19

REVAMPING EDUCATION FOR MEETING THE NEEDS AND CHALLENGES OF E-LEARNING IN NIGERIA

By

DR JONATHAN UGWU OKWOR
Department of Computer Education
Federal College of Education, Umunze Aambra State

DR U. C. ONYEMAUCHE
Department of Computer Science
Federal University of Owerri, Imo State

And

AMUCHE NKIRUKA OKEKE
Computer Education Department Umunze,
Anambra State

Abstract

The quest for efficiency of tasks delivery has led to the use of information technology to enhance acquisition and development of human competency, improved learning and teaching methods, and intelligent decision-making process in organisations. The conventional system of education designed by the colonial masters has been the main style of delivery of education at all levels. Though this conventional system has succeeded to some an extent, it does not encourage effective creativity and active participation of the learners. Hence, it has now been proved grossly inadequate in offering the needed widespread knowledge access required by the world population. This paper examined extensively the flaws of conventional system of education delivery and e-learning technology as an alternative method of teaching and learning in Nigerian educational system delivery. The challenges affecting the efficient integration of e-learning into Nigerian education system as an alternative to traditional method or conventional system were thoroughly studied. The researcher made series of recommendations, in respect of these challenges, that would reduce or eliminate these setbacks in e-learning integration which would improve Nigerian education system delivery.

Introduction

The conventional system of education designed by the colonial masters has been the main style of delivery of education at all levels. This model system involves an organised structure comprising classrooms, teachers, learners, and other facilities required for instruction delivery. In this contemporary time called computer age, this conventional western education system has now been proved grossly inadequate in offering the needed widespread knowledge access required by the world population. Though this conventional system has succeeded to some an extent, it does not encourage effective creativity and active participation of the learners. According to Hafiz (2004), this conventional system has so many flaws which do not support the application of modern technologies required for efficient knowledge acquisition. These flaws are not limited to restriction of learning to particular locations, variably designated as schools, colleges, and universities; the institutions and their structures accommodate only specific number of learners; educational institutions are usually removed from residential homes of both the teachers and the learners; and specific durations of exposure of learning are designated such as minutes per lesson, lesson per day, lectures per term/session, and credits per course. These time schedules impose limitations to learning.

These problems of conventional western education necessitate the integration of information and communication technologies (ICT), specifically Electronic Learning (E-learning) to ensure effective teaching and learning in educational system. ICT could be defined as the application of computer and internet facilities or the blending of computer and telecommunication facilities such as World Wide Web (WWW), protocols, bridges, internet software, etc (Isaiah, 2013). The large-scale programmes of integration of ICT into African education system were announced by NEPAD, UNESCO, the World Bank, USAID, and the French Cooperation. The mobilization of the international communities was justified by the fact that the ICTs improve access to knowledge, communication and e-learning implementation where teaching activities are learners' centered, (Hafiz, 2004).

According to (Pauline, 2012), ICT is changing all aspects of our life and lifestyles, including the way we live, learn, and work. The author further reported that this digital revolution has given mankind the ability to treat information with digital precision, transmit it with high accuracy and manipulate it at will. These capabilities have turned the whole world into a global village, a scenario where information about every topic and

object are instantly available to any individual that requires it. The integration of ICT into educational system is an issue in attaining qualitative teaching and learning in our educational system (Hardaker, and Singh, 2011). The emerging technologies warrant that the conventional western education system should be reviewed upward or changed for better teaching and learning. Many developed nations have seen the latent benefits of integrating ICT, hence e-learning, into education system and consequently have developed national grids where content providers are linked together to create nationwide learning network for schools and higher institutions of learning (Okolo, 2009). The use of ICT is acknowledged as a quality input, in conformity with the sixth objective of education for all (EDA) expressed as follows at the Dakar Conference (2000): "To improve in all its aspects the quality of education with a desire to attain excellence so that all may receive acknowledged and qualifiedly results from their period of learning with regards to reading, writing and arithmetic as well as the required skills required for everyday life" (Papa, 2004).

The integration of ICT into educational system is a central issue that ensures quality and efficiency in teaching and learning because it enable the learners to be familiar with the use of ICT resources in addition to eliminating geographical or distance barriers and providing the teacher greater opportunities for content research and development (Mereku, 2011). ICT promotes greater collaboration and communication of knowledge among the learners; provides rapid and accurate feedback to the learners that lead to positive motivations. More importantly, it allows the learners to focus on strategies and supports constructive pedagogy which enables the learners to explore and reach understanding of subject concepts. This approach promotes high order thinking and better problem solving strategies (Onguko, and Hennessy, 2010).

ICT dominates the education agenda globally, prescribed as the major cost effective mode offering equity access to high quality education to the most marginalized learners and often their teachers within formal educational settings and synchronous instruction for the non-formal learners, largely through open and Distance Learning (ODL) practices (Clark, 2010). E-learning represents the primary thrust of ODL strategies with every indication for constituting the mainstay of ICT driven delivery (Gordon, 2004). Recent developments in Distance and open learning and by extensions ICT are proving the solutions to some problems of the conventional methods of western education. Distance

and open Leaning through the use of ICT can remove the problems of time and space. The learner can study at his own time, at his own pace and in any place. Lessons can be provided to greater number of learners with increased flexibility, doing away the limitations of number imposed by the classroom-based education (Boere and Kruger, 2008). But Distance and Open Learning is impersonal, and lacks spontaneity and depends on quality of learning materials and the efficiency of delivery and supporting methods. The use of ICT resources extends and enriches the benefits of Distance and open learning and offers the best solutions to the challenges of learning and teaching (Hafiz, 2004).

E-Learning and its Benefits

The absence of a universally accepted definition for e-learning has made the term a buzz word because different researchers have defined the term to suit the context of their environment, background, perception and exposure to the learning system (George, 2011). Some institutional bodies, like the Australian Flexible Learning Framework and Guide Training Authority and American Society for Training and Development (ASTD) Learning, have defined e-learning to include the use of electronic and multimedia resources to facilitate teaching and learning (Boere and Kruger, 2008). Such electronic media include the Internet, Intranet, Extranet, the World Wide Web, satellite broadcast, audio/video tapes, interactive TV and CD-ROMs that make learning more flexible for students. According to Mohamed and Oso (2014), E-learning is defined as the application of information technology such as Internet, mobile devices (notebooks and tablets) and other computer aided systems in the teaching and learning process, either asynchronously or synchronously. E-learning is described as asynchronous when the system is used mainly for content management system where users access information at different times without real time collaborations, while the system is Synchronous (or pedagogy) when it is designed for online users who collaborate at the same time (Tan, 2011). In both definitions, the content management system for E-learning acts as archives for learning materials available on the web. E-Learning is also described as instruction delivered on a digital device such as a computer or mobile device that is intended to support learning.

E-learning is a revolutionary way to empower learners with the skills and knowledge they need in a convenient time and space-independent means (Sbalele-Mayisela, 2009). It is the online delivery of information, communication, education, and

training, providing a new set of tools that can add value to all the traditional learning modes- classroom experiences, textbook study, CD-ROM, and traditional computer based training. E-learning does not replace the classroom setting, but rather enhance it, taking advantage of new content and delivery technologies to enable learning (Omwenga, and Wegache, 2004).

Drawing from the various definitions described above, e-learning is defined as the use of ICT devices, Internet, Intranet, and World Wide Web resources, as an instrument to construct knowledge, to support teaching and learning in synchronous and/or asynchronous modes. Lin and Lin (2011) in their work, established that e-learning, can be as effective as or even more effective than live instruction, or more efficient if effective techniques are used, especially for the development of knowledge and critical thinking and decision-making skills using low cost mobile devices such as notebook and tablets. Lin, and Lin (2011) in their work towards an inclusive definition of e-learning, divided various definitions into four main categories: technology driven, delivery system oriented, communication oriented and education driven. Alfred (2008) stated that the basic building blocks of E-learning are technological, pedagogical (materials development and instructional design), and managerial and it is the close coordination between these components that reflects the relevance system implementation. Hence e-learning is now the cornerstone of the present day educational system delivery. In the current era of information and communication advancement as never witnessed before, the practice of face-to-face teaching delivery is fast becoming grossly inadequate and obsolete. Learners in most parts of the world now use technology to receive class lessons and information, take assessments, and communicate on demand (Isaiah, 2013).

Hafiz (2004) described E-learning is a form of learning that is provided electronically. It comprises the use of ICT resources such as computers, telephones, satellites, internet, and World Wide Web (WWW), multimedia platforms (CD-ROM or DVD). E-learning is provided partially or wholly via web browser or through the internet or intranet or through multimedia platform. Each teacher develops a webpage for his courses and the learners routinely logs on via the intuition internet for content, activities, assignments, assessments and tests.

E-learning encourages effective creativity and active participation of the learners, accommodates unlimited number of learner and learning can take anywhere as far as the

learner is connected to Internet. E-learning has numerous advantages compared to traditional system. Unlike traditional learning system that removes workers from their job site during training, sacrificing valuable human resources and pressuring trainers to reduce training time, which can result in sub-optimal changes in performance, e-learning technology enable all learners to readily access lessons all at the same time and when they are needed most. More importantly, traditional learning does not promote teamwork, unlike e-learning that has the capacity to reach higher numbers of learners and encourage team work. Furthermore, in traditional system, training is expensive with little return on investment, while e-learning provides a basis for low-cost follow-up after in-person training to help reinforce new skills, and allows practitioners to take responsibility for facilitating on-going learning (Mohamed and Oso, 2014).

Challenges Preventing E-learning Implementation in Educational System

Researchers have shown that there are generally poor perceptions about acceptance and adoption of e-learning in educational system (Dalton and Gren, 2015). According to the authors the following factors prevent the integration of e-learning into education system delivery.

1) **Lack of vision and objectives for e-learning implementation:** One major set-back to the implementation of e-learning is lack of clearly stated vision and set objectives for the e-learning and processes of implementation of best practice experiences. Failures associated with lack of vision and objectives suggest lack of purpose and proper explanation for the reasons for e-learning adoption.

2) **Lack of policy to provide direction for the implementation of e-learning**: Research has shown that Policies are relevant to the success of any programme implementation. Hence, lack of functional policies to provide direction for the e-learning implementation in Nigeria constitutes a big obstacle. An e-learning policy is needed to provide purpose of progression from building ICT infrastructure to teachers' adoption of e-learning. Policies required must address such factors as training and capacity building for e-learning, support services, infrastructure usage, and deployment of the policies based on a definite timeline.

3) **Inadequate leadership and commitment to e-learning**: The educational management approach to facilitating e-learning implementation shows inadequate leadership and commitment to the e-learning implementation processes, and technical experts are not yet

widely consulted by educational administrators in initiating and deciding on technologies to be adopted.

4) **Poor national infrastructure to support e-learning**: Another influencing barrier to e-learning integration lies on epileptic electricity supplied on the national grid which has never been unstable and unreliable, particularly when power was rationed. The frequency of power outage without warning means that individuals have to resort to generators and other power sources to support any meaningful e-learning integration.

5) **Unclear efficiency gains in doing routine task associated with learning more quickly**:

Evidence shows that both teachers and learners were unsure of the benefits they would gain by doing routine tasks associated with e-learning.

6) **Lack of clarity to inform valuable learning experiences, and improved communication**: There is absolute lack of concrete and meaningful information about e-learning that would be helpful to motivate both teachers and learners acceptance.

7) **Lack of clarity on how to improve the capacity of individualised aspects of the learning experience:** Many express doubts about e-learning's effectiveness to enhance their teaching and learning experiences. The appropriate strategy requires performing a thorough needs assessment to identify the areas that would require interventions. Such assessment will make management's rationale for e-learning strong enough to motivate user adoption.

8) **Culture of teaching and learning**: Traditionally, students are not yet familiar with e-learning technology because of the culture of learning from basic education system. Strategically, this means that the education administrators must provide adequate training for students to enable them adapt to the new teaching method.

9) **Lack of personal orientation towards e-learning**: Meaningful initiative and effort are yet to be employed to develop instructors' competencies for e-learning through workshops, seminars, and conferences which would boost e-learning acceptance and adoption.

10) **Inadequate capacity to support e-learning:** Inadequate numbers of appropriately skilled technical staff is another major setback in the implementation of e-learning into our educational system. It is also reported that there is inadequate user skills and competences needed for e-learning integration.

12) **Inadequate technological and technical infrastructure**: Experience has shown that although many teachers have computers, most of our students had poor access to computers and Internet services. This causes frustration among the students. The findings further showed that the Internet connection is poor, with low bandwidth size, while the network infrastructure could not be relied upon, and the generators are unreliable in supporting power outages (Olele, 2008).

13) **Poor budgeting for technical and technological resources**: Budgets for technical and technological resources have been generally described as inadequate. Experience has shown that adequate funding is required for successful e-learning integration (Christiana, 2012).

Summary and Conclusion

It has been established that an effective combination of various factors provides a clear perspective of the requirements from both private and public school management boards to facilitate a successful e-learning implementation and revamping of educational system. Provision of adequate infrastructure structure in schools is important but not alone in promoting e-learning. Management level policy, clear objectives, strategy, leadership and commitment, adequate funding, provision of skilled technical and technological experts in ICT are also critical for e- learning implementation. Other important requirements for efficient revamping of education, specifically in Nigeria, include understanding of the relative advantage inherent in adopting e-learning, and provision of regular workshops, seminars, conferences and incentives to the instructors. Technical staff also needs training, and adequate resources to support users' motivation in developing innovative attitudes.

Recommendations

The following recommendations are suggested for the educational administrators and management to:

1) Set-up and support an ad-hoc committee responsible for e-learning, with a well-defined institutional vision, mission, and goal for e-learning. The goals should be in the short, medium and long terms.

2) Define and determine e-learning objectives for each strategic level: instructors, pedagogy students, technical staff, and technology, stating the rationale for each strategic level objective, the educational effectiveness and benefits to be derived.

3) Educational management should specify the operational activities, task and sub-task, and required resources for the task at each strategic level, and systems specifications to meet users' needs, and the system requirement for e-learning integration.

4) Determine the training needs that best suit the tasks and sub-tasks for e-learning at each strategic level. Skills and competencies required for each strategic level related directly to e-learning objectives. This must meet both management and users' expectations.

7) Determine the operational processes such as pedagogy and learning approach that would meet e-learning objectives for school curriculums. In addition, management must show leadership interest, strong financial and personal commitments by providing continuous electricity supply.

8) Training in e-learning pedagogy and the modes of delivery should be well explored and structured to prevent direct transfer of the traditional pedagogical approaches currently used. It is recommended that communities of learning among students be developed to ensure authentic learning, since e-learning requires great motivation for the individual learner.

9) Regarding the strategic plans for technological and technical infrastructure, the following recommendations are made: develop partnership with private internet service providers to increase the government bandwidth and speed of Internet access; government should promote private ownership of computers and computer resources to complement these resources provided by government. These will enhance authentic e-learning in country.

10) It is clear that without meaningful and functional policies a successful e-learning implementation is unlikely to be achieved. Hence it is strongly recommended that government and educational administrators and management develop and implement the following policies: policy supporting an e-learning vision, mission, objectives and strategies; policy supporting planning and verification of user needs, resources, and the tasks involved in e-learning implementation; and policy supporting pedagogy and content development.

References

Alfred, L. H. L. (2008). *The questions concerning pedagogy in Technology Integration for Online and Blended Learning*. Paper presented at the Distance Learning and the Internet Conférence

Boere I. and Kruger, M. (2008) *Developmental study towards effective practices in technology-assisted learning Combine report from twelve participating South African Universities:* University of Johannesburg in collaboration with Mark Schofield of Edge Hill University, UK.

Christiana O. N. (2012) *Revisiting Science Education and National Development: Nigerian Situation and the way Forward.* Faculty of Education and Arts Madonna University, Okija, Nigeria.

Clark, D. (2010). *Training and Development Manuals. Why Instruuctional Design.* Retrieved from http://www.nwlink.com/~donclark/hrd/sat1.html

Dalton, K. and Gren, I. (2015). Barriers and strategies on adoption of e-learning in Tanzanian higher learning institutions: Lessons for adopters

George, R. (2011). Fostering generic skills through participatory learning strategies. *International Journal of Fundamental Psychology and Social Sciences, 1(1), 14-16*

Gordon, N. (2004). Integrating ICT in Education. Paper presented at ADEA Sub-Regional Ministerial Meeting on Integration of ICT in West Africa. Issues and Challenges

Hafiz, S.W. (2004). ICT in Teacher Education. Issues and Challenges. Paper presented at ADEA Sub-Regional Ministerial Meeting on Integration of ICT in West Africa

Hardaker, G., & Singh, G. (2011). The adoption and diffusion of eLearning in UK universities: A comparative case study using Giddens's Theory of Structuration. *Campus-Wide Information Systems, 28*(4), 221 – 233

Isaiah, T. A. (2013) E-learning implementation strategies for an ICT-challenged environment case of the University of Ghana, Legon Edith Cowan University 2013

Lin, C.-C. and Lin, R. C.-P. (2011). Re-examining the critical success factors of e-learning from the EU perspective. *International Journal of Management in Education, 5*(1), 44-62.

Mereku, K. (2011). Congruence between the intended, implemented and attained ICT curricula in Sub-Saharan Africa. Paper presented at the eLearning Africa, Mlimanu City Conference Centre, Dar essalaam, Tanzania.

Mohamed J. M. and Oso, W. (2014). Strategic Model Of Implementing E-Learning *International Journal of Scientific and Technology Research Volume 3,* issn 2277-8616 235 ijstr©2014 www.ijstr.org

Okolo. P. N. (2005). The Role of ICT in Teaching and Learning of Mathematics Education. *journal of Mathematics Association of Nigeria*. Vol30, Number 1, Education Series Pp 13-19

Olele,C.N. (2008): Emerging Issue for Computers in schools: A Bridge for Digital Divide Phenomenon in Nigeria. *"Proceeding of 49th Annual Conference of Science Teachers Association of Nigeria".* 195-199.

Onguko, B., and Hennessy, S. (2010).Developing the use of Information and Communication Technology to Enhance Teaching and Learning in East African Schools: Review of the literature (Vol. 1)

Omwenga, E.and Wagacha, P. W. (2004). A model for introducing and implementing e learning for delivery of educational content within the African context. *African Journal of Science and Technology. Science and Engineering Series, 5*(1), 34-46.

Papa Y. D.(2004) Constitution of Sustainable Technical and Pedagogical Expertise in ICT in Education. Paper presented at ADEA Sub-RegionalMinisterial Meeting onIntegration of ICT in West Africa. Issues and Challenges.

Pauline-Roberts, D. M. (2015). Implementation of the E-learning lifecycle model to develop reflection in pre-service teachers. Ascilite 1-5. *International Journal of Education and Development using Information and Communication Technology (IJEDICT),* 2015, Vol. 11, Issue 2, pp. 126-137

Sbalele-Mayisela, T. (2009). *Educational technology and innovation unit: Institutional e-Learning strategy (pp. 1-33)*: Walter Sisulu University

Tan, L. C. (2011*). ICT for higher education case studies from Asia and the Pacific C. Wing (Ed.)* Use of ICT for higher education: An overview of case studeies from he Asia and Pacific region