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Application of E-Learning in Teaching and Learning at Various Levels of Education in Nigeria

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Abstract
This study is on application of e-learning at various levels of education in Nigeria. E-learning comprises all educational activities that are carried out by individuals or groups working online or offline and synchronously where all the participants engage in exchange of ideas and information at the same time. E-learning refers to the educational process that makes use of ICT to enhance teaching and learning activities within and outside the classroom. It involves all forms of electronic assisted techniques used teaching and learning exercises. E-learning is therefore a medium of sharing educational information and knowledge through the use of internet and other communication gadgets system. Imperatively, this study discusses e-learning, techniques, adoption of e-learning in schools, government support of ICT in education sector, factors influencing adoption and practice of e-learning personal characteristics, ICT competence, lack of relevant software among others. This study critically examined the concepts revealed in the study. It was based on the articulated ideas that recommendations and conclusion were made.

Keywords: Application, e-learning, teaching, learning and education

1. Introduction

E-learning is the delivering of a learning program by electronic means. It includes web-based learning, virtual classroom, digital collaboration and delivery of content through internet. It can be combined with face to face learning with a teacher in blended learning. E-learning is also a leaning that utilizes electronic technologies to access educational curriculum outside of a traditional classroom. In most cases, it refers to a course, program or degree delivered completely online. E-learning service is a website which teaches and helps students improve in certain subjects such as English Language, mathematics and other science subjects like physics, chemistry, Biology, Health Education etc. This is used normally by schools to let students learn from home and complete online home works. Website owners who operate good online educational services may charge schools to use these websites. However, many websites such as Bite-size, runs by the BBC are open to the public.

E-learning is also an external form of classroom teaching and learning in secondary schools where by learning either online or offline is facilitated by the use of computer, telecommunication devices, networks and storage capacity. On top of its easy delivery of information and interactive nature, it is imperative to know that the main benefit behind using E- learning instead of the traditional way of teaching in secondary schools is that learners develop communication as well as personal skills such as autonomy, analytical perception, abstraction and others (Pargham, Saeed and Mcheik, 2013). Over the years, information and communication Technology (ICT) has grown to become an important driver of E-learning and digitalization.

However, in [his technological age, a functional educational system enabled by information and communication technology applying E- learning would be a veritable and indispensible tool for improving and enhancing good performance of English students and the overall standard of an educational system. That is to say, integration of information and communication technology (ICT) into the educational system and management with particular reference of applying E-learning as instructional delivery media is the current craze in the Nigerian Education sector and indeed all over the world.

The paradigm shift from the traditional educational scheme to. ICT based teaching and learning in secondary schools is rapidly becoming one of the most widely discussed issues in the contemporary education policies (Theorer, 2000).

According to Gruff, Howells, and Grammar (2012), most experts in the educational industry agreed that, property managed and used information and communication technology holds great promise to the improvement of teaching and learning in the secondary schools. This is mostly achieved via audio, text, multicolor images, graphics, motions, and others. ICT gives ample and exceptional opportunities to students in secondary schools to develop capabilities for high quality of learning and has increased innovative abilities (Rangsway, and couples 2006). It offers some powerful tools for the improvement of the existing traditional learning environment and systems or structure without necessarily altering the curriculum element.

Globally, the essence of ICT/E-learning in teaching-learning activities had been recognized. There has been continued strong desire to equip schools with computer facilities and qualified personnel in both the developed and yet to develop countries of the world. Nations have identified the need for investing and integrating 1CT in the implementation of the curriculum in order to faster/improve teaching and learning subjects especially English Language in secondary schools and overall standard of education. In realization of the huge potentials of E-leaning in education, government had heavily invested in developing their respective ICT in education plans and bring various ICT equipment/resources into school (UNESCO, 2008) within 2008-2009, the United Kingdom government spent over 2.5 billion dollars on educational ICT (NUT, 2008). A similar case has been reported in united states of America which expenditure K-12 school and higher education institutions was $4.7 billon respectively in 2009 (NUT,2010) and in New Zealand, the government spend over $410 million every year in school ICT infrastructure (Johnson Clevert and Raggert, 2009).

In Nigeria, precisely in Ikwo local government area, the adoption of E-leaning in the educational system and with particular reference to its application in secondary school has been sluggish, crawling, dull and stagnant, or in fact near to nothing. Therefore, in Ikwo Local Government Area as a case-study, adaption of E-leaning has not been visible in secondary school educational system as teachers and school administrators still engage heavily in traditional method of managing and teaching in the classroom. Thus, the application of E-leaning in teaching English language in Ikwo Local Government Area, Ebonyi State has not attained its stand as the government and non-governmental agencies have not invested much in the area of E-learning in secondary schools which however has led to low academic success of the students.

According to Culbabr (2007), huge educational investments in this regard have produced little evidence of E-learning adoption and its uses in teaching and learning in secondary schools. This is in spite of the immense potentials of information and communication technology in education.

Concept of E-learning

E-learning comprises all educational activities that are carried out by individuals or groups, working online or off-line and synchronously where all the participants engage in exchange of ideas and information at the same time. This is also a medium of communication where individuals or groups engage in diachronic activities which will result in exchanging of ideas and information without depending on other participants through networked or standalone computer and other electronic devices.

Fundamentally, E-learning refers to the educational process that utilizes ICT to mediate synchronously as well as in learning and teaching activities (Som, 2006). E-learning involves all forms of electronic assisted techniques used in teaching and learning activities. The information and communication technology or system of learning whether networked or not, serves as a specific media to implement the learning process (Tavanagerian, Leyphold, Nolting and Roser, 204). Therefore, in this context, E-leaming is essentially the computer and network that enable transferring of skills and knowledge.

Moreover, E-learning is a medium of sharing educational information and knowledge through the use of internet or other communication system. In the course of applying E-learning in teaching-learning activities in secondary schools, the following can be easily seen as the devises as well as the means of its implementation delivery.

Techniques:

- Computer based learning (CBL)
- Computer based training (CBT)
- Computer supported collaborative learning (CSCL)

The above electronic sites programmes all refer to intentional or deliberate use of networked information and communication technology (ICT) in teaching-learning. E-learning mod of instruction is also normally described as online learning, virtual learning, deliberated learning, networked learning, and web-based learning (Ugwuanyi, 2012).

Adoption of e-learning in secondary schools

Adoption of E-learning as a mode of instruction in educational institutions and with particular reference to secondary schools would be of immense influence and assistance in the desire and efforts towards the improvement of the standard of Nigerian Education.

The importance of information and communication technology in educational sector precisely in Secondary Schools is a quite evidence of the impacts created by E-learning in education respectively; though chalkboard, textbooks, radio/television and films have been used for educational purposes over years, yet they had reluctant and dulling impact in improving educational system. Unlike computer system, television and films impact only on the audiovisual faculties of users; while the computer is capable of activating the senses of sight, hearing and touch of the users. ICT has the capacity to provide higher interactive potentials and enable users to develop their individual intelligence and creative abilities (Groff, 2009).

The main purpose of ICT in the development of human mental resources is to allow people to successfully apply the exiting knowledge arid produce new knowledge (Shavinina, 2001). E-learning as a mode of instructional delivery will naturally enhance the production of a high-tech work force with strong background in sciences, Engineering and information technology. This in turn will be of immense economic benefit.

Government Support of ICT Adoption and Practice in Education

According to Adomi (2010), there are developments in the Nigerian education sector which indicate some levels of ICT application in the secondary schools. The federal government of Nigeria, in the national policy on Education recognizes the prominent role of ICT in the modern world and has integrated ICT into Education, though, partially. To actualize this goal, the document states that, government will provide basic infrastructure and training at the primary school level. At the junior secondary school, computer education has been made a prevocational elective and a vocational elective at the senior secondary school, it is also the intention of government to provide necessary infrastructure and training for the utilization of ICT in the secondary school system.

Adomi (2010) submits that in 1988, a similar policy was enacted. The plan was to establish pilot schools and introduce computer studies first to all the secondary schools and then to primary schools. However, it was sad to see that the project did not take off beyond the distribution and installation of personal computers. Adomi (2010) further notes that me federal ministry of education launched an ICT-Driven project known as "School Net" this was indeed to or intended to equip all schools in Nigeria with computers and communication technologies. In June, 2003 at the African summit of world economic forum held in Durban, South Africa; the new partnership for African development (NEPAD) launched the e-schools initiative which was intended to equip all African's high schools with ICT equipment including computers, scanners, digital cameras, radio and television sets; phones and fax machine, communication equipments and copies, among others. The initiative was also meant to connect African students to the internet.

In Nigeria, like other African countries, federal government had also commissioned a mobile internet unit (MIU) operated by the Nigeria National Information Technology Development Agency (NNITDA). The MIU is a locally made bus that was converted into a mobile training and cyber centre. Its interior has ten workstations, all networked and connected to the internet. The MIU is also equipped with a 1.2m dish mourned on the roof of the bus. It is also equipped with a small electric generator to ensure regular electric supply. Ajayi (2003) [7] points out that the MIU takes the internet to various primary and high schools. In a bid to ensure ICT applications in schools, Agyeman (2007) notes that the country's energy problem made the government to embrace US $100 xo laptop computer project for Nigeria's 24 million public primary school children. The government ordered one million of these laptops which can be cranked and do not need external power supply for the primary school children. The laptop has in-built wireless networking which uses a 512MB flash memory without a hard disk and has two USB ports to which more memories or devices could be attached. It has a new user interface known as, 'sugar' and comes with a web browser and a web processor. With the support of the federal government ministries, some net were given to few school which enabled them to tackle challenges facing ICT application in Nigeria. School net creates learning opportunity for communities of educators and learners to use ICT to enhance education by implement, supporting and coordination; provides and supports lower-cost, scalable technology solutions and internet for schools; and provides support mechanism for school for technical infrastructure and connectivity (Agyman, 2007).

Agyeman (2007) submits that Zinox in collaboration with Microsoft was set to revolutionize 1CT usage in education from the primary to the university level. Zinox's strategy is targeted at students, lecturers and the institutions themselves. The company provides the computers at highly discounted prices and hoped on government support to achieve 75% 1CT application in Nigerian schools.

Factors that Influence Adoption and Practice of E-Learning as Instructional Media

Good number of factors influenced the use of E-learning as a mode of instructional delivery in Nigeria today. Those factors as the case may be would be either positive factor or negative factor. Vehemently, they include: persona! characteristics, cost, infrastructure, skill, relevant software, access to the internet and so on. On a general note, several researchers have identified factors that influence the adoption and integration of ICT into educational system in Nigeria. E-learning as an ICT based model shares in those factors. Rogers (2003) identified five technological characteristics or attributes that influence the decision to adopt an innovation.

According to Balanskat, Blamire and Kefell (2007), some factors were identified by them; they have it as teacher-level, school level and system-level. Teachers' integration of ICT into teaching is also influenced by organizational factors, attitudes towards technology and other factors (Chen, 2008). Sherry and Gibson (2002) claimed that technological, individual, organizational and instructional, factors should be considered. When examining ICT adoption and integration. Mey Land (2011), noted that factors such as institutional support as well as micro factors such as teacher capability influences the use of online learning in high in Sydney. Specifically, those factors are discussed in detail below:

Personal Characteristics/Attitudes

Personal characteristics, educational level, age, gender, education experience, knowledge of using computer for educational purposes and attitude towards computer can influence the adoption of the technology (Schiller, 2003). Teachers are implored to adopt and integrate ICT into teaching and learning activities but teacher's preparedness to integrate ICT into teaching determines the effectiveness of the technology and not by its sheer existence in the classroom (Jone, 2001). The attitudes of teachers towards technology greatly influence- their adoption and integration of computer into their teaching. In teaching English language and generally all other subjects in secondary schools using E-learning anxiety, lack of confidence, competence and fear often relegate it use (ICT) to conventional learning mechanisms. Therefore, a better understanding of personal characteristics that influence teachers' adoption and integration of ICT into teaching is relevant and cannot be over emphasized.

According to Hew and Brush (2007), among the factors that influence successful integration of ICT into teaching activities, teachers' attitudes and belief toward technology are the primordial factor that determine its (ICT) success (Keengwe and Onchwari, 2008). That is to say, if teachers' attitudes are positive towards the use of educational technology, then they can easily provide useful insight about the adoption and integration of ICT into teaching and learning processes.

It is believed that if teachers perceived technology

programmes as neither fulfilling their needs nor their students' needs, it is likely that they will not integrate the technology into their teaching and learning.

ICT Competence

Computer competence is defined as being able to handle a wide range of varying computer applications for various purposes (Van Braak, Tondeur and Valck, 2004). In accordance with Berner (2003; as cited in Bordbar (2010), teacher's competence in computer is a major predictor of integrating ICT in teaching. Evidence suggest that majority of teachers towards the integration of ICT into teaching and learning process lack knowledge and skills that would allow them make "informed decision" (AlOteawi, 2002) as cited in Bordbar (2010).

Teaching Experience

To this point, according to Niederhauser and Stoddart (2001), teachers' experience in teaching did not influence their use of computer technology in teaching. Most research showed that teaching experience influences the successful use of ICT in classroom (Won and Li, 2008). Gorder (2008) reported that teachers' experience is significantly correlated with the actual use of technology. In her study, she revealed that effective use of computer was related to technological comfort levels and liberty to-shape instructions to as teachers perceived students. Cost of Computer Hardware

The price of computer hardware and software continues to drop in most countries, but, developing countries which Nigeria is un-exceptional, the cost of computer is severally more expensive. Considering the situation where majority of the secondary schools in Nigeria are short of books, paper and pencil (i.e traditional prospectus for teaching-learning activities) talk of affording the exorbitant price of computers. Many of the schools lack adequate infrastructure such as classroom and only few are equipped with television and radio. Apart from the basic computers themselves, other costs associated with peripherals such as: printers, monitors, Pater, modem, and extra disk derive are beyond the reach of most secondary schools in Nigeria. It is obvious that a very number of schools cannot afford the exorbitant internet fees as well.

Weak Infrastructure

In Nigeria as an instance, a formidable obstacle to the use of information and communication technology has infrastructurally stampeded. Computer equipment was made to function with other infrastructures such as electricity under "controlled condition". Over the years, Nigeria has been having difficulties in providing stable and reliable electricity supply to every nook and cranny of the country. Currently, there is no part of the country that can boast of having power supply for 24 hours a day except probably those areas where government officials live.

Lack of Skills

Nigerian education does not lack only infrastructure and information but also lacks human skills and knowledge to fully integrate ICT into secondary education. To use information and communication technology in secondary schools in Nigeria precisely in Ikwo Local Government Area, Ebonyi State, the need for recruitment of locally trained workers to install, maintain• and support these systems cannot be over emphasized.

There is acute shortage of trained personnel in application of software, operating systems, network administration and local technicians to service and repair computer facilities. There are so many designated personnel to use computer in Nigeria but they do not receive adequate training; in some cases, they do not receive training at all. Apparently, Nigerian secondary school teachers do not possess the skills required to fully utilize technology in curriculum implementation hence the traditional and cluster approach still dominate the secondary school system pedagogy.

Lack of Relevant Software

Software developers and publishers in the developed countries have been trying for long to develop or ennovate software and multimedia that have universal application due to the differences in educational standard and requirements. These products do not integrate into curriculum across countries. This means that, software suitable to be in Nigerian system of education is in short supply. There is great discrepancy between relevant software supply and demand in developing countries like Nigeria. There are clear indications from many countries that the supply of relevant and appropriate software is a major bottleneck obstructing wider application of the computer.

Limited Access to the Internet

In Nigeria, there are few internet providers that provide internet gateway services to Nigeria. Many of those companies provide poor services to customers and often exploit and default them. The few reputable companies which render reliable services charges high fees; thus, limiting access to the use of the internet. The greatest technological challenge in Nigeria is how to establish reliable cost effective for internet connectivity.

Moreover, secondary schools in Nigeria are not given adequate funds to provide furniture, requisite books, laboratories and adequate classrooms l*et al*one bringing adequate funds for higher-tech-equipment such as computer and internet connectivity. Again, due to the lack of adequate electricity supply especially in rural areas, secondary schools located in those areas have no access to the internet and are perpetually isolated and at the same time estranged from the world's information super-high-way.

Prospect of adopting e-learning as a model of instructional delivery in secondary schools

The adoption of E-learning as a model of instructional delivery in secondary schools precisely in teaching English language has a very high prospects. Prospect is the possibility that something will happen. That is to say that, there will be the possibilities of E-learning over taking the old method of traditional classroom delivery in no distance time. In teaching and learning English language, this particular heading is giving a kind of optimistic view of how teaching and learning will be channeled, though it has to attain its full ground now. According to Gruff (2009), the ranges of applications which computers and the internet can serve are numerous:

Firstly, computer can enhance educational efficiency. The efficiency in teaching various subjects, English as a case study could be improved. For example, many English language teachers are already teaching large classes of students which the students no longer receive the much individual assistance. English language is taught and learnt as a second language in Nigeria and many teachers of English are weak in teaching. It is possible to adopt the use of

carefully prepared computer programs to enhance and ensure that the learners of English language are accurately and systematically instructed in various secondary schools.

Secondly, computer can serve administrative functions. Computers can replace the laborious exercises of filling papers as well as filling cabinets and shelves where records accumulate dust over a long period of time. Another administrative application of computers software are: They are used for budget planning in secondary schools, accounting for expenditure, writing correspondences as well as writing reports; assigning the students in classes, reporting students' progress and testing students including scoring tests which help to reduce paper work. Computes can be used for individualized learning style and pace, microcomputers will enable students to progress at his or her own pace and at the same time receive continual evaluation feedback and correction for errors made.

Conclusion

E-learning is a veritable means for teaching and learning in this modern time especially technical subjects like English Language in secondary schools. In Nigerian secondary schools, there are little or no technology tools as vehicle of E-learning in the teaching and learning of English Language. Thus, this ugly trend is detrimental to the academic development of students of English language in that Local Government Area in particular and some parts of the country in general. Therefore, students' needs to be well equipped in computer literacy and manipulation because, individual in this modern world without the knowledge of computer is liable for defeat and will be lagging behind in the level of global communication today.

Also, the study sets out to investigate the application of e-learning in teaching-learning of English language in schools in Nigerian education system. Considering the findings from the study, there is evidence that there is need for e-learning in teaching English in secondary schools and educational technology operators should be provided in various secondary schools so that students will learn from them. Also, teachers should be informed on the need embed in e-learning educational method precisely in teaching their students English language in secondary schools in Ikwo Local Government Area of Ebonyi State.

Recommendations

1. Following the above conclusion in the research, the under listed are hereby put forward:
2. Government should liaise with other stakeholders in education sector to make internet connectivity and other e-learning resources such as computer, projectors, scanners etc, available to secondary schools.
3. Government should organize training and retraining of teachers on the need for e-learning in teaching and learning.
4. There should be educational technology material in both the rural and urban secondary schools.
5. There should be a campaign against computer illiteracy among teachers in secondary schools.
6. Government should promote a global partnership for the development of e-learning.

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