CHALLENGES OF E-LEARING IN NIGERIAN UNIVERSITY EDUCATION BASED ON THE EXPERIENCE OF DEVELOPED COUNTRIES

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Abstract

This paper present a review of the challenges of e-learning in Nigerian University education based on the experience of four developed countries, UK, Australia, Korea and France. The survey shows that these countries have: (i) vision and action plans for e-learning, (ii) they have good government policies and financial support, (iii) they earmark action programs and set committees with sufficient funds to pursue it goals, (iv) they believe in research as a fundamental part of e-learning strategy, and lastly (v) they embark on awareness, training and motivational programs. The paper pointed out that, for the challenges of Nigerian university education to be reduced to minimum, the Federal Government should improve on educational funding as UNESCO recommended 26% of the annual budget. In addition the government should fulfill her promise on the issue of improving Electricity supply in the country. Furthermore, the university administrators should embark on awareness and training of staff on the use of ICTs, with motivations attached. The Internet is a major driver of ICT in education and bandwidth is a major issue in the deployment of e-learning. Therefore government should make Internet connectivity a priority for higher education to be able to leverage on the promises and opportunities ICTs present.

Keywords

E-learning; ICT; Developed Countries,;Nigerian University; Challenges; Education; Internet.

1. Introduction

The development of telecommunications technology and personal computers provides what is considered to be the general timeline of e-learning. The timeframe of greatest development in this area is thus within the last forty years. The early example of what might be defined as e-learning occurred in 1909, when Robert E. Peary, arctic explorer, radio-telegraphed: "I found the Pole". Combining the characteristics of communication technology with an explicit educational objective, the knowledge that he has found the North Pole, Peary inadvertently produced an e-

learning occurrence for his listeners. However, as electronic devices advances, new products were developed and invented specifically the micro processor and personal computer which change the scenario of learning, culminating into the current e-learning as of today. In addition, the history of e-learning runs parallel with the development of electronic equipment and the use of information and communication technologies (ICT). Globalization is focused on e-learning because e-learning technology has the potential to bring improved learning opportunities to a larger audience than has ever previously been possible. E-learning can play a critical role in preparing a new generation of teachers, as well as upgrading the skills of the existing teaching force to use 21st century tools and pedagogies for learning, e-learning has played an increasing important role in supporting the economic and educational growth of industrial nations [12]. Omofaye[11]suggested that a nation's route to becoming a successful knowledge economy is its ability to also become a learning society. Yang [19], opined that many nations are not only coping with shortages of lecturers, but with the challenges of updating the knowledge and skills of the existing teaching force.

1.1 Definition of E-learning

E-learning refers to the use of ICTs to enhance and support teaching and learning process. E-learning ranges from the way student use e-mail and accessing course work online while following a course on campus to programs offered entirely online. Again e-learning allows for efficient transfer of knowledge anywhere and anytime, regardless of subject matter. It opens up a world of learning unavailable in most corners of the world, while at the same time empowering learners with the information technology awareness and skills crucial to succeed in today global knowledge economy. [5] stated that the term e-learning refers to computer-enhanced training as opposed to the computer-based training of the 1980s. It is usually delivered in a personal computer and includes learning delivered by other communications technologies. According to him, e-learning is an approach to facilitate and enhance learning through both computer and communication technologies. The devices that are used for this purpose include personal computers, CD ROMs, television, personal digital assistants (PDAs), MP3 players and mobile phones. Communication technology enables the use of Internet, e-mail, discussion forums, collaborative software, classroom management software, team learning systems, intranet, extranet, Local Area Network (LAN), Wide Area Network (WAN), audio and videotape, satellite and interactive television lectures, satellite-delivered learning, virtual educational networks, satellite downlinks, computerized diagnostic assessment, competency certification and electronic portfolios[4].

2. E-learning in the Developed Countries

During the last century, we have moved from the industrial age through the information age and now, the knowledge age. The ability to obtain, assimilate, and apply the right knowledge effectively will become a key skill in the next century. Learning is the key to achieving our full potential. In fact, our survival in the 21st century as individual, organizations, and nations will depend upon our capacity to learn and the application of what we have learned to our daily lives. In a survey performed in the UK, it was found that the majority of e-learning occurs at the workplace although nearly a third of e-learners do most of their e-learning in the comfort of their homes [13]. To understand the requirements and the implementation of e-learning, this study

reviewed e-learning implementation in the developed countries that include United Kingdom and France representing the European education while Australia and Korea represent the Asian-Pacific region.

2.1 United Kingdom

In most countries, the development of e-learning by institutions is seen as mainly an issue for the institutions. However, in some countries, national initiatives for e-learning have been set up. This raises the issue of how they relate to the national quality agency for the countries universities. In the UK the Quality Assurance Agency (QAA) has a code of practice, of which one part is collaborative provision and flexible distributive learning (including e-learning) [13].

United Kingdom has a long tradition of innovation in education. Their Open University and distance learning was a model for many other open and distance learning (ODL) institutions. Since the mid nineties UK States have elaborated strategies and action plans to support ICT in education; as examples Ireland proposed *The Education Technology Strategy of Northern Ireland* (1997), the National Grid for Learning initiative was initiated in Scotland; Wales launched an e-learning strategy in 2001 and England councils and agencies were active in promoting innovative actions for better use of ICT at all level of education. Realizing the needs to coordinate and share knowledge among states' initiatives, British Educational Communications and Technology agency (Becta) created in 1998 and redefined in 2003 to support all four UK education departments in their strategic ICT developments, facilitating knowledge transfer among them in order to encourage innovation and improvement, and bring coherence and synergy to UK-wide developments. Moreover, the Department for Education and Skills (DfES), in UK and England are the government body responsible for all levels of education, including vocational education and training. They conducted in 2003, a national consultation aiming to "unify" e-learning strategies and benefit from experiences and collaborations of the many stakeholders. Consequently from this consultation emerged a national e-learning strategy.

2.2 France

Over the past decade, the French government has been pursuing a proactive policy aiming at increasing the use of information and communication technologies (ICT) in primary, secondary and higher education and, more broadly, at making Internet and ICT accessible to all French society.

2.3 Australia

The Australian Government has taken a lead role in creating the appropriate environment for all Australians to have access to, and benefit from, what has become known as the information economy. The government has been dedicated to taking advantage of the opportunities provided by the "*information age to improve all Australian's living standards … and to … enhance our competitiveness in the global information economy*" (National Office for the Information Economy, 2002).

2.4 Korea

According to analysts, government initiatives in Korea have been crucial for the development of ICT and its fast penetration in all the economic sectors and for the promotion of e-learning in particular. The following chart (Fig1.0) illustrates the Korean government's roles and actions in promoting e-learning.

3. E-learning Organizations and Policy Milestones

Table 1 depicted the policy milestones in the developed countries under study. The subsequent section presents indicative figures on government funding to support ICT in education and/or e-learning among countries surveyed.

3.1 United Kingdom E-learning Funding

The review survey associated on the funding of the e-learning project was conducted on UK, Australia, Korea and France. However there is no specific funding data or expenses that can be identified for United Kingdom and France. Nevertheless, DfES in its consulting document *towards a unified e-Learning Strategy* (2003) affirms that the "Government already provides significant sums for e-learning which will increase to around £1 billion (CA$ 2 billion) by 2005-06, and further funds are invested by organizations from their own resources". Available data for Becta and JISC suffice to illustrate the magnitude of UK's investment in education technologies:

i. DfES funding of Becta in 2005-2008 is budgeted to £ 25.6 million (CA$ 51 million);

ii. JISC global expenditures for 2004-2005 were of £64.5 million, (CA$ 131.9 million).

CA$17.1 million was allocated to these consortia to design and produce ODL resources. Audiovisual and Multimedia Innovation Network: this network was set up in 2001 with a budget of 20.6 million Euros (CA$ 29.1 million).

Education.au is funded by the Education Ministries of the States and Territories, Australia. In 2002-2003 Education.au expenses is CA$7million. In 2005-2006 Education.au expenses is CA$20million while EdNA funding amount to CA$670,000 over five years.

4. HEFCE Strategy for E-Learning

The Centre for Excellence in Teaching and Learning (CETL) represent a big national intervention in HE. The CETLs initiatives have two main aims: to reward excellent teaching practice, and to further invest in that practice so that CETLs funding delivers substantial benefits to students, teachers and institutions. Funding of CETLs will total $630 million over five years from 2005-6 to 2009-10. This initiative represents the Higher Education Funding Council for England [5]. In England [8] introduced in its national e-learning strategy the 8 "Measures of Success". For example measure A said: "ICT is commonly accepted into all aspects of the student experience of

higher education, with innovation for enhancement and flexible learning, connecting area of HE with other aspects of life and work".

5. Challenges of E-Learning in Nigerian University Education

Nigerian higher education system currently has 95 universities, 27 Federal universities, 34 state universities and 34 private own universities [8] and about 160 other tertiary institutions Colleges of education, Polytechnics, Monotechnics [17]. Every year, about a million students apply to enroll into these universities but barely 10% of them are enrolled [9].

Folorunso et al [7] and [14] found that mass unawareness, low computer literacy level and cost were identified as critical factors affecting the acceptability of e-learning by students and lecturers of Nigerian universities. Sharma et al [15] points out that e-learning places high demand on learners who have to be more proactive and disciplined than in traditional face-to-face education. Schulmeister [17] states that experience proved that the benefits of e-learning could not be fully taken advantage of, expectations could not be met and that technology often was used to simply reinforce outmoded approaches to learning. Resnick [14] criticizes that even though ICT is applied in education, the approaches to teaching and learning remain largely unchanged. In order to entirely profit from new technologies, educational approaches and concepts on how technology can support them should be fundamentally rethought. Investigations indicate that the formidable challenge facing National Open University of Nigeria (NOUN), is lack of financial support to build the required infrastructure and to produce learning materials for its over 9,000 students registered in the first year [11].

There is therefore non-availability of internet access in some tertiary institutions because of the recurrent cost of bandwidth. Inequality of access to technology is the challenge of digital divide existing among the student of NOUN; thus, some of them are unable to afford computers due to the relative cost to the average income of workers in the country [2], [3]. Further reviews on these challenges are:

(i) Internet connectivity: the cost of accessing the internet in Nigeria is still on the high side. Hence, some students find it a challenge to afford. Aduke [1] suggested that the government should make Internet connectivity a priority for higher education to be able to leverage on the promises and opportunities ICTs present.

(ii) Energy related problems: irregular and frequent interrupted power supply in Nigeria is a perennial problem affecting almost every aspect of the economy, including education. [2] argued that it's been a major setback for technological advancement in the country. Most rural areas in Nigeria are not even connected to the national grid. The consequence of this is that students residing in such areas may find it difficult to use ICT effectively.

(iii) Limited expertise: [2] reported that there are few technical staff at NOUN to maintain the current system. Lack of, or inadequate trained personnel are a challenge to the use of ICT in most Nigerian higher institutions [1].

The internet is a major driver of ICT in education. Bandwidth is a major issue in the deployment of e-learning. Bandwidth refers to the amount of information that can be sent or received at a point on a computer network, the greater the bandwidth, the greater the carrying capacity and speed of transmission. The higher the quality and quantity of audio, video, interaction and processing tasks, the more sophisticated the communications technology required. Bandwidth costs money, so there is a financial imperative to manage the amount of bandwidth used for e-learning, particularly where it is used to support remote and distance users who may not have access to fast data connections. Furthermore, the content and services that can be accessed through internet are dictated by the bandwidth available. Nigerian contributed only approximately 2% among the Internet users worldwide [20].

6. Conclusion

The commitment of the developed countries on e-learning cannot be over emphasized. The choice of the four surveyed countries is not based on their achievements. They are just being used for comparison sake. The survey shows that these countries have some things in common, that is why they are successful.

i. They have the vision and their program action plans for e-learning.

ii. They have the government policies, programs and financial support by substantial public funding.

iii. They have earmarked action program for each year and committees are formed and funded to pursue the expected goals.

iv. They have invested on the Internet, ICT infrastructure and power (Electricity). They rank high among the world Internet users while Nigeria is less than 2 % [20].

v. They embark on research because they believe that research is a fundamental part of E-learning strategy. In addition they embark on training and awareness as an essential component of an e-learning strategy.

What Nigerian University education can learn from the experience of developed countries on e-learning can be summarized into four items. They are funding, electricity, awareness/training and motivation. More fingers are pointing to the Federal Government of Nigeria on these issues. Therefore the government policies and programs of e-learning in Nigerian University education should be financially supported by substantial public funding. On the issue of funding, the Federal Government should take a bold step to yield to the recommendation of the UNESCO which prescribe 26% of the annual budget for education. Already the Federal Government have promised improved electricity supply 2010, let them just fulfill their promise. Individuals that are well to do should continue to support this crusade by donating generously to university education in Nigeria. University administrators on their part should embark on awareness and training of staff on the use of ICTs in teaching and learning with motivation attached. We want to submit

that the challenges of e-learning in Nigerian University education will be reduced to minimum if these steps are taken.

List of Abbreviations

AEN-	***Asian e-learning Network***
AGIMO-	***Australian Government Information Management Office***
BECTA-	***British Educational Communications and Technology Agency***
CA$-	***Canadian Dollars***
CD- ROM-	***Compact Disk Read only Memory***
CETL-	***Central for Excellence in Teaching and Learning***
DSET-	***Department of Education, Science and Training (Australia)***
DfES-	***Department for Education and Skills***
EdNA-	***Education Network Australia***
FEFC-	***Further Education Funding Council for England***
HE-	***Higher Education***
HEFC-	***Higher Education Funding Council for England***
ICT-	***Information and Communication Technologies***
JAMB-	***Joint Admission and Matriculation Board (Nigeria)***
JISC-	***Joint information System Committee***
KADO-	***Korea Agency for Digital Opportunity***
KALIC-	***Korea Advance E-learning Infrastructure Centre***
KELIA-	***Korea E-learning Industry Association***
KERIS-	***Korea Education and Research Information Service***
KIEC-	***Korea Institute of Economic and Commerce***
KRIVET-	***Korea Research Institute for Vocational Education and Training***
LAN-	***Local Area Network***
MCEETYA-	***Ministerial Council on Education, Employment, Training and Youth Affairs (Australia)***
MEHRD-	***Ministry of Education and Human Resource Development (Korea)***
MENESR-	***Ministère de l'Éducation Nationale, de l'Enseignement Supérieur et de la Recherche***
MOCIE-	***Ministry of Commerce, Industry and Energy (Korea)***
MoL -	***Ministry of Labor (Korea)***
MP3-	***A compression format used for music files***
NAEAP-	***Nigeria Association for Educational Administration and Planning***
NUC-	***Nigerian University Council***
ODL-	***Open and Distance Learning***
PDAs-	***Personal Digital Assistants***
QAA-	***Quality Assurance Agency***
SDTICE-	***Sous-direction des technologies de l'information et de la communication dans l'éducation - Sub-Directorate of Information and Communication in Education, MENESR (France)***

UK- ***United Kingdom***
UNESCO- ***United Nations Educational, Scientific, and Cultural Organization***
WAN- ***Wide Area Network***

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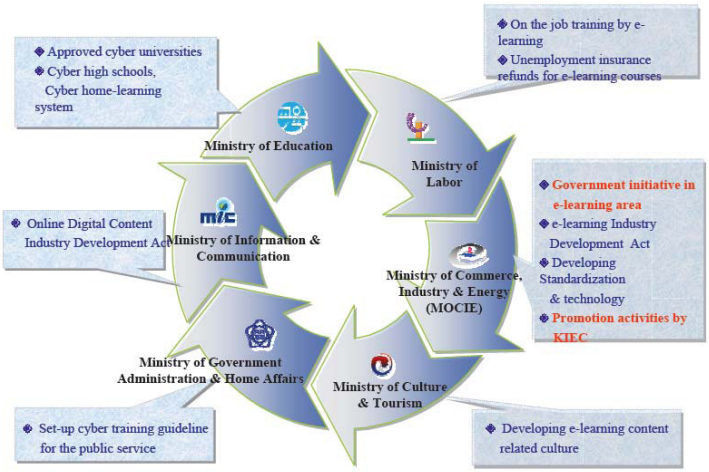

Fig 1.0 KIEC (Korea Institute of Economic Commerce), Korea EL Country Report, AEN 2005

Table 1: Surveyed Key Elements

Key Elements	United Kingdom	Australia	Korea	France
Key Government Ministries and Agencies	Department for Education and Skills (DfES), Ireland, Wales, Scotland, England Governments Education Ministries, Funding Councils (HEFC,FEFC)	Department of education, Science and training (DEST) Ministerial Council on Education, Employment Training and Youth Affairs (MCEETYA) AGIMO-Australian government Information Management Office.	Ministry of commerce, Industry and Energy(MOCIE) Ministry of Education and Human Resources Department(MEHRD) Ministry of Labor (MOL) Ministry of GAHA	Ministere de Education (MENNSR)
Key policy Milestone Document	• 1977-2004: State Policy • 2003: E-learning National Consultation. • 2005: DfES e-Strategy: Harnessing Technology: Transforming learning and children Services	• 1988: A strategic Framework for the information Economy: Identifying priority for action. • 1998: Adelaide Declaration from the state, Territory and commonwealth Minister of education. • 2000: Learning for the knowledge society. An Education and training action plan for the information Economy. • 2004: Australian Strategic Framework for information Economy 2004-2006. Opportunities and challenges for the information Age.	• 1996: e-Korea project and e-campus. 1998: Adapting Education to the information Age. • 2001: Towards Education Reforms and the development of Human Resources. • 2002-2003: MOCIE-The present situation of e-learning Industries and means to facilitate them	• 1997: Plan d'action gouvernnemental Pourune societ de l'information (PAGSI). • 2000: RESO Plan. • 2004-2006: TICE Action Plan
Key Organization responsible for policy Implementation	1998: Becta-British Education communications and Technology Agency: Policy and program advices bring coherence and synergy between stakeholders; evaluate needs and impacts of policy action plans. JISC-Joint information System committee: Centralize and coordinate direction for the development of the infrastructure and activities in line with the e-strategies	Education.au responsible for building national infrastructure to provide shared **online** content and services. EdNA online (Education Network Australia) Government agencies in each sector of education.	KERIS: Korea Education and Research Information Service. KRIVET: Korea Research Institute for Vocational Education and Training. KADO: Korea Agency for Digital Opportunity. KELIA: Korea e-Learning Industry Association. KALIC: Korea Advance E-Learning Infrastructure Centre.	Sub-Directorate of information and communication Technology in Education. (SDTICE), MENESR Delegation aux Usage de l'internet. (DUI-Delegation for the use of internet). Interministerial Committee attached to MENESR.

Source: International e-learning strategies: Canadian Council On Learning, 2006