ADOPTION OF ICT-BASED SECONDARY EDUCATION FOR ACTUALIZING THE MILLENIUM DEVELOPMENT GOALS IN NIGERIA

Odeniyi O.A[1] Ayinde A.Q[2], Lawal N.B[3], Ghazaly-Agboola A.B[4] and Kolade S.O[5]
1. Computer Science Department, Osun State College of Technology, Esa-Oke, 234035/South West, Nigeria
2 Computer Science Department, Osun State College of Technology, Esa-Oke, 234035/South West, Nigeria
3. Computer Science Department,Osun State College of Technology, Esa-Oke, 23402/South West, Nigeria
4. Computer Science Department, Osun State College of Technology, Esa-Oke, 234035/South West, Nigeria.
5. Computer Science and Engineering Department, LAUTECH, Ogbomoso,23402/South West, Nigeria.

Abstract

It is clear that the Nigeria government is making deliberate efforts toward achieving the Millenium Development Goals (MDGs). However this paper is interested in seeing the adoption of ICT-based secondary education for actualizing the MDGs in Nigeria. It touches upon the three dimensions of educational processes namely ''learning'', ''teaching'', and ''educational environment'' also focused on the action of learning.

Quality education can and should be sought everywhere, and not only in more affluent contexts. ICT integration into educational processes should be part of the effort towards improving them and making the most of available resources, even when these are meagre as in most developing countries like Nigeria. ICT also provides a glimmer of hope towards achieving the goal of quality universal education. The developing country has to find new methods that will dramatically improve both its children's schooling and its continuing education system. As in every other walk of modern life, the answer to the challenge of education for economic development will be positioned, in part, with technology.

Keywords: *Educational Environment, ICT, Learning, MDGs, Secondary Education*

1. Introduction

Nigeria as a nation cannot afford to be isolated from the wind of globalization. The wind of change is blowing rapidly across the globe. Changing economic, social and political situations in both developed and developing nations have combined to create needs for constant innovations and reforms in education.

Educational transformations are always the result and the symptom of social transformations in term of which they are to be explained. In order for people to feel at any particular moment in time the need to change its educational system, it is necessary that new ideas and needs have emerged in which the former system is no longer adequate.

In the developing countries, from the late 1950s to mid 1970s independence from colonial administrators, and in some cases new found wealth based on natural resources have contributed to a redefinition of social priorities and objectives.

For the fact that the society cannot do without reforms, the whole world came together to initiate the millennium development goals (MDGs). The MDGs are eight goals that the 191 United Nations member states have agreed to try to achieve by the year 2015. These goals are as listed below:

(1) Eradicate extreme poverty and hunger;
(2) Achieve universal primary education;
(3) Promote gender equality and empower women;
(4) Reduced child mortality;
(5) Implore material health;
(6) Combat HIV/AIDS, malaria, and other diseases;
(7) Ensure environmental sustainability and
(8) Develop a global partnership for development.

The goals as listed above portend that reforms are indispensable. In the same vein, reforms cannot do without education. The implication here is that whatever initiatives a government or an organisation evolves for improving its operations or society, must among others, be backed up with appropriate educational strategies, practise and activities/learning experiences. Also education is part of the struggle over power and hegemony in the society. This struggle manifests itself through curriculum content, through what constitutes official knowledge, adding that, the day-to-day interactions in the classroom are deeply ideological processes that shape people's ideas about the way the world works, and one's place in it.

In compliance with the MDGs, the Nigerian government produced a document, national economic empowerment and development strategy (NEEDS) representing a compendium of strategies for reforms in all sectors of her society. Under NEEDS, education (especially basic education) is considered the key bridge to the future. Education is so regarded as a key instrument to empower the children to take charge of their lives in the future. It equally targeted job creation, that is with the intention of drastically reducing the incidence of poverty and hence put people at the centre of development efforts. The document was also not silent on women. Its thrust in respect of women is to fully integrate them through enhancing their capacity to participate in the economic, social, political and cultural life of the country.

From the foregoing, it is clear that the government of Nigeria is making deliberate efforts toward achieving the MDGs. However this paper will be more interested in seeing the adoption of ICT-based secondary education for actualising the MDGs in Nigeria. The paper touches upon the three dimensions of educational processes, i.e. ''learning'', ''teaching'', and ''educational environment'', but focuses on the action of learning. It starts from the notion that all educational processes, particularly those said to be ''student centred'' should be towards good learning.

2. Literature Review

As Moore [4] points out, ICT also provides a glimmer of hope towards achieving the goal of quality universal education. The developing country has to find new methods that will dramatically improve both its children's schooling and its continuing education system. Guitert and Coderch [3] highlighted some of the new informational skills listed below, which offer particular value in present and future educational environments. Duart [1] proposes a series of direct docent actions that while in the realm of *virtual learning environments* apply equally well to secondary education. Perhaps Resnick [7] exaggerates when affirming that "As new technologies continue to quicken the pace of change in all parts of our lives, learning to become a better learner is far more important than learning to multiply fractions or memorizing the capitals of the world". Duart [2] proposes that his models of learner-centred learning in universities could well be applied to secondary education. This includes greater freedom for the student/learner to use various types of supports, or the possibility to plan individual progress at the same time as regulating one's own working rhythm. According to Peters [5], teachers can take advantage at least four new types of possibilities based on ICTs. Certain conditions pointed out by Werry [8] in university settings, like de-formalization of working conditions or teachers' loss of control over the academic process, are even more evident in secondary education (this includes developing countries as well). Add to this low salaries and the growing level of conflict in the classroom (as is occurring in Spain, for example). Peters [5] underlines that Aristotle went as far as postulating that even the most abstract knowledge is base in sensory perception. According to Rashke (2002), learner-centric learning does not aim so much at mastering pre-established educational contents, but rather on the capacity to generate new contents.

3. Need for Adoption of ICT-Based Secondary Education in Nigeria.

Nigerian students' starts their secondary school education between the age of 9 to 14 years. We start from the assumption that in the secondary cycle it is possible to work on explicit pedagogical methods with the students. At this point in his/her education, the student possesses sufficient cognitive capacity about learning processes to enable teachers and students to build on educational practises introduced in earlier years. In other words this is the period for firming up learning/studying methods. Moreover, the student has attained sufficient social and intellectual capacity to consciously integrate the use of information and communication technologies (ICTs) particularly internet as a set of tools for new ways of learning.

The problems of the digital divide and other development divide must be mentioned at the outset. Clearly, the greater challenge is being able to educate all girls and boys in the world (Nigeria inclusive) which is moreover a well-accepted right of those children. The concepts hereby proposed imply prerequisites which are absent in too many cities and villages of the world (Nigeria inclusive), and therefore there are more directly applicable where basic educational standard had already been met.

If (ICTs) particularly internet changes educational environments along with the social context, it makes sense

that students will need to adapt to these changes. This implies that the student should ‘’learn how to learn’’ in the new educational context. To be sure, knowing how to learn is always one of the key objectives pursued in any proper pedagogical space. But at the level of a given educational environment (and perhaps more widely in the entire educational system), we could characterise the main pedagogical challenge as figuring out institutionally how to best empower students to learn.
It is assumed that pedagogical techniques in the secondary cycle are fully developed and formalised. While in the primary cycle, the student has followed certain learning patterns. It is in high school when such practices can become explicit. The student is mature enough in cognitive terms to understand that besides the usual subjects (maths, literature, and history) she can deliberately apply various learning methods. Most of us remember our best high school teachers more for the methods they made us discover that for the specific content they taught us.

Extending to the tertiary cycle (university), we could argue that while retaining only a small amount of the content we learned earlier, the university taught us to think (which is another way of saying ‘’taught us to learn’’). It is about reasoning and methodologies, about ways to formulate and analyse a given problem, about the tools we use; all these knowledge we gained has shrunk with time. Indeed, from the perspective of learning and the educational environment, the time factor appears as a resource to be explicitly integrated in plans and methodologies, for example, in the context of a given classroom, questions should arise like ‘’how much can one learn, in span of time ‘x’, about skills and knowledge related to the subject?’. The internet will help rationalize the time invested by public school teachers in the classroom. Technology tools can be included systematically in pedagogical models to make learning more efficient (less time for the same results), while maintaining or increasing its effectiveness (results in line with objectives).It was recorded that over seventy percent of Nigeria Universities had ICTs infrastructure fully implemented and from analysis it was observed that most year one students that finished from public secondary schools have challenges when writing a computer based examination or computer based mid semester test.
Less than five percent of the Nigeria public secondary schools have sustainable and effective ICTs infrastructure compared to the private secondary schools which are fully equipped with ICTs infrastructure. The public secondary schools are poorly funded by the government and this had adverse effect on both the students and the teachers in the e-learning world.
Questionnaire was distributed to ten different universities second year students in Nigeria on their educational performance on the computer based test and examination they had in their first year at the university. Total of 10,000 questionnaires was distributed and 9880 were administered. The analysis show that 3927 students finished from a public school in Nigeria, 5093 students finished from a private secondary school, 804 students are from neighboring Africa countries and 56 students are from other continent.
Averagely, 12percent of the students from the public secondary school had GOOD grade, 36percent from the private secondary had GOOD grade, 71percent of the students from the neighboring Africa countries had GOOD grade and 89percent of the student from other continent had GOOD grade.

4. Conclusion

The adoption of ICT for secondary education is indispensable in actualizing the Nigeria’s education reform and achievement of the MDGs. It is in this regard ICT makes it possible for nations to meet development goals such as poverty reduction, basic healthcare and education. However, for ICT in education to promote the achievement of MDGS, there is need for the effective management and coordination of ICT resources. This is an area that demands a lot of contributions from school head teachers and especially schools principals. Therefore it is necessary for principals to understand clearly the meaning of ICT, it benefits to human beings especially in education and how ICT in education can be developed and implemented.
The following are the ideas which a Nigerian principal who is in the process of starting ICT in education should considered to ensure an e-learning environment for his/her students or teachers:
(i) find out what is the current provisions in curriculum resources, for training and other needs?
(ii) find out the school basic needs to be ensure a friendly e-learning environment for both the students and the teachers
(iii) create an ICT section in the school development plan
(iv) conduct a staff ICT training and must conduct weekly assessment for both the teachers and the students
(v) review the curriculum
(vi) consider approaches to teaching and the structuring of tasks
(vii) consider how ICT can have impact on a range of learning approaches
(viii) consider the ICT present learning environment and what is needed to deliver the curriculum
(ix) determine how assessment, recording and reporting for ICT will be done
(x) consider developing a policy statement for ICT across the school

(xi) determine how monitoring and evaluation of ICT will be carried out.

Below are the following indices that can be employed for a successful ICT implementation as a guide to principals:

(i) motivated, challenged and required to think themselves;

(ii) encouraged to be independent and confident users of technology;

(iii) set tasks that encourage cooperation and collaboration to tackle them and solve given problems; and

(iv) more responsive in the context of support for learning activities.

These indices of successful ICT in education should guide every principal during the development and implementation phases of ICT in education in his/her school. At the planning stage, they guide the selection of learning content and resources, while at the implementation stage they guide the process of evaluation. One under pinning requirement is that every school principal should endeavor to be ICT literate and to be competent in the use of technology. For sustainable ICT in education, the principal or administrator ‘’must have a broad understanding of the technical, curricular, administrative, financial and social dimensions of ICT use in education. Without this type of understanding, the principal cannot provide the leadership necessary for the achievement of the MDGs and actualizing education reforms through ICT-based secondary education.

It has been shown in this paper that ICT-based secondary education can lead to education reform and the achievement of the MDGs. However, this can only be possible when ICT is effectively implemented in schools and in the society. To promote the development and implementation of ICT-based secondary evaluation, the following recommendations are made:

(i) ICT education should be compulsory in all secondary schools in Nigeria.
(ii) Serving teachers should be given the opportunity within a specific period to become ICT literate through in-service education
(iii) Government should ensure the provision of basic ICT facilities in all secondary schools
(iv) School principals should involve the parent
(v) teacher associations in the provisions of ICT facilities in schools.
(vi) Every secondary school should have an ICT coordinator.
(vii) The state and federal ministries of education should ensure the provision of electricity in every secondary school.

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O.A Odeniyi obtained his B.Tech (Computer Science) from LAUTECH (1996). He held Post Graduate Diploma (PGD) in Education from Natio nal Teachers’ Institute Kaduna (2006). He is presently a research student at the Department of Computer Science and Engineering, LAUTECH. He is a Lecturer 1 at Osun State College of Technology Esa Oke. He is a member of Computer Professionals Registration Council of Nigeria (CPN) and Nigeria Computer Society (NCS).His research areas are soft computing, ICT, Data mining and Database.

A.Q Ayinde obtained his B.Tech (Computer Science) from LAUTECH (2008).He is a research student in the Department of Computer Science and Engineering, Ladoke Akintola University of Technology (LAUTECH) and a Lecturer in the Department of Computer Science at Osun State College of Technology, Esa-Oke. His research areas include Data Mining, ICT, Soft Computing and Database. He is a member of the following

professional bodies Redhat Linux (RHCE Certified) Microsoft (MCITP Certified) and Information and Technology in Infrastructure Library (ITIL Certified).

N.B Lawal obtained his B.Tech (Computer Science) from FUTA (2001), He is a research student in the Department of Information Technology Management for Business, University of Greenwich, UK and he is a Lecturer II in the Department of Computer Science at Osun State College of Technology, Esa Oke He is a member of Computer Professionals Registration Council of Nigeria (CPN). His research areas are Soft Computing, ICT, Data mining and Artificial Intelligence.

A.B Ghazaly-Agbppla obtained his Higher National Diploma (Computer Science) from Federal Polythenic Ede (2002).He held PGD in Education from the National Teachers' Institute Kaduna (2007).He is currently winding up his B.Tech (Computer Engineering) at LAUTECH. He is a Lecturer II in the Department of Computer Science at Osun State College of Technology,Esa Oke He is a member of Computer Professionals Registration Council of Nigeria (CPN) and Nigeria Computer Society. His research areas are Computer Networks, Modeling and ICT

S.O Kolade obtained his B.Tech (Computer Engineering) from LAUTECH (2008).He is a research student in the Department of Computer Science and Engineering, Ladoke Akintola University of Technology (LAUTECH).His research areas include Biometrics, ICT and Soft Computing.