

# THE POSITIVE EFFECT OF REVAMPING COMPUTER EDUCATION IN NIGERIAN UNIVERSITIES THROUGH E-LEARNING

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## **Abstract**

*The issue of e learning is an aspect of technology in the field of education. This paper tries to scrutinize and confer the shortcomings, challenges and importance of implementing E-Learning in Nigerian Universities for sustainable development. It discusses how the signs in Computer education sub-sector rare not encouraging for instance lack of qualified Computer education teachers, lack of laboratories, machines, ICT tools and other infrastructures such as Software Service. The paper discusses Computer education instructional delivery for empowerment and employment via e learning. Instructions should be geared towards self-reliant of Nigerian citizens in future. Awareness of e-learning among the Universities is very high but investment and commitment to develop a good e-learning application is very poor and below expectation according to the study. Most of the staff and students in the universities only use Internet related e- learning site just for the sake of browsing and surfing, since their libraries cannot afford to provide them with adequate and current materials but not for the sake of real online learning. The study also found out that some of the universities have web sites and others are in the trend of creating web sites, which is usually for advertisement of the universities but not for the e-leaning activities. Furthermore, the findings also revealed that staff and the students have also been using e-mail and Internet in addition to developing web pages for transaction of students. The Universities are planning to invest funds in future in the selected areas of the e-learning application in order to cushion the effect of distance learning in case of disease outbreak.*

**Keywords:** Revamping, Computer Education, Sustainable Development, Internet, Web Site.

## **Introduction**

Computer education is the hub of any economy of a nation just as the wheel rotates around the hub, the economic sector of Nigeria rotates around vocational and electronic technical education considering the current socio-economic, scientific and technological development of Nigeria. Rashtriya (2015) pointed out that, the wealth and prosperity of a nation on the effective utilization of its human and material resources through industrialization. Rashtriya maintained further that, the use of human material for industrialization demands its education skills. Industry open suppossibilities of greater fulfillment for the individual. India's resources of man power can only become anassetin the modern world when trained and educated.

Modern achievements in the field of computer and communication technologies have offered tremendous opportunities for learning by electronic means (Rozina, 2012). The use of new multimedia technologies and the Internet in learning is seen as ameans to improve accessibility, efficiency and quality of learning by facilitating access to resources and services as well as remote exchanges and collaboration. E-learninghas become a new paradigm anda new philosophy in computer education with a mission to serve as a development platform for present-day society based on knowledge. Learning in an electronic environment is a great challenge in Nigeria because of so many factors which include shortage of man power and relevant machines and ICT tools. At this time due to many negative factors in the economy, Nigeria could not afford broad access to all the latest achievements available for education, as well as enable new educational technologies and e-learning to be widely used in universities. Part of these negative factors included difficulties of ICT integrating with computer sand Internet access, electricity, in adequate skills; low literacy to mention but a few. Today, educational sector in Nigeria witnessed critical shortage of appropriate instructional materials, very in effective system for digital learning resources creation, storage and maintenance culture. The teaching corpus was untrained in the effective use of information and communication technologies in the technical educationalprocess delivery.

But today, due to the emergence of Covid and related diseases that prohibit human to human contact, Teaching and learning becomes difficult, this motivated revamping Computer Education in Nigeria so that knowledge transfer will continue even in the era of pandemic. Things have started to change to better because in the research carried out by Manir (2017) on the availability and utilizationof the Internet found that in the nearest future educational programs by electronic means will cover from 40 to50 percent of learning time in Nigerian universities. Positive feedback comes from data on tremendous growth of computer equipment and internet utilization by academic staff in the Nigerian universities. It is notice able that the concept of e-learning is considered to be very gorgeouse as a new learning paradigm whose effect will be a positive one to the development of Computereducation in developing countries especially Nigeria, with all its possibilities. Nigeria is still facing alot of challenges in

this field of Information Technology. Many of shortcomings are not only technologically but also socially, educationally, economically and culturally sensitive. This has been attested by Tuzlukova, (2014) in his study in Russia stating in the respect of above problems and challenges that some researchers in Russia consider that the research focus will gradually move from technology issues (means and tools) onto e-learning itself. For example, Tuzlukova reports on some impressions of Russian English language teachers who took an e-learning course "Integrating Internet into the Classroom". Though the course was a wonderful and a very rewarding experience and its content was relevant to teachers' needs, there were some challenges in completing it. He further elucidates that the biggest obstacles for the teachers in completing the course; were such as time conflict with family and work (teaching) commitments. Teachers also mentioned computer/smart devices fatigue and physical risks (eye strain: after staring at the screen for hours, back pain, chronic "pins and needles" in feet, legs). Moreover, University Teachers also opined that lack of sufficient computer and Internet skills, insufficient experience with Internet-based teaching, lack of organizational /management support from their home universities, a new learning style so different from the traditional Russian culture of learning are some of the problems to preventing them to adapt to change.

To this extent 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, political engagement, media, education, health, leisure and entertainment. The speed of global technological and economic transformation demands urgent action to turn the present digital divide into digital opportunities for all. Poor access to the Internet in Nigeria is widely acknowledged by Manir (2017).

According to Manir (2017) internet technologies offer extensive development to opportunities, particularly for education, teaching, research and learning. Wireless Internet technologies could allow universities and institutions in developing countries to bridge the gap of information and materials access. Connecting Universities in Nigeria to the Internet will have a positive impact on education and their teaching system. The Internet complements locally available information, improves and accelerates knowledge flows, and can be used to deliver innovative education model to remote areas. There is a broader debate that comes to mind when thinking of the introduction of e-learning in the developing world like Nigeria. However, ICTs can be part of the solution. If education and capacity-building are critical steps for entering into the new global economic and educational development, e-learning should be considered a critical facet of basic development, an alternative medium of capacity-building and a means to stop people's empowerment. Gunawardana (2015) stressed that Computer-literacy is an imperative pre condition for learners to benefit from technology-based learning. E-learning can only build on a set of basic computer literacy/digital skills.

Learners should go through an introductory session for each programme that focuses on professional development in the use of technology in the classroom and outside the classroom.

The complexities that burden the successful and quality research conduction so as to re-engineer computer education via e learning cannot be over emphasized. This has been the phenomenon that has affected the development of Nigeria. It is at this critical time that research in electronic/Computer education is important in Nigeria, various questions are being asked why government funds and international partner agencies continue to channel resources rounds after rounds on the totality of Computer education programme and no reasonable result is coming out. The answer to this question bothering the minds of many Nigerians is that, there is need to ensure that the investment made by Nigerian Government and partner agencies on computer education research last forever and Nigeria be comes a developed state or nation. It is pertinent to continue to advocate for the revamping of Computer education, approving and enacting e-learning platform for Nigerian under graduates, this will enable them to be self-reliance and relevant to the new technologically digitalized driven society.

### **Basic Concept of E -Learning**

Rosenberg (2011) defines learning as “the process by which people acquire new skills or knowledge for the purpose of enhancing their performance”. He explains that the perceptions of learning in organizations are undergoing a distinct transformation. First, training should no longer only focus on the act of training but must demonstrate a positive impact on performance or outcomes. As the world is changing, the learning scenario is changing with the change in the introduction of information and communication technology, which gives room to the new concept called e-learning. In his paper, Rosenberg (2011) defines e-learning as a networked phenomenon allowing for instant revisions and distribution. In addition, it is delivered using standard Internet technology. E-learning goes beyond training and instruction to the delivery of information and tools to improve performance. The benefits of e-learning are many including cost-effectiveness, enhanced responsiveness to change, consistency, timely content, flexible accessibility, and providing customer value. The discussion emphasizes the need for organizations to build a strategic foundation for e-learning, addressing the emerging approaches to e- learning in addition to synthesizing other learning efforts of the organization.

The advantages of e-learning must out weigh its disadvantages for its implementation to be worth while. Amongst the many advantages of e-learning are that it is less expensive to deliver. E-learning is self-paced, provides consistent content, faster and works any where and at any time for learners. The instructional materials are easily updated and permit the use of multimedia which leads to reinforced learning through the use of video, audio, quizzes and other forms of interaction. E-learning can improve retention, provide immediate feed back and allows learners to

customize learning materials to meet their individual needs (Turk and Robertson, 2000). E-learning provides for risk-free simulation environments for acquisition of valuable skills in fields involving leadership and decision making. The disadvantages are that it may cost more to develop and requires new skills for the production and delivery of content. The associated technology might be intimidating, at times confusing, frustrating and costly. E-learning requires on the part of the learner, more responsibility and self-discipline to keep up with an unconstrained and robust learning process.

According to Manir (2017) internet technologies offer extensive development opportunities, particularly for education, teaching, research and learning. Wireless Internet technologies could allow universities and institutions in developing countries to bridge the gap of information and materials access. Connecting Universities in Nigeria to the Internet will have a positive impact on education and their teaching system. The Internet complements locally available information, improves and accelerates knowledge flows, and can be used to deliver innovative education model storemote areas. There is a broader debate that comes to mind when thinking of the introduction of e-learning in the developing world like Nigeria. However, ICTs can be part of the solution. If education and capacity-building are critical steps for entering into the new global economic and educational development, e-learning should be considered a critical facet of basic development, an alternative medium of capacity-building and a means to people's empowerment. Gunawardana (2015) stated that computer-literacy is an imperative pre condition for learners to benefit from technology-based learning. E-learning can only build on a set of basic computer literacy skills. Learners should go through an introductory session for each programme that focuses on professional development in the use of technology in the classroom.

The most effective way to make e-learning a successful experience is to keep it as simple as possible. This is particularly true from a technological perspective, as well as valid from a pedagogical perspective. One has to know how to target the audience, consisting of working adults who have limited free time and experience learning online, which, as with any distance learning, requires a lot of self-discipline and time-management skills.

Furthermore, Gunawardana (2015) highlights that studies in e-learning have shown that most programmes are likely to succeed with the constant involvement of the facilitator through e-mail discussion lists and individualized messages. The facilitator's constant involvement and feedback are the most powerful support for the learner. Many online courses consist of nothing but instructional material (unsupported web-based trainings); others provide a forum for exchange. Very sophisticated courses combine elements of online learning in one design called "blended learning" and are the best way to create educational environments.

### **Need for E-Learning in Nigeria**

Today, technology enhanced learning including distance online instruction which is recognized as a viable tool necessary for preparing citizens to participate in the technologically driven global environment. A multidisciplinary approach to online pedagogical research recognizes the value of technology enhanced teaching and learning as critical in the mix of diverse strategies. Its centrality in the global marketplace has been enhanced by a new culture shared by many educators. A culture diametrically opposed to elitist views of education as a privilege. A culture rooted in the belief that a more open education system enables increased contribution to the global marketplace of ideas. This new culture empowers citizens of the world to share knowledge globally where diverse voices are often underrepresented. The culture has been exemplified by an open movement, with diverse champions from remote village classrooms to ivory towers. Nigerian tertiary institutions however can be said to be behind in the adoption of these technologies as there is evidently an extremely low rate of diffusion of e - learning and as a consequence, a low rate of usage. The reason for this are not far-fetched as Nigeria, apart from being a developing country and having inadequate education finance policy, is also highly deficient in the area of engineering and technological development (Salawudeen 2010).

The prospect of tertiary education (postgraduate, undergraduate) in the near future relies on these educational technologies. E learning as an aspect of education technology is the convergence of learning process and the internet facilities. Information technological improvement has turned the world into a small global village. Communication is the live wire of today's dealings and interaction and means of livelihood. Communication is one of the oldest technologies. However, less attention was paid to it even though the role it plays in the life of mankind has not been negated to be a vital means of learning. Learning is seen as the process by which people acquire new skills or knowledge for the purpose of enhancing their performance. Be it practical or virtual it remains a process of getting and assimilating new experience for future achievements. Presently, some institutions in Nigeria are using some indexes of e learning to promote distance education. The e - learning involves the use of electronic technology to deliver education and training, to monitor learner's performance and to report the learner's progress. Hedge and Hayward (2014) view it as an innovative approach for delivering electronically mediated, well designed, learner centered and interactive learning environments to anyone, at any place, at any time. This is by utilizing the internet facilities and other digital technologies in consonance with instructional design principles. Hence, e - learning is all about learning with the use of technologies presumably computers and other modern day tools. E - learning technology is one of the bi products of Information and Communication Technology. In Nigeria, such recent developments and awareness of the government on Information and Communication Technology (ICT) have opened an opportunity for the adoption of e learning in delivering distance education (DE) for educating a vast mass of

uneducated or less educated Nigerians (Ajadi, Adey & Oyeyinka, 2018). National Universities Commission (NUC) has provided ICT facilities to all federal universities known as National Universities Network (NUNet). Such was a remarkable effort towards achieving the ICT challenges of the 21st century. Considering the recent awesome expansion of the ICTs awareness in the country, national Open University of Nigeria (NOUN) introduces some modern ICT like e mail, web based learning (e.g. open course wares), CD ROM for delivering its course materials through e - learning for its learners (Yusuf, 2019). Learning in an electronic environment is great challenge in Nigeria because of so many factors. At this time due to many negative factors in the economy, Nigeria could not afford broad access to all the latest achievements available for education, as well as enable new educational technologies and e-learning to be widely used in universities. Part of these negative factors included difficulties with computers and Internet access, electricity, inadequate skills; low literacy e.t.c. Today, educational sector in Nigeria witnessed critical shortage of appropriate teaching materials, very ineffective system for digital learning resources creation, storage and maintenance.

For all these issues, there is a desperate need for a positive change in technical education instruction delivery in Nigerian Universities especially for now that distance learning is needed for fear of spread of Pandemic disease which has been re occurring for the past six year starting with Ebola, Monkey Pox SARS and the recent Corona Virus.

### **Revamping E –Learning in Computer Education Instructional delivery**

Effective change in delivery of Computer education cannot be complete without adequately providing unique experiences such as research design and actual construction of project, practicing problem solving with materials and gaining information on the world of work place in line with global standard or challenges (Rashtriya, 2015). Computer education in Nigeria and globally is a unique area in educational sector that should teach not only occupational clusters and general conceptual knowledge but canals of osterad aptability, build technical literacy and provide leisure skills through experience which can also be acquired on line. The changes in computer education instructional delivery should be geared towards empowerment, job creation, and self-reliant of Nigeria citizens in future and would also enhance scientific and technological development for actualization of vision. Computer education should be able to teach us a variety of sellable useful skills as well as imbibe good maintenance culture for the few machines or tools that are available.

### **Methodology**

Two separate research processes were implemented: a questionnaire and an interview to study the respondent's individual learning experience. The first used a hard-copy survey instrument for collecting quantitative data on practical interaction of e-learning implementation. The second was to interview a sample group of academic staff

and students in universities of Nigeria, to obtain qualitative data on their own e-learning experience as well as their own understanding of factors, contributing to e-learning effectiveness or slowing it down. The study use six universities for the purpose of this studies as the sample from different specialization areas, i.e three universities from each South East Geopolitical zone and three from South South. Only three responded with usable answers. The study obtained 120 responses for the quantitative approach and 36 interviews for the qualitative approach.

### **Findings and Discussion**

The findings of the study show that considering the universities in Nigeria as the producer of e-learning inputs in the forms of skills in ICT, both the staff, students and the universities administration are aware of the existence and benefit of e-learning, this has the response rate of 55% of the total respondents of the study (Ferguson, 2019). But on the issue of implementation there is a very low response rate, which in variably shows that implementation has not been given much priority in Nigerian institutions because it has a major demand for information management systems (MIS) to track product (transcripts, courses, facilities, staff, etc.). In reality, in Nigeria, the entire operation of most universities (with the possible exception of payroll) is performed manually. Beyond its MIS demands, education is expected to experience major benefits from the use of ICT for technology-enhanced-learning (TEL). TEL includes program of electronic/digital supports for distance education, to technology-enhanced classrooms, and virtual laboratories. Networked access is also seen as an efficient response to binding constraints in terms of trained instructors and classroom facilities. This is an area where the Ministry of education, NUC in Nigeria should have responsibility for universities, not only in setting policy and implementation, but also in drawing together that consortium of stakeholders whose wisdom and support will be necessary to make things work. Formulating where to start this process should be one result of a Ministry of Education and Nigerian Universities Commission (NUC's) participation in a national ICT planning process.

The findings of the study exhibit that the lack of sufficient, trained ICT professional has been a current focus in ICT studies and reports in Nigeria. Nigeria produces only a small number of ICT-trained University graduates (high quality) each year. The number of positions in the state-funded universities is severely limited. However, the quality of training is highly variable. Nigerian universities face a serious shortage of experienced ICT professionals that could support the real e-learning implementation. Most of the staff and students do not have the adequate knowledge on how to use the e-learning programme.

It was further deduced that most of the staff and students in the universities up to 50% only use Internet related e-learning site just for the sake of finding related information for their researches, since their libraries cannot afford to provide them with adequate and current materials but not for the sake of real online learning. This is in line

with Manir (2007) study on the use of e learning in the Universities which arrived at 53%. As ICT becomes more a part of everyday life, it will be increasingly necessary for all the universities staff, most especially the Technical Staff and students to have some basic familiarity with computers and SMART devices. Technology revolutions are complete when such skills are taken for granted and the technology seems to have disappeared into the background.

For e-learning to succeed in Nigeria, it needs to build on another important pillar: the existence of infrastructure, along with some degree of connectivity. A growing difference in market liberalization of the Internet-access supply is leading to another kind of “digital divide” on the global scale many countries have introduced or are introducing telecommunications regulations that discourage the development of Internet-access service. Moreover, other technical constraints have to be overcome. It is, therefore, fundamental to implement self-sustaining Internet and computer training, which will eventually allow universities to keep pace with developed countries and give them access to technological and academic information, as well as Internet training at various levels. The benefits they gain will thus affect every aspect of their personal and professional life.

## **Conclusions**

For computer education to be revamped through e-learning in Nigeria, it needs to build on another important pillar: the existence of infrastructure such as Software as A Service, Hardware along with some degree of connectivity. A growing difference in market liberalization of the Internet- access supply is leading to another kind of “digital divide” on the global scale. Many countries have introduced or are introducing telecommunications regulations that discourage the development of Internet-access service through competition. Moreover, other technical constraints have to be overcome. It is, therefore, fundamental to implement self-sustaining Internet and computer training for trainers, which will eventually allow universities in Nigeria to keep pace with developed countries and give them access to technological and academic information, as well as Internet training at various levels. The benefits they gain will thus affect every aspect of their personal and professional life.

## **Recommendations**

This study recommends that the government should be more firm in managing the administration of public universities and help prepare them for the implementation of ICT and e-learning in Nigerian institutions.

In addition, effective government policies are needed to maintain viable social infrastructures that are sustainable even during unforeseen crises.

Government should equally infuse more monetary resources in Nigeria’s educational sector so that its institutions can compete globally.

Individuals that are well to do should continue to support this crusade by donating generously to university education in Nigeria.

Finally, 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.

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