The Impact of Digital Divide on E-learning in Nigeria

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Abstract.

Purpose: *The purpose of this paper is to examine the impact of digital divide on e-learning in Nigeria.*

Design/Methodology/Approach: *This is an opinion paper that is based on extensive literature review.*

Findings: *The findings from the study revealed that the digital divide reinforced the old socio-economic gap between the rich and the poor, able and disabled individuals and groups within Nigeria. The very gap the country wished to arrogates through it. The findings also revealed that the digital divide exposed Nigerians to the dangers of youth restiveness and instability amongst others.*

Practical Implications: *Unless Nigerian government takes decisive steps to address the problem to digital divide, the socio-economic gap between individuals and groups in the control will continue to widen.*

Originality/Value: *The paper was developed out of the interest of the researchers for the Nigerian government to maximise the benefit of the internet to solve some of the socio-economic problems in Nigeria.*

Keywords*: Digital divide, E-learning; Electronic leering and Nigeria.*

Introduction

Nigeria is a country located at the South Coast of West Africa. The country is bounded in the West by Benin Republic, Niger in the North, Chad and Cameroon in the East and Gulf of Guinea in the South. The United States estimate of the population in 2009 is 154,729,000 distributed as 51.7% rural and 48.3% urban dwellers (Gbenga-Ilori, 2010). Nigeria has abundance natural resources which include natural gas, tin, coal to mention but a few. 33% of its land mass is arable land and the people keep a wide range of livestock from cattle to chicken and its electricity production is 22.5 billion KW.(World Almanac Education Group, 2008).

In terms of information and communication technology access and usage, the World Almanac Education group (2008) observed that in every 1000 people, 69 have access to television sets and 226 have radio sets. Daily Newspaper circulation is 24.4% and 1.7million people have access to telephone lines. Of the United Nations estimated population of 154,729,000, 43,989.000 have access to the internet (CIA World fact book, 2011).

A high level literacy gap exists between rural and urban areas in the country. Obaji (2005) quoted in Ilori (2010) observed that overall literacy rate for urban males was 75% compared with 59% for females while gender disparity was higher in rural areas with 51% for rural males being literate compared to 34% rural females. There is a dearth of literature on the number of student's enrollment in higher institutions of Nigeria between 2006 to date. Available statistics showed that as in 2005, of the total population of 133,767,000, 724, 856 enrolled for university education and 237,708+ enrolled in Universities equivalent. University equivalent refers to polytechnic and colleges of education (National Bureau of Statistics, 2006)

Tertiary education in Nigeria has come a long way since the establishment of Yaba Higher College in 1934. Today, Nigeria has about 80 universities and 178 university equivalents to cater for its teaming population (National Bureau of Statistics, 2006). Access to higher education in Nigeria is restricted to those who are eligible and who can fit into existing places. Access is thus restricted by strong stringent admission requirements and also by the number of institutions available (Okebukola, 1998). As a result most eligible candidates are not able to gain admission into institutions of higher learning when required. Many more were

hindered by the cost of higher education and many others by such other factors as time, location of educational institutions and cultural access to education (Sims, Powell and Vidgen 2008). To address this issue, Nigeria introduced E-learning, that is education based on Information and Communication Technologies. The internet is often seen as a value tool that potentially allows individuals to overcome the constraints of traditional elitist spaces and gain unhindered access to learning (Gulati, 2008). In Nigeria, it was hoped that e-learning can help to address issues of educational equity and social exclusion and open up democratic and accessible educational opportunities. Simple observation shows that the reverse is the case. The expected advantages of e-learning are hindered by a lot of factors that culminated in the citizens not being able to harness the e-learning advantage. Factors that come to be known as digital divide. This work therefore set out to explore the impact of digital divide on e-learning in Nigeria. In doing this, the authors will like to explore the following;

   a. The concept of e-learning
   b. Challenges of e-learning
   c. The concept of digital divide
   d. Causes of digital divide in Nigeria
   e. Impact of digital divide on Nigerian e-learning.
   f. Ways of ameliorating the digital divide in Nigeria.

The Concept of E-Learning

Modern achievements in the field of computer and communication technologies have offered tremendous opportunities for learning by electronic means (Rozina, 2002). The use of new multimedia technologies and the internet in learning is seen as a means to improve accessibility, efficiency and quality of learning by facilitating access to resources and services as well as remote exchanges and collaboration.

Hedge and Haywood (2004) defined e-learning as an innovative approach for delivering electronically mediated well-designed, learner-centered and interactive learning environments to anyone, any place, any time by utilizing the internet and digital technologies in line with instructional designed principles. Simply put, the convergence of the internet, electronic Medias and learning is called E-learning. Modern societies especially, the developed nations uses e-learning to extend educational advantages to communities that where erstwhile excluded from

it due to the triple problem of time, distance and cost. Thus e-learning became a new paradigm for bridging the educational gap within and across societies.

In Nigerian society, the commonest type of e-learning adopted is in form of lecture notes on CD-Rom which can be played as and when the learner desires. No doubt, today, the modern world is undergoing a fundamental transformation as the industrial society of the twentieth century rapidly gives way to the information society of the twenty-first century. This dynamic process promises a fundamental change in all aspects of our lives, including knowledge dissemination, social interaction, business practices, education etc.

It is obvious that the concept of e-learning is considered to be very attractive as a new learning paradigm whose effect will be a positive one to the development of education in developing countries especially Nigeria, but regrettably, with all its potentialities not much effort is taken for its full implementation. The advantages of e-learning must outweigh its disadvantages for its implementation to be worthwhile. Amongst the many positive effects are that it is less expensive to deliver, self-paced, provides consistent content, faster and works anywhere and anytime for the learning. E-learning can improve retention, provide immediate feed-back and allows learners to customize learning materials to meet their individual needs. E-learning when fully implemented in Nigeria educational system will change the concept of digital divide to digital opportunities.

The Challenges of E-Learning

Most countries in Latin America, Middle East, Africa etc and some parts of Europe are designed as developing countries because of their lower rank in the United Nations Development programme index.

Yet it is worth noting that these countries have rich histories and educational traditions (Saheb, 2005). Since the spread of the industrial revolution and the end of World War II, there has been a widening gap in socio-economic systems, living standard and educational economic conditions were not conducive to educational expansion in developing countries. Hence majority of the populace are not literate. The major challenge facing proper implementation of e-learning in Nigerian

educational institutions in general is encapsulated in the concept of digital divide.

The digital divide

The digital divide is a term that emerged in the 21st century due to innovations in information and communication technology. It is used to define inequality in access to and use of telecommunication infrastructure by citizens to solve personal and societal problems. United States Department of Commerce (2000) defined it as the difference in rate of access to computers and the internet or more generally, the gap between information and Communication Technology (ICT)haves and have nots (Sciadas, 2002 &Clacks 2003). OECD (2001) defined it as the gap between individuals, households, businesses and geographical areas at different socio-economic levels with regard to their opportunities to access information and communication technology and to their use of the internet for a variety of purposes.

The unequal access to ICT is determined by social and physical barriers, from never having seen a computer to absence of electricity infrastructure to power a computer. The digital divide exists globally, international and nationally. Globally, many countries which incidentally are geographically located in Europe, North America and parts of Asia are highly industrialized with an edge in modern Science and Technology, stable governments, have more access to the internet than the countries of the South much of which are poor, emerging democracies and have not shown much improvement on most fronts of development (Ogunsola & Okusaga, 2006). Drori (2010) observed that the causes of the global digital divide depend on income or wealth differential, the complex array of economic, political and socio-cultural matters.

At the national level, the digital divide follows the lines of gender, wealth, education, race, minority designation whereas between countries, it follows the lines of national wealth, literacy and democracy.The second phase of the World Summit on the Information Society (WSIS) a United Nations Summit that took place in Tunisia is an attempt to solve the problem of the digital divide. Though efforts are being made to address the problem of digital divide, it still exists and it particularly affects older people, those with lower levels of education, those with lower income and those who live in geographically remote areas where infrastructure coverage is low.

The implications of the digital divide are not limited to whether or not individuals have or do not have access to technology. As the 21st century unfolds, having access and being able to use the new technologies also mean being an integral part of society (Shelly, 2006). People with limited access will be out paced by those who are ahead in the ability to select and process information. Subsequently observed Wong (2009) digital exclusion has become a new form of social exclusion.

Causes of Digital Divide in Nigeria

Nigeria though endeared with enormous natural resources, like all emerging democracies is facing the problem of the digital divide. It has a good share of the causes of digital divide as it affects every other nation as well as other factors that are peculiar to it. Most of the causes of digital divide peculiars to Nigeria are as follows:

a. Bad leadership. Nigeria has been unfortunate on the group of leaders that have mantled the saddle of its leadership for more than half its life since independence. There are always cases of bribery, misappropriation and embezzlement of government funds. As a result, Nigeria, the second highest oil producing country in the world with abundant other natural resources cannot afford broad access to all the latest achievements available for education, to enable new educational technologies and e-learning to be widely used in its institutions of higher learning (Kamba, 2009)

b. Lack of adequate Manpower capacity. Even in situations where the infrastructures are available, Nigeria lacked adequate skilled manpower to manage and organize e-learning. Simple observation in Nigerian Institutions of higher learning shows that the crème of Nigerian academics are computer and internet illiterates as such they could not impact ICT skills.

c. Urban –Rural Disparity. While towns in Nigeria can boast of electricity, only very few rural areas can d o that. Most rural villages in Nigeria have no access to electricity supply. Most ICT equipments are electricity power based and as such cannot function in places

where there is no electricity. Moreover, while internet cafes are growing in number in urban areas, they are almost running out of existence in rural areas due to poor telecommunication and electricity infrastructure (Gulati, 2008).

d. Neglect or lack of interest in the affairs of the disabled members of its society. Nigeria is a country without any policy or law regarding the disabled members of its society. Everything about the disabled is done on charity bases. Many websites including University websites are not designed to be used with adaptive technologies such as audio screen readers and Braille keyboards leaving the visually impaired fully excluded from full participation. Digital equity in education must mean that every student has equal access to technology and the opportunity to be full participants in the digital age (Solomon, Allen and Resta, 2003).

e. Poverty and High rate of technology change. Nigeria, the most populous nation in Africa is battling with self imposed poverty. Most of the resources that would have been used to improve computer and internet use are geared towards poverty reduction efforts. Moreover due to poverty, Nigerian government and its citizens cannot keep pace with the rate of technology change.

f. Poor power supply. Constant electricity supply is one of the drivers on e-learning. Unfortunately, electricity supply has been a major constraint facing Nigeria in the achievement of its developmental goals of which e-learning is one. One of the goals of e-learning is to make learning available to interested individuals 24/7 daily at any place and time most convenient to them. The epileptic power supply has made this dream a mirage (Ogunsola and Okusaga, 2006).

The Impact of the Digital Divide on Nigeria

The impact of the digital divide on Nigeria is enormous. Some of them are as follows:

1. The digital divide reinforced the old socio-economic gap between the rich and the poor, able and disabled individuals and groups within Nigeria.

This is the very gap, the country wished to abrogate through e-learning.

2. Inclusive Society. The digital divide robbed Nigeria of the opportunity of operating an inclusive educational system and society. An inclusive society is a society where every individual has equal chances of participating in all societal discourse irrespective of the persons' social status, wealth, education, handicapped etc. At inception it was hoped that e-learning will help to widen participation in education for people who under the traditional method of education were excluded. Unfortunately this hope was turned into a mirage by the digital divide.

3. Robbed many Nigerians the benefits of participating in the modern world. Education is the key to success in the modern world. A person without education cannot feature effectively in the modern world. Skills, ethics and values acquired through education can lead to responsible citizens. Education librates the mind from the shackles of ignorance, keeps him informed and equips him to face the challenges of the modern world.

4. Exposed Nigeria to the dangers of Youth restiveness and instability. Illiteracy is a sure certificate for unhealthy youth development and misdemeanor. A country with huge number of uneducated youth faces risk of constant youth restiveness and instability. Such a country is a threat to itself and all other nations around it. Daniel (1999) summarizes this when he opined that education for all is viewed as an imperative for world security, as an unconnected population suffering high unemployment leads to instability.

Ways of Bridging the Digital Divide in Nigeria

Nigerian might be able to bridge the digital divide if it can manage to put the following into consideration.

1. *Digital Dividend*: The term digital dividend refers to the radio frequency spectrum that can be freed up as a result of switch over from analogue to digital terrestrial television. Gbenga-Ilori (2010) observed that the digital dividend

spectrum is located at 300MHZ and 3GHz. This spectrum band offers higher transmission capacity and better distance coverage. This means that less infrastructure is required to provide wider mobile coverage, thus communication services can be provided in rural areas at lower cost.

2. *Use of Public Spaces:* To help bridge the urban-rural digital divide, the Nigerian government should make use of every space such as public schools, community centres and more especially the public libraries to serve as primary location for accessing and teaching computer skills for both adults and children (Nkanu & Okon, 2010) Moreover most of the these institutions have the staff and equipments needed for these. The only thing lacking is connectivity and addition of local content to make the training and information accessed relevant to the populace (Osadebe, 2010).

3. *Introduction of Social Security*: In developed economies, social securities are used to cushion the effects of abject poverty. It ensures that the citizens have foods on their tables. This helps to free the mind to think of innovative ventures to undertake and hence contribute meaningfully to development. If introduced in Nigeria, it is expected that it will relieve the rural populace from sustenance agriculture to study and partake in the information age (OECD, 2000).

4. *Salary enhancement*: Enhancement of the salaries of rural information workers well above that of urban workers will go a long way in solving the problem of the digital divide. It will serve as an incentive for people to work in rural areas as well as help to retain skilled workers in the villages. It will also help to check the rate of urban – rural migration.

5. *ICT equipments in rural areas*: The government should endeavour to subsidize the cost of ICT equipments sold in the rural areas or be directly involved in their importation. This will help to cut off the middlemen involved in the importation and distribution of these equipments thereby reducing their cost.

6. *Electricity*: Simple observation has shown that Power Holden Company of Nigeria (PHCN) has failed in its mission of providing steady power supply to Nigerians. Nigerian government therefore should look for alternative power supply to sustain development in rural areas as well as to help bridge the digital divide between rural and urban areas in Nigeria.

Conclusion

With the advent of Information and Communication Technology, e-learning becomes a crucial issue in reaching more people and reaching them faster too, in teaching and learning. However, there is inequality of access to these information technologies. There are also differences in opportunities available to people who have access to modern information –the digital divide. Insight into the challenges of e-learning in Nigeria shows that lack of e-teachers, e-facilities and constant power supply seem to be outstanding challenges

The paper also identifies causes of digital divide and their impact on e-learning in Nigeria. Education and income level apper to be the dominant factors of digital divide. The higher the level of education, the more likely individuals are to value and benefit from access to Information and Communication Technologies. The lower the income of individuals the more difficult it is for one to afford ICT equipment.

The paper concludes that the government has a lot to do to ameliorate the suffering of the masses. For instance, the government can ensure internet connectivity and constant power supply in all schools. These measures are in accord with the Nigerian philosophy of education, the provision of equal access to educational opportunities for all citizen of the country at the primary, secondary and tertiary levels both inside and outside the formal school system.

Recommendations

1. *ICT Policy.* Nigeria should introduce an ICT policy making computer education compulsory at primary and secondary school levels. This will help to ensure that enough number of Nigerians took up computer engineering and management in higher education and in due time, provide the needed manpower to ameliorate the problem of skilled

labour needed to bridge the urban-rural digital divide.

2. ***Policy on disability***. Nigerian government should introduce a comprehensive policy on the state of its disabled citizens as regards access to digital information. The government should ensure that every Nigerian website is assistive technology compliant. Assistive technologies are technologies that are used by the disabled to access information on both digital and analogue format.

3. There should be on-line connectivity of libraries in the Country.

4. National Universities Commission (NUC), State Education Commission and Primary School board should ensure minimum standards in the provision of ICT materials in all levels of education.

5. Since e-education in the personalized western form requires ownership of expensive computing hardware and access to telecommunication system, perhaps the only source of access is through either public provision or by community arrangement or corporate sponsorship in order to reduce digital divide in e-learning.

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