

E-learning as a new construct of sustainable educational delivery in Nigeria

Veronica Egone Mogboh Ph.D

nekwuvero@yahoo.com

08034001816

**Department of Education Foundations
Godfrey Okoye University, Ugwuomu Nike,
Enugu**

**19th AARD E-Conference, Ignatius Ajuru
University of Education, Port Harcourt**

**Theme: Repositioning Education in Nigeria
Through Competitiveness, Innovation and
Entrepreneurship**

July 13th – 16th, 2020.

Abstract

Technological advancements of 21st century aided by unexpected environmental social phenomena of COVID-19 pandemic has brought to the fore, an urgent repositioning of education to trending issues. In education, learning theories and pedagogy have had the greatest impact, since education makes the society and societal development depend on Information Communication Technology (ICT), specifically, Online instruction has the potential to provide opportunities for reflective and integrating learning outcomes. This approach provides not only students but all societal activities on adaptive personalised e-learning, which refers to computer enhanced learning and learning techniques. It may involve the use of mobile technologies such as personal digital assistants and mp3/mp4 player. And includes the use of web-based teaching materials and hypermedia in general, as rooms or websites, discussion boards, collaborative software, e-mail, blogs, Wikipedia, text charts, computer aided assistant, educational animation, simulation, games, learning management software etc. Therefore, the survival of students and sustainability of entrepreneurs in institutions and organisations in the 21st century will increasingly rely on various forms of electronic delivery systems and communication facilities that are available in markets as requirements for educational flexibility. This paper raises opportunities for critical and creative analysis in sustaining e-learning as a competitive adjustment in the system of educational delivery. Ultimately, it is pertinent to emphasize that to ensure sustainable development, there is need to reposition education in the trending e-phenomenon.

Keywords: e-learning, competitiveness, innovation, technology, challenges, solutions

Introduction

Education is a natural right of every individual. It forms, integrates and assimilates individuals into the society. Reasonably, education revolves around the ever-changing values of world social culture. Each era of world history produced its own values which were incorporated into the society through appropriate processes and procedures. Our present world social culture is both innovative and competitive. Emphasis has shifted to technology and knowledge driven economy. The technological knowledge drive makes more focused and enterprising the word competition. Nations are in a competitive age driven by e-learning, e-commerce, e-health; even e-leadership etc. the drive is made more vicious with COVID-19 pandemic. This has forced nations into reflective, critical and creative thinking modes of coming to terms with its challenges embedded in the shutdown of all established activities in the society. This challenge has upturned most processes and procedures in the society. Therefore, there is need to reposition education for a competitive new world culture, embedded in innovative technology and techniques of production and consumption patterns. To reposition is literally to turn or move around, to see and do things in different angles, always seeking the best alternate position for maximum benefit. Education as an inalienable right of all citizens needs to be repositioned to trending times and issues. It is in fact to be proactive in its content and rendition to maintain its relative concept in development.

Importance of Technology Innovation in Education

Technology growth is a product of education, often configured by experiences brought about by phenomenal changes in the environment. Our thought patterns and actions and strategies are obviously linked with and influenced by the changing panorama of innovative technology. In education management, innovation is defined as the invention and implementation of practice structure, techniques or management process that is new to the highest level of

development in the field and it is accomplished in order to contribute to achieving organisations objectives (Brikinshaw, Hamel, Mol, 2008) In education, it has the unique ability to operate radical and durable changes regarding the competitive edge as viewed by Hamel & Breen (2010). Technology innovation in education could be seen as a deliberate activity in the pedagogical context since it improves students/pupils learning by means of interaction and interactivity. It compels students to use higher level of thinking and trending technological gadgets in teaching/learning to solve problems. The excitement of new learning techniques adds a functional dimension to education to solve a variety of educational problems/inadequacies. Innovation in education through technology helps create learning spaces especially changes in mindset. It also resets personality matters when it creates a place for all learners, through a flipped classroom model, which increases the design thinking process. Innovators and entrepreneurs are invited through such circumstances into the classroom to improve on sustainable learning applications and appliances.

Benefits of Innovation on Educational Technology

Innovation in educational technology enhances strategies such as crossover teaching, a comparative understanding of learning that bridges formal and informal settings. Similarly, in flipped classrooms, it blends learning as it focuses on student engagement and active learning and gives the instructor a better opportunity to deal with mixed levels, students' difficulties and differentiated learning preferences. It develops teaching and learning through virtual reality. Virtual classroom is applied in education for augmented reality and mixed reality generated on computer (<https://en.m.wikipedia.org>). Teaching through 3D printing technology is described by Nisha Patel (2017) as a technology wherein you can print objects and makes teaching engaging and gives wider scope for experimentation. These reflect few of the benefits of innovative teaching activities.

The Global Competitive Edge of ICT

Nigeria has come a long way in getting to terms as citizens of a global identity. The consumption pattern has been increasingly towards modern technological products which are mostly imported. The Nigerian population is dependent on these goods and services needed in the fast-global phenomenon. Eneh (2010) endorsed that technological advancement is an issue close to national heart, especially to indigenize modern technology hopeful that our economic and industrial success depends. China, U.S. and Japan are very close at the apex of technological improvement and supremacy. They seem to be succeeding, but China has come up tops in the race for technological supremacy with the COVID-19 phenomena. Like China, Nigeria has the enabling population, and are culturally imbued with technological ambient. Our youths spend most of their time on the web glued to their phones connecting and interacting with others, opening up opportunities for ideas, knowledge, business etc. The world is ruled by the internet, the information, communication technology gathering and disseminating ideas and new ways of doing things. Information and communication technology (ICT) enhance knowledge explosion and encourages a significant emphasis on research processes and results. This result has a progressive effect on production and development. According to Nwachukwu (2020), there is a growing dependence on social networks which affects education in significant ways. The digital regime of the world has great influence on development of students critical and creative thinking required often times. Global learning and economy are driven by technology. Tony Wagner (2008) is quick to point out that with the unparalleled growth in technology, that for nations' survival and sustenance, it is needful for these skill set to subsist- curiosity, imagination, agility, adaptability, initiative, problem solving, critical thinking, collaboration and leadership, accessing and analysing information, effective written and oral communication. The use of ICT tools provides and makes use of these qualities. Understandably, education in a globalised knowledge economy should go beyond preparing

students for employment. It should also aspire to create students that are able to meet the needs and solve the problems of the society by taking advantage of available tools and ushering in a new and more effective way of doing things. Innovation is no longer a choice, but a requirement to compete. Education has the responsibility to help students be capable of meeting this challenge.

E-Learning a Construct of ICT in Repositioning Education

E-learning as a construct is a pertinent ICT tool in the digital regime of education often required for competitive productive development. It is inclined to the learning theory of constructivism. Constructive learning is a process in which students ‘construct’ meaning based on prior knowledge and experience. E-learning as a tool enables the building of mental models or schemes which in turn provide meaning and organisation to subsequent experience, unlike the traditional didactic method ‘of teaching since education in the digital world is now learner centred. E-learning ensures that knowledge is created through an active process in which the learner transforms information, constructs hypothesis and make decisions using mental models, Bates (2010). This is in conformity with technology learning tools of ICT.

Models of E-Learning

There are two dimensional models: -

1. Classroom model
2. Distance education model

The classroom E-learning model is a situational classroom that makes use of e-learning technologies. E-classroom known as virtual classroom is an online class where every student works on a computer at their individual pace. It enhances individualised instructions, providing feedback projecting the teacher’s role as that of a supervisor, moderator or facilitator. The

virtual classroom facility can be assessed on Zoom, Skype, and WhatsApp tools. These on-line facilities are also useful for board meetings, conferences and trainings. In Godfrey Okoye University, Enugu, we have a practical use of this facility in faculty of education's I-learn, You-learn, We-learn project for training in different skills.

In distance education model, e-learning organises education in various geographical distances. It provides learning opportunities characterized by the separation of teacher and learner in time and place. The learning is certified by an institution or agency using a variety of media tools. Such tools include print and electronic, two-way communications that allow learners and teachers to interact, the possibility of occasional face to face meetings and a special division of labour in the production and delivery of programmes and courses. A. Van der (2017) specifically points out that this model separates a teacher and students by physical distance. He further points out that teachers in this model can use e-auditorium, e-boardroom, e-classroom, internet facilities, video-phone system and teleconference devices such as Zoom, webinar etc. for online instructional delivery. In addition, Nwosu (2012); Nwogu (2016) identified these sub models:

- a. Correspondence model
- b. Study centre model
- c. Educational broadcasting model of distance e-learning model

The table below shows a comparative analysis of traditional pedagogy and emerging ICT based pedagogy.

ASPECT	TRADITIONAL PEDAGOGY	EMERGING ICT BASED PEDAGOGY
Active Learning	<ul style="list-style-type: none"> • Activities prescribed by Teacher • Whole class instruction • Little variation in activities • Pace determined by the programmes 	<ul style="list-style-type: none"> • Activities determined by Learners • Small groups • Many different activities • Pace determined by Learners
Collaborative Learning	<ul style="list-style-type: none"> • Individual • Homogenous group • Everyone for him/herself 	<ul style="list-style-type: none"> • Working in teams • Heterogeneous groups • Supporting each other
Creative Learning	<ul style="list-style-type: none"> • Reproductive Learning • Apply known solutions to problems 	<ul style="list-style-type: none"> • Productive Learning • Find new solutions to problems

Source: *Thijs, (2012) Learning through the web available online*

<http://www.decidenetnl/publication/web based learning pdf>. Accessed 31st May, 2012.

Challenges of E-Learning in Nigeria

In an e-learning environment, the phenomenon presents fiscal and technical challenges. Teaching and Learning according to Higley (2014) in an e-learning environment happens differently than in the traditional classroom. Rubin (2019) lists three challenges bordering on technical and psychological issues, which include:

Fear of technology: Doubt on the reliance of technology by the older generation for an entire course. Likewise, the fear of change due to a fixed mindset from the traditional way of doing

things that is the fear of the unknown from the known which is usually the case when you are introducing a novel technology

Lack of flexibility: Distance learning programmes lack personal contact which affects the holistic impact of the education process.

Fear of cheating: Students tend to cheat with online learning procedures. This often happens during exams where someone can substitute for them, making a charade of the whole process of learning. This demands an inbuilt security system to mitigate this fear on the part of online administrators.

A major obstruction for Nigeria to be technologically well grounded is not only in instituting the enabling environment (social, governance, finance, energy) but in developing the discipline to implement plans judiciously and assiduously. A typical example is intoned by Eneh (2010) that the present state of affairs in respect of practical training of technology education students has not shown any improvement. He explains that as long as industry and other employers of technological education programme products are not getting really involved by way of offering necessary assistance to the training institutions. In addition, there is no democratisation of opportunities for students to access e-learning gadgets and outfits. Other challenges to teaching and learning in an e-learning environment are as follows:

1. Energy Supply: There is no steady substantial sustainable energy/electricity supply to enhance or support ICT usage. This is nowhere to be found in rural areas. Energy is linked up with provision of Wi-Fi facilities or energy points to charge electronic gadgets.
2. Covid-19 pandemic induce stress, poverty and ill-health. The pandemic has deluded our mindset with gloomy and characterizations of various forms of depressive moods. Negative phenomena such as ill-health, lack of food and other basic amenities like clean

water, drugs/hospitals, lack of information to alleviate these issues compound the lack of interest in digital knowledge and usage. Generally, the communication network is poor and inaccessible especially in rural areas.

3. Lack of funds: This goes with lack of infrastructure for digitalization of schools and organisations. Schools are bereft of such ICT facilities, even radios in hinterland schools. Students cannot afford to buy android phones much less a laptop. It is hoped the Federal Government announced palliatives for the schools during this pandemic will contain the provision of ICT materials. Some schools which provided online teaching/learning could not cover all its students because they could not afford to buy the gadgets nor credit data to access such facility. The available funds in such families were used to buy food and medications. To this end social stratification is unwittingly aggravated. This encourages criminal tendencies in a bid to belong and provide the gadgets. Dropout rates in schools are increased because some of these students could not take their exams and the gap widens between the attainment level of those who could take their exams and those who could not. The principle of learners to exposure especially in different climes is whittled down thus encouraging both social and physical distancing. Social distancing is ensured since funds and facilities are not easily available to different social/societal cadres. Physical distancing is verifiable with the principles and structure of online courses. America is in the forefront of limiting accessibility to foreign students in their institutions of learning. Students are expected to go online for studies from their domiciled countries. The aspect of education as assimilative culture can be tacitly eroded, if such obstructive policy is implemented.
4. Governments non democratisation policy of digital learning. Although the curriculum stipulates computer education but this has not been matched with accompanying digital installations and supplies in schools. There is even a dearth of technical support staff to

establish and encourage online learning in schools. Almost 98% of teachers are not proficient in the use of ICT apparatus, much more the students thus, there is a lack of appropriate teaching staff.

5. Poor teaching method. Teachers are rooted to the traditional classroom methods of physical constructivist organisation of teaching and learning through oral lectures. The use of virtual classrooms and blended lectures are yet to be ingrained in the methodology of teaching and learning.
6. School management cadre's lack of zeal in implementing e-learning policy guidelines. There is a general lack of interest across the management cadre of the education system. This is because of lack of knowledge and a motivating factor to learn.

Meeting the Challenges of E-Learning in Nigeria

Suggestions for Sustainable E-Learning Culture in our Education System

To build a sustainable e-learning culture in our education system, there is need to consider these suggestions. According to Higley (2014) there are two roles in e-learning that must be considered when discussing ways to improve these challenges. First, the instructors' role and second the students' role. These are based on adaptability, technical issues, computer training, time management, motivation.

1. Educators and education administrators must be aware that the nature of learning is changing. They must be in sync with such changes as on-line courses and flipped classrooms. They must know where to draw the line between the traditional and the digital divides in matters of accessibility and ability. According to Warschauer (2003) the 'digital divide is marked not only by physical access to computers and connectivity, but also by access to the additional resources that allow people to use technology well'. Bernard (2011) reiterates that the change has shifted from having access to knowing

how to use the technologies to obtain quality education outcomes. Ashis, Pani, Srimannarayana and Premarajan (2015) emphasize that administrators' vision and enthusiasm for proactive measures is lacking to endorse the use of these new technologies in delivery of education.

2. The theory and pedagogy of constructivism emphasize learner centred education. Most young people are 'attracted to' and 'depend' on social networks. They live and believe the social network and quality lectures could be downloaded in different course outlines. The national policy act on education according to FGN (2014)) emphasizes lifelong education to afford the individual a far more diversified and flexible choice, education activities to be centred on the learner, since educational revolution precedes any fundamental change in the intellectual and social outlook of any society. The ability to construct and upload courses has not been developed. Therefore, these are lacking in education programs in schools.
3. Technical provision and competence are important in developing a sustainable culture in e-learning usage in education. E-learning requires sufficient knowledge and skills to enable activities in a wide variety of situations. The need to fund is imperative for pedagogical tools that directly and significantly impact on on-line teaching/learning culture. Majority of the population is bereft of funds to provide tools. Moreover, they are not trained in the use of such modern pedagogical tools. The culture of e-learning needs to be appraised and motivated.
4. To support veritable e-learning culture, there is need for 'face to face' learning with educational on-line resources on various skills and numerous technological tools that are available to the providers of such on-line training platforms. A typical example is the I-learn, U-learn, We-learn project for training in various skills for mixed ability populations proposed by Asogwa, Ejike, Mogboh, (2020). This is a project designed by

the Faculty of Education, Godfrey Okoye University, Enugu. This is a trending on-line project and on-line registration. Teaching is done by experts culled from different domains of learning.

5. E-learning should be user-friendly. According to Nwachukwu (2020), teachers who are used to traditional pedagogy will resist the e-learning option. She suggests a variety of ways to make e-learning user-friendly such as creating shorter duration courses, creating learner-centred designs that are easy to navigate and not overwhelm the learners. She also points out that the learning environment should both facilitate and support learning. That means that it should be easy to use and provide opportunity for knowledge sharing and interaction between learners.

It is also important to provide technical support and guidance on how to use e-learning. In meeting this challenge for example, the traditional classroom has to step aside for a progressively blended classroom where virtual as well as physical opportunities are created in the pedagogical domain of teaching and learning. According to Rubin (2019) administrators developing and delivering courses should think through the audience, online environment, user experience, and especially the design of course delivery. They should take advantage and provide students with the opportunity to be interactive through a discussion forum, blogs, journals and both video and audio feedback.

6. In pursuance of a strengthened e-learning culture, Nwachukwu advises for the freedom to allow a required percentage of E-learning courses in the curriculum. Schools can establish nationally, e-learning domains, where experts in different fields can submit online courses/subjects for students. She emphasized that the project must be consistent with global best practices. This proposal is advantageous in Nigeria since she runs the same curriculum and has same evaluation system e.g. the West African Examination Council (WAEC) has same evaluative formula for Senior Secondary Certificate level.

She proffers that students from any school can buy an online course obtainable in the centralised domain. Professor Christian Anieke (2020) radio talk ‘From a University to an Epistemic Shopping Mall; a Post COVID-19 Vision of Higher Education’, expounded the benefits of establishing such a centralised domain where students could shop for best lecture materials since learning is a global phenomenon (Dream FM Radio Interview, 10th July, 2020).

7. Motivation: To motivate is to uplift the zeal, to encourage teachers and students on the pedagogical change thrust on education by the COVID-19 pandemic. Though the shift in technological pedagogy was slowly creeping into Nigerian schools, especially the elite ones, but the majority are bereft of grounded enabling facilities. Positive global influence from other countries that are more advanced in the usage of modern education technologies can be felt in only about 10% of school population. The federal government has promised some palliatives to schools in the surge of this pandemic and it is believed to motivate both teachers and students if preferably it is based on the provision and usage of e-learning tools and technologies. The National Universities Commission (NUC) started Computer Based Test (CBT, 2013) using on-line technology for Jamb Exam that qualifies for admission into higher education institutions,.. With the growth in on-line learning, other levels of education should be encouraged to use on-line tests. The curriculum has already mandated computer studies in both secondary and primary schools. Teachers should be trained to teach computer courses in schools nationwide, and provisions of energy source, gadgets and allowances for teachers built into school management.

Conclusion

E-learning has come to stay and be part of educational growth in Nigeria. The challenges embedded in appropriate knowledge, skills and gadgets for its usage notwithstanding, it

provides an environment of collaboration, choice and plenty of technological resources that support successful online learning experience. Since it supports a well designed and developed course outline, it provides focus for both teachers and learners, for meaningful learning, and opportunities for global competitiveness, and national development.

References

- Anieke C. (2020). From a University to an Epistemic Shopping Mall; a Post Covid-19 Vision of Higher Education. Dream FM Radio Interview, 10th July, 2020.
- Ashis, K., Pani, M., Srimannarayana, R. K. Premarajan (2015). e-learning: Challenges and Solutions – A Case Study. *International Journal of Learning, Teaching and Educational Research e* – ISSN 16942116 p. ISSN 16942493.
- Asogwa, U., Ejike, I., Mogboh, V. (2020). I-Learn, U-Learn, We-Learn program for mass Entrepreneurship education. An ongoing research project of the Faculty of Education, Godfrey Okoye University, Enugu, <https://forms.gle/sruX22KgKjBr1K7ZA>
- Bates, A. W. (2010) *Managing Technology Changes Strategies for University and College Leaders*. San Francisco. Jersey Press.
- Bernard. R. M. (2011). *Interaction in Distance Education and Online Learning: Using Evidence and Theory to Improve Practice*.
- Brikinshaw, J., Hamel, G. & Mol, M. (2008). *Management Academy of Management Education* Vol. 33 (4).
- Eneh, E. N. (2010). Potentials for Promoting and Sustaining School Industry Relationship for National Development. *ESUT Journal of Education* ISSN 15950603.pgs 39 – 44.
- Federal Government of Nigeria (2014). *National Policy on Education*. Lagos NERDC Press.
- Hamel, G. & Breen, B. (2010). *Virtorulmanagementului*. Publica Publishing House.
- Higley M. (2014). e-learning: Challenges and Solutions. <https://elearningindustry.com>
- Nisha, P. (2017). How is 3d printing going to change education? www.quora.com
- NUC Computer Based Test (2013). en.m.wikipedia.org
- Nwachukwu, M. S. (2020). *Sustaining E-learning in Higher Education in Africa*.

Unpublished Paper presented at the E-learning International Conference, Godfrey Okoye University, Ugwuomu, Enugu, June 10, 2020.

Nwogu, B. G. (2016). Educational Research: Basic Issues and Methodology. Ibadan Wisdom Publishers.

Nwosu, (2012). Fundamentals of Computer and Educational Technology.
<http://www.sciepub.com/reference/8319>

Rubin, N. (2019). 3 challenges & solutions around online learning. E-learning may be the greatest revolution in today's education. <https://www.ecampusnews.com> March 11, 2019.

Thijs (2012). *Learning through the web available online* http://www.decidenetnl/publication/web_based_learning_pdf. Accessed 31st May, 2012. <https://www.decidenetnl/>.

Van Der, A. (2017). Video Pedagogy for Vocational Education. www.etfeuropa.eu

Wagner, T. (2008). The Global Achievement Gap. www.21stcenturyschools.com

Waschauer M. (2003). Technology and Social Inclusion: Rethinking the Digital Divide.
www.researchgate.net