# PROSPECTS AND CHALLENGES OF E-LEARNING IN NIGERIA

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**Abstract**
*This paper gave an insight into what e-learning is and that it has been around for decades.  Immediately after the invention of computer in 1960s, the educational potentials of computer were noted by Psychologists and Educationists.  The paper looked at the various definitions of e-learning by different authorities and traced the history of Information Communication Technology (ICT) in Nigeria to when telecommunication was introduced in 1886 with a cable connection between Lagos and the colonial office in London to the present post modern era of the intervention of the GSM.  The educational implications of the new development especially as they relate to e-learning were discussed.  Prior to this time, mobile phones were seen as exclusive rights of the privileged until the commencement of liberalization of the industry which was used to break the monopoly of the Nigerian Telecommunication (NITEL).*
*The prospects of e-learning in Nigeria were also discussed while bandwidth, power issue, cost of pc and internet service, government attitude and exposure to online pedagogical issue are some of the challenges of e-learning in Nigeria.*

**Key words:**     e-learning, Computer, Information Communication Technology, Internet, Private Service Provider.

## Introduction

e-learning has been around for decades, it has seen the exponential growth in the last years in the developed world mainly because of the growth of the internet (Namahn, 2009).  Soon after the invention of computers in the 1960's, psychologists, and educators noted the educational potential of the computers.  The early computer-based instruction development focused on automating relatively simple notion of learning and instruction.  However, the early group of computer-based instruction technologists split into two groups:  the

first group is known as Applied Scientists/Engineers while the second group is known as Advanced Researchers (Laurillard, 2002).

The Applied Scientists/Engineers attention was on automating the simple notion of learning and instruction. During the decades, this group continued to develop and refine their tools to include the complex instructional constructs.

However, throughout the development phases, costs were a major obstacle to the widespread use of computer-based instruction.

Initially, the migration and adaptation of computer-based instruction, based on mainframes to minicomputer, workstations and personal computers, absorbed much of the energy of researchers and developers.

With each succeeding technological innovation, new capabilities and features became available to enhance the technological supported learning process. As the tools mature and personal computer proliferates, costs were dramatically reduced. Recent instructional content incorporates multimedia capabilities and sophisticated authoring features. These computer-based instructions are characterized by tightly bound instructional content and logic.

The Advance Researchers focused on the potential of information-structure-oriented approaches to represent human cognition and learning. Rooted in the early artificial intelligence studies of how we learn and master skills, this approach led to the development of Intelligence Tutoring Systems (ITS).

The functionalities of ITS are distinct from the more conventional approaches. The functionalities require ITS to generate instruction in real time, on demand as required by the individual learners. Furthermore, ITS must support dialogue or discussion between the technology and the user. However, several factors also hindered the development of ITS technologies. The science of human cognition was relatively immature, and the complex modeling and rule-based system require considerable computing power. The ITS systems are characterized by the tendency to separate control logic from instruction content.

The world is moving at an unimaginable speed in the areas of information use and dissemination.

The most vibrant sector of the national economy is the Information Communication Technology (ICT) industry and the educational sector. There is no nation that does not pay a price for technological development. Science and Technology is the wheel on which the tyre of technology development rotates. The science and technology sector in general and ICT in particular represent areas that must be addressed for sustainable technological growth.

**Meaning of e-Learning**

e-learning has been defined in many ways by many authors. To Tom-Kelly (2004), e-learning is about information, communication, education and training. Regardless of how learners/trainers categorize training and education, they only wants the skills and knowledge to do a better job or to answer the next question from a customer. So also in the opinion of Rave and Layte (2006), e-learning provides the potential to provide the right information to the right people at the right time and places using the right medium. However, to Brandon (2004), e-learning is any form of instruction that is delivered electronically, in part or wholly via a Web browser, through the internet or an intranet, or through multimedia platforms such as CD-ROM or DVD. Bradon argues that, as the technology improves, e-learning also improves. It has been identified primarily with using the web or an intranet's web.

Rosenberg (2006) defined e-learning as the use of internet technologies to deliver a broad array of solutions that enhance knowledge and performance. Rosenberg claims that e-learning is based on the following criteria:

* e-learning is net-worked, instant updating, storage and retrieval, distribution and sharing information is therefore possible;

* It is delivered to the end user via a computer using standard internet technologies, and

* It focuses on the broadest view of learning: learning solutions going beyond the traditional paradigms of training.

E-learning is defined for our purpose as the use of any of the new technologies or applications in the service of learning or learner support. It is all about learning that occurs at the computer. Computer learning means method of acquisition knowledge through online with the use of internet or through offline with the use of CD-ROM. The

online method requires the use of browsers such as Internet Explorer or Netscape Navigator.  It can be in form of Audio, Visual, and Audio/Visual.  It is important because e-learning can make a significant difference: to how learners learn, how quickly they master a skill, how easy it is to study; and, equally important, how much they enjoy learning. Such a complex set of technologies will make different kinds of impact on the experience of learning.

*cultural* – students are comfortable with e-learning methods, as they are similar to the forms of information search and communications methods they use in other parts of their lives .

*intellectual* – interactive technology offers a new mode of engagement with ideas via both material and social interactivity online.

*social* - the reduction in social difference afforded by online networking fits with the idea that students should take greater responsibility for their own learning.

*practical* – e-learning offers the ability to manage quality at scale and share resources across networks; its greater flexibility of provision in time and place makes it good for widening participation.

There is also a financial impact. Networks and access to online materials offer an alternative to place-based education which reduces the requirement for expensive buildings, and the costs of delivery of distance learning materials. However, learners still need people support, so the expected financial gains are usually overwhelmed by the investment costs of a new system and the cost of learning how to do it. We cannot yet build the case for e-learning on cost reduction arguments – we are better placed to argue for investment to improve value than to save costs.

**History of ICT in Nigeria**
The advent of Internet and mobile telecommunication has imparted positively in the way people live, work and interact worldwide in general and Nigeria in particular.  Although, communication is as old as the world itself, but very few has been experienced in the area of human endeavour until technology changes everything.  The need to trace the advent of ICT in Nigeria becomes imperative because ICT is a drive for e-learning without which it cannot be possible.

The development of ICT could be traced back to the time when telecommunications came to Nigeria in 1886.  This was a time when a

cable connection was established between Lagos and the colonial office in London. By 1893, government offices in Lagos were provided with telephone service, which was later extended to Ilorin and Jebba in the hinterland. A slow but steady process of development in the years that followed led to the gradual formation of the nucleus of a national telecommunications.  There are less than 30,000 and 1,500 telephone and telex lines in Nigeria prior to independence, but shortly after independence in the 60s, the telephone and telex lines increased to 90,000 and 2,000 consecutively.  The number of telephone line moved to 700,000 in the late 1990s, though only 400,000 was in use as at then.

The mobile telephone sector, started with just 10,000 lines in 1991, this was upgraded to about 20,000 in 1994.  The commencement of Global System for Mobile services (GSM) in Nigeria marked the beginning explosion in telephone lines and uses.  In 2004, the telephone lines increased geometrically to 4.2 million.  So also the number of Internet Service Providers (ISP) increased from 11 in 2000 to almost 30 in 2004.

While the number of internet users increased from 100,000 to more than 500,000 in 2004 (Olaniyi, 2006).

The use of mobile phones in Nigeria was seen as a symbol of status and achievement initially but the evolution of GSM changed that orientation.  In the 1990s, an average Nigerian hardly dreams of owning a landline telephone let alone a mobile one.  All these were strictly exclusive rights of the rich. Access to basic telephone services was hindered by high cost of acquisition and bureaucratic bottleneck created by the then service provider, i.e. Nigeria Telecommunications Limited (NITEL).  As at then, Internet facilities were not known to many Nigerians, they were only used by NGOs, multinational and very few, highly placed individuals who at one time or the other exposed to it at international conferences. The 1990s witnessed a change in the telecommunication and information sector. This was when Government started the liberalization policy of the telecom industry. Private companies were giving licences to provide commercial telephone services. These companies complemented the government owned service provider, i.e. NITEL. In spite of these achievements, the services rendered by the private service provider (MTN, ECONET, GLO, etc.) were very costly. However, it has some underline advantage over the government owned, at least in the ease of acquisitions.  This was when

the monopoly of government owned telecommunications industry was broken in Nigeria.  Immediately after which the provision and usage of Internet services grew remarkable, so also as more ISPs were licensed within this period. This led to drastic fall in prices, with increased subscription and usage. Nevertheless, the spread of services offered by the private service provider was highly limited, as most of them concentrated in the big cities where they think they can make huge profit for their sustainability.  Going by this development, Nigeria still suffered a low tele-density, which averages around 0.68 in sub-Saharan Africa as at1996, with 70% of the phone lines available in the cities.

The liberalization policy pursued by the federal government was heralded with the licensing of private companies to provide GSM services. Mtel (NITEL), Econet (Vmobile) and MTN were licensed. After the fourth operator, Communication Investment Limited (CIL) had its license revoked on grounds of inability to pay up the prescribed license fee, before the deadline. However, the fourth licence was later reserved for the second national operator, of which Globacom Nigeria won the bid.  Internet sector was not left out. As more companies were licensed to offer internet services in various towns and cities in the country, many were empowered to provide VSAT solution and other telecom value added services.

As at August, 2001 when the private service providers came into the telecommunications business in Nigeria, there were only 300,000 phone lines; since then, the industry has experienced an exponential growth in terms of quality, services and volume.  As at 2008, there are over 10 million telephone lines subscribed for by Nigerians from the various private service providers in the country; this is above the industry's average index and above the recommended ITU standard of 1 telephone line per 100 persons.  At the same time, improved access to the Internet was recorded. With less than 11 ISPs in 2000, to more than 50 ISPs in 2004, more people got connected to the information super-highway, through broadband VSAT connection see. These service providers provided the much-needed access to individuals, organizations and public access point (internet cafes). It will be difficult to estimate the number of Internet users in the country, as many Nigerians access the net through public access point.  Improved Internet diffusion has been achieved, due to increased awareness; access, skills, technical manpower and gradual fall in charges for access,

with cafés providing cheaper alternatives to home-based connection. It is also interesting to note that the licensing of more ISP brought stiff competition to the market where companies with better technology and cheaper access have greater share of the market.

From Dial-up connection, through wireless access, to the ubiquitous VSAT connection, Internet access has grown astronomically reducing the over-dependency on telephone for dial-ups. More remote areas have also been linked too to the world's largest network. Satellite options have provided access to the hitherto unsaved areas.

And Internet cafes have similarly migrated from dial-up connection to wireless and VSAT connection. So much improvement has also been seen in the field of telephony. With the recent licensing of more fixed wireless operators (some of which have started commercial service), basic telephone and Internet services are now been provided in more towns and villages. Cheaper and more efficient services are now in the offer. Call rates has also dropped reasonable, especially with the introduction of Voice Over Internet Protocol (VOIP) and review of interconnectivity rate among operators by NCC. More people are also been empowered with the ability to communicate within and outside the country. The use of VOIP has benefited the average phone user, since routing a call through the Internet attracts less charge unlike the old Public Telephone Switch Network (PSTN).

Remote villages, which depended solely on satellite phone, are now covered by mobile network leading to cheaper call rates in those areas.

Inspite of all these enviable achievements, many still see communication as a jamboree and not a necessity. They wonder why they should spend money on communication where there is stomach to feed, body to cloth and heads to shelter. While many have been restrained by the above factors, the spirit of technophobia has kept some aback. This feeling of dislike for technology has led to lower patronage for technology products and services. And if this is not well addressed, it may cause a limitation to the expected growth in our information society.

**The Prospects of e-Learning in Nigeria:**
**Reduction/Elimination of Costs for Printing Lecture Materials**
With e-learning in place, there will be no need for expending huge amount on the printing of lecture materials or start looking for contractor to bid for the printing jobs which may not be deliver on time as a result of unexplainable reason. The materials would have been uploaded for the students to access at their own convenience anywhere as it is now the practice in the west. The amount expended on the printing of lecture materials can therefore be concentrated on another project in the institution.

**Encourages Collaborative Learning**
All collaborative learning theories contend that human interaction is vital ingredient to learning. Consideration of this is particularly crucial when designing e-learning, realizing the potential for the medium to isolate learners. With well-delivered synchronous distance education and technology like message boards, charts, e-mail, and tele-conferencing, this potential drawback is reduced. In times when small instructor-led classes tend to be the exception, electronic learning solutions can offer more collaboration and interaction with experts and peers as well as higher success rate than the live alternative. Teaching and communication techniques which create an interactive online environment include case studies, story-telling, demonstrations, role–play, simulation, discussion groups, project teams, chart rooms, etc.

**Reduction in Taking Permission from Work**
It avails the learners the opportunities of reduction in time employees are away from their work place to study because the learning time has reduced. Learners can learn on their own without being away from the work, they have access to learn at their convenience anywhere anytime.

**Platform for Advertisement**
Most advertisements by the business and educational organizations in Nigeria are done only through the newspapers, radio and television. This is not the practice in the civilized world. This method consumes so much and deprives those who could compete favourably for the job in other parts of the world access to such information.  E-learning platform apart from being economical, will also be accessible all over the world thereby giving all interested applicants fair opportunity.  In addition, as a result of increase in the number of candidates applying for space in Nigerian educational institutions, almost all of them now place their application forms on the web. Even the examination bodies in Nigeria as a result of increase in the number of applicants equally sold their application forms on-line, and this reduces the level of corruption and ensures efficiency in their dealings.

**Possible Exploitation of Individual Differences**
The flexibility with time and place in the use of e-learning materials can lead to positive exploitation of individual differences with learning. Multiple Choice Questions are used on e-learning platforms for easy and regular assessment of large groups of students.  Conventional methods of assessment can complement these objective tests. TRUE/FALSE IS AN MCQ

**Alternative to Conventional Learning Mode**
e-learning could serve the purpose of being utilized as an alternative to conventional mode of instruction.  In some cases, it could also be used to either supplement or complement the quantity of content in conventional and even distance learning systems.  There has been greater interest by the conventional and distance learning providers in the integration of e-learning into their activities.  Course content though in a form of asynchronous model is very common among different institutions in Nigeria.  Although, this has its limitations, but it is considered a good development in the adoption of e-learning for instructional purposes, especially at the tertiary education level.

**Learners Can Determine their Learning Speed**

With the use of e-learning, learners can determine his/her learning speed as the materials can be accessed by the learners anywhere anytime at convenience.

**Challenges Facing e-Learning in Nigeria**

**Information Communication Technology (ICT) and Power Challenges**

All over the world, best practices have shown that e-learning runs most effectively on ICTs. This has become a problem to Nigeria in many ways such as:

**Bandwidth**

In Nigeria, improved internet diffusion has been achieved as a result of increased awareness, skills and technical manpower due to fall in the charges for access; cafes are providing cheaper alternatives to home based connections. For efficiency, the country needs a functional Communication Satellite where all the internet facilities will be housed for uninterrupted regular service. This will allow for high volume of networking traffic expected in the country. As at now, the country did not have a functional Satellite of her own to take care of the heavy traffic on the net on regular basis. The country depended on other countries, Satellite not only at a very high cost but also at an unsatisfactory performance. The resultant effect of this is that there is a very small bandwidth available for use, and this lead to delay and time wastage whenever there is need to be on the net.

**Power**

There is no gainsaying that internet and computer-related equipment run on power, i.e. electricity, and irregular electricity supply has been a major problem that has defiled solutions in Nigeria. Most of the equipment either the government or the private individuals is run on generator with high cost of procuring, fueling and maintenance, this is eating too much into the meager income of average citizens who are just managing with their income to survive.

**High Cost of Computer and Internet Service**

Nigeria is one of the countries where the cost of computer and internet facilities is very high compared to the income. This may not be a serious problem to the country but to the citizens who need personal computer and internet facility to access information at their convenience.  They are deprived of this benefit because they do not have enough resources to procure computer of their own; and if they need any information from the net,  it is through the public cyber cafes where they are made to pay heavily for the service.  Those that are able to acquire personal computers and internet paid for it through their nose as the acquisition and maintenance cost remains on the high side for Nigerians.

**Attitude of the Government**

e-learning is a form of modernization of teaching and learning in communication. The attitude of the government to the provision of funds to improve and modernize teaching and learning has not been encouraging. In fact, government has been consistently cutting budgets for HEIs and encouraging institutions to seek private partnerships.

**Lack of Exposure to Online Pedagogy Training**

There are five factors that are critical in ensuring e-learning success, the factors include: administrative leadership, continuous programme monitoring, course development, professional development support for academic staff of higher institutions, and evaluation results.  Nigerian institutions seem not to have demonstrated enough desire to improve the e-readiness and to facilitate innovative use of technology in higher education curriculum.   The academic staff in higher institutions in Nigeria are not exposed to online pedagogy training which involves becoming aware of the different learning strategies and how, or to whom, and when to apply these strategies.

**Recommendation**

Based on the above, the following are recommended:

- The current educational reforms going on should aim at given e-learning a place in the educational policy of Nigeria;
- Building a community of practice among Nigerian higher institutions,  policy makers, administrators, and academics

to encourage shared human and material resources is highly desirable;

- Exposing Nigerian higher institutions to what is possible with educational technologies and exploring areas of collaboration and partnerships;
- Supporting capacity building in the use of technology for teaching and learning through training;
- Increase the use of technology for teaching and learning in Nigerian schools to a system-wide teaching and learning initiative;
- The country should work towards having an effective functional personal Satellite to solve the bandwidth problem and cost reduction.
- Establishment of student resource centre and campus wide wireless connectivity;
- Establishment of  national ICT awareness machineries;
- Provision of alternative power supply; and
- Creation of virtual fora and community-based IT facilities.

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