

Harnessing the Opportunities of E-Learning and Education in Promoting Literacy in Nigeria

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Abstract—The paper aimed at presenting an overview on the concept of e-learning as it relates to higher education and how it provides opportunities for students, instructors and the government in developing the educational sector. It also touched on the benefits and challenges attached to e-learning as a new medium of reaching more students especially in the Nigerian context. The opportunities attributed to e-learning in the paper includes breaking boundaries barriers, reaching a larger number of students, provision of jobs for ICT experts, etc. In contrary, poor power supply, cost of implementation, poor computer literacy, technophobia (fear of technology), computer crime and system failure were some of the challenges of e-learning discussed in the paper. The paper proffered that the government can help the people gain more from e-learning through its financing. Also, it was stated that instructors/lecturers and students need to undergo training on computer application in order for e-learning to be more effective in developing higher education in Nigeria.

Keywords—E-Learning, education, higher education, increasing literacy.

I. INTRODUCTION

IN today's fast-paced society, the need for educational qualification and acquisition of skills has become imperative because of the competitive nature of employment opportunities. Education has been generally accepted to improve national economic growth and development [1]. However, the opportunities provided for those that desire educational qualification is increasingly becoming minimal due to a lot of challenges which include limited admission spaces in universities, cost of qualitative education, amongst others. Most untrained people use the above excuses (though true) to back up their lack of formal education. According to [2], [3], education attainment is increasingly becoming difficult in Nigeria and other developing countries today, due to the large number of people interested in education, the limited space available to them in tertiary institutions and poor educational infrastructure. The above shows the challenges the government, university authorities and individuals encounter in the quest to ensure that a large percentage of the masses are educated. In light of the above mentioned, the Nigerian government can implement and deploy e-learning technology to address these current educational inadequacies.

Reference [4] opined that e-learning is teaching and learning via electronic media especially through the Internet (networked phenomenon) [5] which is already being widely

applied in most developed and developing countries around the world to deliver improved quality of education and its success cannot be denied. Reference [6] in [7] defined it as “an innovative approach for delivering electronically mediated, well-designed, learner-centered and interactive learning environments to anyone, anyplace, anytime by utilizing the internet and digital technologies in concern with instructional design principles.”

References [8], [9] affirm that e-learning is a new learning paradigm in the educational sector in Nigeria. Reference [8] states further that the earlier the world (in this case, Nigeria) embraces it, the better for educational development which the country seeks to achieve. E-learning is the utilization of Internet technologies to improve and access knowledge and performance outside of a traditional classroom. This offers learners considerable control over pace of learning, content, time and duration of studying, all to meet/ suit their individual learning objectives [10].

Deployment of e-learning technologies seems to be at least as effective as traditional instructor-led methods like lectures; however, students deceive and prefer e-learning as a complement to the traditional instructor-led training rather than as a replacement. A virtual learning environment provides this kind of combination to complement classroom tutoring [10], [11]. Repositories and digital libraries are infrastructures being deployed to support and provide access to e-learning [12].

E-learning which involves the use of computer technology as a means of carrying out regular academic activities is fast gaining recognition in every society and this is the reason many education experts are calling for its application especially in developing countries like Nigeria where educational attainment is still behind. However, [13] cautioned that, the most effective application of e-learning would be to complement conventional training as it is unlikely to replace classroom training. Reference [11] buttresses this assertion and states that e-learning aids to improve the quality of learning and distance learning programmes to be more qualitative and practical.

Based on the above observations, the paper takes an overview on the concept of e-learning and how the opportunities attached to it can be harnessed to increase literacy level in Nigeria.

II. CONCEPT OF E-LEARNING

It will be difficult to proceed with this paper without first considering the concept of e-learning. E-learning is a broad aspect of computing as such it means different thing to

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different people. According to [14], e-learning uses computer software, the Internet or both to deliver instructions and provide guidance to students. This minimizes or eliminates the need for teachers and students to share a classroom.

Commenting on e-learning, [15] explained that e-learning is “an education system based on the web that models conventional real-world education by providing equivalent virtual access to classes, class content, tests, homework, grades, assessments, and other external resources such as academic or museum links”. E-learning environments are the basic component of contemporary distance learning, but can also be integrated with a physical learning environment which may be referred to as blended learning. An e-learning environment presents a virtual world where students and teachers can interact online, real-time via web-based applications; teachers can employ various methods to deliver instructions such as PowerPoint presentations or videos and conduct assessments via quizzes and assignments. Students can equally respond, ask questions, and also collaborate with other [16], [17].

According to [18], e-learning is “naturally suited to distance learning and flexible learning”, but can be combined with traditional classroom methods to create a new, hybrid teaching methodology termed blended learning.

Bernard Luskin, the foremost e-learning pioneer explains that for the “e” in “e-learning” to be effective, broader meaning must be implied. Luskin articulates that “the “e” should be interpreted to mean exciting, energetic, enthusiastic, emotional, extended, excellent, and educational in addition to “electronic” that is a traditional national interpretation”. This broader interpretation allows for 21st century applications and brings learning and media psychology into the equation [19].

III.E-LEARNING APPROACHES

E-learning could also be referred to as Web-based training, generally, it has two general approaches:

- Asynchronous (self-directed, self-paced)
- Synchronous (instructor-facilitated)

In asynchronous learning, sometimes referred to as “self-paced” learning, students are mostly independent and they determine the pace at which they would complete any particular task on the web-based application or system. Though asynchronous courses have deadlines just as synchronous courses do, but each student is at liberty to study at his or her own pace [20], [13]. Self-paced learners are alone and completely independent and are offered e-learning courseware/contents which is developed according to a set of learning objectives and delivered via different media elements. It is a Teach-yourself method of learning that is initiated and directed by the learner and, instructions, rather than being provided by a teacher, is provided by software installed on a local computer, web-server or on CD-ROM. In this type of e-learning approach, internet connection may or may not be necessary [13].

E-learning can also take place synchronously, in synchronous systems, participants meet in “real time” and teachers conduct live classes in virtual classrooms or virtual

learning environment (VLE), that is, instruction is provided by a teacher, but that teacher is not physically present with the student. Learners, facilitators and instructors can communicate through e-mails, instant messaging, discussion forums, chats, a microphone, audio and video conferencing, chat rights, or by writing on the board. Conclusively, exercises and assessments may be included to measure learning [13].

IV.E-LEARNING COMPONENTS

According to [20], [13], there are e-learning components that can be combined in e-learning approach discussed above. Understanding these components will help design and develop a course that meets computer-based training objectives. Each e-learning component plays an important role in designing an online course. However, from concept to implementation, the audience, which in this context represents students (users), must be considered in the process of developing online courses (by conducting an audience analysis).

1. *E-learning content*: This includes quick-to-develop, simple learning resources which are non-interactive such as PowerPoint presentations, documents, videos/audio files, interactive e-lessons and electronic simulations that are designed in a structured way to meet defined learning objectives.
2. *E-tutoring, e-coaching, e-mentoring*: Services which provide human and social dimension can be offered to learners to support them through the learning experience. Individualized support and feedback are provided to learners through online tools.
3. *Collaborative learning*: Online collaboration among learners would require the use of social media tools such as chats, discussion forums and blogs to facilitate collaborative activities (knowledge sharing).
4. *Virtual Classroom* is an e-learning platform where an instructor teaches remotely and in real time using a simple learning resources to a group of learners.

V.OPPORTUNITIES PROVIDED BY E-LEARNING IN NIGERIA EDUCATIONAL DEVELOPMENT

Below are some of the prospects of e-learning in developing education in Nigeria:

- ❖ *Breaking Boundaries Barriers*: Being an Internet-driven concept, e-learning cuts across boundaries in its working. It implies that students from anywhere in the world can participate from the comfort of their place of abode. As long as Internet connection and a portable computer are available, e-learning is achievable.
- ❖ *Provision of Job Opportunities*: The implementation of e-learning requires an expert’s touch. This implies that a web-developer must design a platform where lecturers and students will interact, computer systems need to be purchased, installed and maintained, and also computer trainers need to train the users of e-learning.
- ❖ *Limitless Reach*: This implies that many students can attend classes by joining from anywhere in the world without the fear of overcrowding. Using e-learning deals

with the issue of over-populated classrooms. Classroom space would be minimized as students and lecturer learn more from outside the four walls of a physical classroom.

- ❖ *Improved Retention*: It is important to create an atmosphere in which learners can gain rich learning experience which would have a lasting impact, this can be done with a combination of multimedia tools and audio/visual aids. Instructions would be designed as interactive to help your learners retain the course content which will produce results.
- ❖ *Encourage Sharing*: Knowledge sharing has always been the bedrock of the learning community, a well-structured e-learning course would really encourage and improve sharing of insights, experiences and resources for the benefits of all.

VI. CHALLENGES TO E-LEARNING IN NIGERIA EDUCATIONAL DEVELOPMENT

The implementation of e-learning is not without its challenges. As viable as e-learning is portrayed, it also has its loopholes which is of interest in this sub-topic.

1. *Poor Power Supply*: This challenge is peculiar to Nigeria. For e-learning to be effective, it requires reliable power supply to support its functioning. This is necessary because computer systems need to be powered with electricity which is not in abundance in Nigeria. This poses a high challenge to e-learning impact in educational development in Nigeria.
2. *Cost of Implementation*: Implementation of e-learning requires large capital due to the cost of acquiring desktop and laptop computers. Also the acquisition of Internet facilities is relatively expensive in Nigeria. This is a great challenge to most people in a country that a large percentage of the population lives below a dollar daily [21]. The application of e-learning therefore will be tasking for most students in this situation.
3. *Poor Computer Literacy*: The effectiveness of e-learning depends on the ability of students to participate fully in online lectures/instructions. This further implies that students need to have the needed technical know-how on how to use computers and its related components. Most students in Nigeria and other developing nations are behind in IT trends; as such the use of e-learning might not yield the desired result in this regard.
4. *Technophobia*: This is more of a psychological challenge. Technophobia implies the fear of technology which is usually caused by childhood experience of electrocution. This condition sometimes grows with people to adulthood thereby making them scared of technology. This could make students having the condition loathe e-learning as an approach to education.
5. *System Failure*: E-learning relies on technology to function which is prone to break-down at any time. This makes e-learning vulnerable to failure as it progresses. These failures could be individual (as in the case a student's computer fails to come up) or general (as in the

case network becomes slow or comes to a halt due to bad weather).

VII.E-LEARNING IN NIGERIA: PRESENT INITIATIVE

Over the past decades, Nigeria institutions has started embracing course management software to provide a virtual learning environment designed to enhance student learning. However, these trends are not wide spread, as few institutions mostly use it for its distance learning programmes and not for the regular undergraduates' programmes when it is even in use. Currently, two universities in Nigeria have adopted the e-learning system, the Nigerian Universities E-learning (NUeL) and the National Open University of Nigeria (NOUN) and are committed to its development [22].

❖ Nigerian Universities E-learning (NUeL)

This is a public private partnership between Park Associates E-Learning Group, a private education and technology services company, the National Universities commission (NUC) a government agency under the Federal Ministry of Education and four participating federal universities namely, University of Uyo, National Open University of Nigeria, Usmanu Danfodiyo University, Sokoto and the University of Maiduguri. The NUeL partnership is to provide students with new opportunities, diverse degree programs and access to quality university education through e-learning. The platform provides amongst many, the online course materials, eTextbook, interactive lesson/exercises/quizzes, presentations, on-demand tutoring, personalized study guides [23].

❖ NOUN iLearn platform

The National Open University of Nigeria, popularly referred to as NOUN, is a federal open and distance learning (ODL) institution, the first of its kind in the West African sub-region. It is the Nigeria's largest tertiary institution in terms of student population. Its administrative headquarters in Victoria Island, Lagos and offers its numerous students the choice of over 50 programs and 750 courses. NOUN has deployed and implemented its iLearn portal technology to bring education to the homes of millions of Nigerians enriching students learning experience. The platform was deployed to ease access to excellent quality education and providing online virtual classroom/learning environment, study tools such as e-books, digitized lecture video and audio materials, networking and collaboration tools [24].

VIII. RECOMMENDATIONS

Having considered the concept of e-learning, approaches, its opportunities or benefits and challenges, the researcher strongly recommends that:

1. The government should expand the ICT sector to enable the actualization of e-learning come to reality through encouraging private sector provision and deployment of broadband internet facilities.
2. Computer literacy levels of pupils/student should be improved. This can be achieved through ensuring that computer studies as included in the curriculum of

education from primary level to tertiary level as a subject/course be adequately funded.

3. The power supply sector should be improved and/or alternative power supply should be introduced and encouraged to facilitate effective e-learning in Nigeria in developing education in Nigeria. Green energy solutions such as solar cafes, mobile solar kiosks and solar-powered e-learning centers should be deployed.
4. Lecturers should also be trained and re-trained to fit into present day reality of e-learning. This can be achieved by conducting seminars/workshops to sensitize them on the need to go the ICT way in tutoring students.
5. The Federal Ministry of Education should compel tertiary institutions to introduce and develop the collaborative use of e-learning with the traditional learning method to facilitate students continued interaction, learning and collaboration outside the classroom.

IX. CONCLUSION

The quest for the nation to rank among the top 20 strongest nations in the world is rested upon its ability to fast track its education sector development. This can only be achieved through the use of ICT-related approaches and the deployment of e-learning, integrated in a virtual learning environment, is the way to go.

The need for e-learning is now imperative in Nigeria as most nations are relying on it to ensure that a large number of their citizens are educated. In fact, in the 21st century, classroom education is now paving way for virtual environment learning. Nigeria cannot afford to lag behind; it is high time the nation embraces e-learning to develop its already languishing education sector and deploy it to promote literacy levels.

REFERENCES

- [1] K. S. Odukunle, "Funding of University Education under democratic rule in Nigeria: Problems and Prospects," in Proceedings of the 12th general assembly of SSAN, 2001.
- [2] A. Adesanya, Faculty Use of Course Management Systems, Lagos: Hallmark Press, 2005.
- [3] L. O. Odiya and S. I. Omofonmwan, "Educational System in Nigeria Problems and Prospects," *J. Soc. Sci.*, vol. 14, no. 1, pp. 81-86, 2007.
- [4] H. E. Eke, "The Perspective of E-learning and Libraries in Africa: Challenges and Opportunities," *Library Review*, vol. 59, no. 4, pp. 274-290, 2010.
- [5] M. J. Rosenburg, *E-Learning: Strategies for delivering Knowledge in the Digital Age*, New York, NY: McGraw-Hill Companies, Inc., 2001.
- [6] N. Hedge and L. Hayward, "Redefining roles. University e-learning contributing to Life-long learning in a networked world. *E-Learning*, 1:128 - 145," 2004. (Online). Available: <http://www.nationmaster.com/country/ni/Internet>.
- [7] T. O. Ajadi, O. I. Salawu and F. A. Adeoye, "E-learning and Distance Education in Nigeria," *TOJET*, vol. 7, no. 4, pp. 61-70, 2008.
- [8] D. Bryan, *A Research Briefing by the Technology Enhanced Learning Phase of the Teaching and Learning Research Programme*, Boston: John Wiley & Sons, 2004.
- [9] A. K. Manir, "Problems, Challenges and Benefits of Implementing E-Learning in Nigerian Universities: An Empirical Study," *iJET*, vol. 4, no. 1, pp. 66-69, March 2009.
- [10] J. G. Ruiz, M. J. Mintzer and R. M. Leipzig, "The Impact of e-Learning in Medical Education," *Academic Medicine*, vol. 81, no. 3, pp. 207-212, 2006.
- [11] G. C. Alaneme, P. O. Olayiwola and C. O. Reju, "Combining Traditional Learning and the E-learning Methods in Higher Distance Education: Assessing Learners' Preference," in 4th International Conference on Distance Learning and Education, 2010.
- [12] M. Andrew, *Virtual Learning Environments: Using, choosing and developing your VLE*, London: Routledge, 2008.
- [13] B. Ghirardini, *E-Learning methodologies: a guide for designing and developing e-learning courses*, Food and Agriculture Organization of the United Nation, 2011.
- [14] F. Johnson, *Virtually There: Learning Platforms*, London: Sage Publications, 2007.
- [15] D. Kirsh, "E-Learning, Metacognition and Visual Design," in International Conference on Advances in Infrastructure for e-Business, e-Education, e-Science, and e-Medicine on the Internet, L'Aquila, Italy, 2002.
- [16] B. Samuel, *Issues in the evaluation of large-scale two-way interactive distance learning systems*, Ibadan: University Press, 2008.
- [17] A. Morgan, *Online Education and Learning Management Systems — Global E-learning in a Scandinavian Perspective*, Sydney: Pelican Books, 2007.
- [18] E. Joel, *Learning in the new millennium: Building new education strategies for schools*, New York: McGraw Hill Books, 2006.
- [19] T. Cristina, E. B. Florentina, S. Beatrice and M. Cezar, "E-Learning," *Annals of the University of Oradea, Economic Science Series*, vol. 18, no. 4, 2009.
- [20] N. Phillips, *E-learning: Concept and Implementation*, Uyo: Samuf Press, 2007.
- [21] G. Adedeji, *21st Century Technologies*, New York: McGraw Hills, 2007.
- [22] O. Olatunbosun, F. A. Olusoga and O. A. Samuel, "Adoption of eLearning Technology in Nigeria Tertiary Institution of Learning," *British Journal of Applied Science & Technology*, vol. 10, no. 2, pp. 1-15, 2015.
- [23] Park Associates, "About | Nigerian Universities," 2016. [Online]. Available: <http://federaluniversities.com/about>. [Accessed 01 August 2016].
- [24] Emerging Platforms, "National Open University of Nigeria: Portal Home," 2015. (Online). Available: www.nou.edu.ng/page/e-learning. (Accessed 1 August 2016).