's period of study: thereby giving a more valid and more indicative assessment of the learner's ability than the one-shot examination. This situation will give the child an opportunity of receiving a well-balanced guidance and counseling towards further education and career. Ojerinde (1997) observed that the kind of decision to be made determines the kind of information sought and therefore, the kind of assessment to be made. Rather, one may say that the kind of assessment to be made will determine the kind of information to be sought and the kind of decision to be made.

The teachers are given an opportunity in assessing the pupils they have taught and having a say in their overall assessment. This assessment process also gives the teacher opportunity to evaluate his/her own teaching methods so as to come up with innovation and improvement in his/her teaching techniques.

The 'threat syndrome' inherent in the one-shot examinations like the Senior Secondary School Certificate Examination (SSCE) are alleviated through continuous assessment. One of the major reasons for high incidence of examination malpractices is the fact that the single final examination is so crucial in deciding the future of the candidates that the temptation to ensure success by all means is very high.

Higher Education: University and other tertiary institutions certification should also be based on combinations of continuous assessment and examinations. At the higher education level, the Federal Government Policy gives room for the implementation of the continuous assessment practice. The Government advocates that:

“the University and other institutions of higher learning will also be required to reconsider the practice whereby examination performances in a limited number of papers determines the grading of graduates and to explore ways of introducing an element of continuous evaluation”.

The above lofty objectives of the Federal Government regarding the practice and administration of continuous assessment are highly commendable. But the implementation mechanism needs to be structurally designed in such a way as to eliminate defects and lapses at the final stage.

However, it is highly disheartening that since the introduction of continuous assessment policy into Nigeria schools in 1982, some of the problems that led to the introduction of continuous assessment policy into the Nigeria schools had been on the increase as a result of the poor implementation of the policy (Ogunboyede, 2006). He reported that continuous assessment was not being implemented according to its implementation guiding principles in secondary schools in Nigeria.

Therefore, this paper suggests ICT-based classroom assessment which is a safer and not prone to examination irregularities. It is equally a surer route to reaching the education for all come 2015.

What is ICT Based Classroom Assessment?

By now teachers are used to assessing pupils and understand that it is a part of teaching. They assess regularly, both formally and informally particularly in the core subjects and then use these assessments to make judgments about their pupils progress

and about their own effectiveness as teachers. They have used the results of the assessment to improve their teaching, to gauge what a particular child or group of children need, and to pass on useful information to other teachers and to parents.

Hence, ICT-Based assessment can be defined as a formative or summative assessment of an educational programme using the computer. The assessment is electronically administered and scored. The folder of leveled indicators of pupils' progress using ICT has been developed by the Essex ICT curriculum advisory team in United Kingdom (UK). To provide support for teachers in planning for progression and the assessment of pupils' performance using ICT (Mcfarlane, 2001). The software provided can enable individuals, groups to be assessed, their progress to be tracked and targets to be identified. Individual reports can be automatically generated. The software produces a statement of what the child has achieved and the next step target. One of its laudable features is that feed back on pupils progress could be e-mailed to the child or parent or guardian. Data can be compared between classes within a school.

Perhaps, one of the most beneficial applications of ICT is in the education sector (Jones and Mercer, 1993). Using ICT applications, a number of educational institutions are not only able to run courses concurrently, but lectures/assessment can also be administered simultaneously, as they are being delivered, in different lecture rooms that are located in places far away from the actual point of delivery.

We Need New Ways of Assessing Educational Progress of Pupils

Assessment in education is one of the most powerful determinants of practice in the classroom, made more so by the standards and accountability reforms of the past decade. Many previous, well meaning and well resourced attempts to reform education have stumbled through an inability to demonstrate improvement on standardize tests over the aged long teacher made test (Ogunboyede, 2006). More often than not, such efforts have assessed what was easiest to measure rather than what was most important to measure. Consequently, along with changes in other areas of the educational system, educational assessment must be transformed to be more responsive to the social and economic needs of students and society as we face the millennium development goal to be achieved in year 2015, which is "Education for all".

Existing modes of assessment are typically at odds with the high-level skills, knowledge, attitudes and characteristics of self directed and collaborative learning that are increasingly important for our global economy and fast changing world. New mode of assessments are needed that would engage students in the use of technology and digital resources (ICT-Based assessment) and the application of a deep understanding of subject matter to solve complex, real world tasks and create new ideas, content and knowledge. Therefore, we need ICT –Based classroom assessment that would bring about increasing convergence between the worlds of work and learning/training facilitated by the penetration of ICT-Based classroom assessment into both industry and education.

In short whether or not causal relations have been established between ICT and classroom assessment, the message is:

'Students' are using ICTs in their education process anyway:

- Most schools have to a greater or lesser extent installed computers and other forms of ICTs;
- Most schools are yet to make a substantial change in learning and pedagogical processes through the implementation of ICTs; and
- Most schools are yet to face major ICT-Based innovation processes such as ICT-Based classroom assessment aimed at transforming pedagogical and educational processes.

There are many international and national assessment programmes, assessment organizations, non-governmental organizations, businesses, research centres and individual researchers working on the specification of 21st Century skills and development of ICT –based formative and summative assessments. The government should harvest good recommendations on the implementation of ICT-based classroom assessments from the various aforementioned groups.

Advantages of ICT-Based Classroom Assessment

Some of the advantages of ICT-Based classroom assessment according to Taylor (1980); Murdach (1997) and McFarlene (2001) among others are:

- (i) it reduces the occurrence of leakages of questions;
- (ii) reduces examination irregularities;
- (iii) there is good time management;
- (iv) it helps to reduce the present high failure and drop out rates;
- (v) it helps to reduce unsatisfactory relative academic achievement;
- (vi) it aids more efficient management of resources;
- (vii) it provides opportunities for students to reach important criteria at their own rates;
- (viii) scoring of assessment instrument can be done within a very short period of time with a high level accuracy;
- (ix) it leads to more reliable and valid report concerning the academic progress of students; and
- (x) better interpretation of students' academic performance can be produced which would be more meaningful to parents.

Conclusion

Most educational systems operate much as they did at the beginning of the 20th century. While contemporary business and social practices engage people in collaborative efforts to solve complex problems and create and share new ideas using ICT traditional instructional and assessment practices require student to work individually as they recall facts or perform simple procedures in response to reformulated problems within the boundary of the school curriculum and these they could achieve better through ICT-Based classroom assessment., this paper concludes with the belief that if ICT-Based classroom assessment is introduced to schools, it will enhance learning and equip students with relative satisfactory academic achievement that would enable them contribute meaningfully to the Development of Nigeria as a country in the nearest future.

Recommendations

Education for All (EFA) is an international commitment, first launched in Thailand in 1990, to bring the benefits of education to “every citizen” in every society and this is referred to as Millennium Development Goal which is to be achieved by 2015. Hence, based on the discussion in this paper, the following recommendations are made:

- increased resource investment in ICT-based classroom assessment from all sources: public and private sector and by each individual;
- careful attention and support to the changing mode of assessment. It would make learning to be attractive and relevant to the individual;
- provision of appropriate ICT infrastructure and ICT-based assessment software. In all schools, including equipment, broadband communication facilities maintenance etc;
- development of specific networks for ICT-Based assessment and training to provide teacher with training and materials; and
- ICT –Based classroom assessment should be built into Teacher Education Curriculum.

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