# Benefits, Challenges and Prospects of Integrating E-Learning into Nigerian Tertiary Institutions: A mini review

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## ABSTRACT

This article presents a preliminary review of prior studies for an ongoing master's dissertation. It is aimed at enabling stakeholders to properly comprehend the construct of electronic learning (e-learning). E-learning is actually one of the most dynamic and enriching systems of education that exists these days. It is seen as a significant educational innovation, particularly within learning ecosystems of tertiary institutions that is found to be aiding the process of teaching and learning with technology. E-learning has further transformed educational technology, providing easy access to education for many, who hitherto were unable to go to school before the transformation. It is facilitating meaningful learning activities leading to knowledge retention and maximizing academic achievement, as learning is transferred into the real world of work and life. In this paper, the historical perspective of e-learning, operational definitions of the e-learning concept, some of the tools and platforms that support e-learning and its delivery modes are presented. Most importantly, the paper assesses the e-learning ecosystem in Nigeria's higher education sub-sector, articulates the benefits, challenges, and prospects of integrating e-learning into the educational arena, and then offers some recommendations to address the challenges.

**Keywords***: e-learning; tertiary institutions; information and communications technology; educational innovation; Nigeria*

## INTRODUCTION

The Nigerian Universities Commission (NUC) notes that Nigeria with an estimated population of about 200 million people has about 170 universities (NUC, 2019), while the National Commission for Colleges of Education (2019) notes there are 149 colleges of education. Further, there are over 300 polytechnics, colleges, and specialized institutions (National Board for Technical Education, 2019). All are struggling to take care of the teeming needs for tertiary admission. For instance, among other things, the challenges of inadequate admission spaces and the high cost of quality tertiary education are constraining many who desire higher educational qualifications in Nigeria (Olowonisi, 2016). The demand for tertiary education in Nigeria far outweighs the carrying capacities of the universities, particularly the number of candidates that seek traditional face-to-face education (Ekundayo & Ekundayo, 2009; Obi, Charles-Okoli, Agunwa, Omotowo, Ndu & Agwu-Umahi, 2018; Olowonisi, 2016). According to a recent report from the Nigerian Bureau of Statistics (NBS), the Joint Admissions and Matriculation Board received a total number of 1,722,269 and 1,653,127 applications in 2017 and 2018 respectively (NBS, 2019). The same report further indicated that out of those thousands of admission seekers, only 566,719 and 549,763 were admitted into the universities in 2017 and 2018 respectively. This leaves a very wide gulf (shortfall of over a million) between those seeking admission and those who secured admission. This has nearly been the trend for the last decennia (Ekundayo & Ekundayo, 2009) and there seems to be

no end in sight. To lessen the mounting pressure to increase access to tertiary education, higher educational institutions (HEIs) have resorted to increasing the number of online courses and programmes offered (Meyer, 2014).

Twenty-first century education is awash with seismic pedagogical shifts orchestrated by rapid advances in technology witnessed in the last three decades, particularly, the boom in information and communications technologies (ICTs) like the Internet (Liverpool, Marut, Ndam & Oti, 2009; Yunusa, Umar & Bervell, 2019). In fact, ICTs employed in online learning environments now forms an integral and an essential feature in the instructional delivery for education and training, particularly for open and distance learning (ODL) in many educational and training institutions across the globe (Bawa, 2016; Lawn, Zhi & Morello, 2017).

Indeed, online delivery systems have further transformed educational technology and provides easy access to educational and training services for many, who hitherto could not have gone to school before the revolution, facilitating meaningful learning activities (Bawa, 2016; Bai, 2017; Liverpool, Marut, Ndam & Oti, 2009; Yunusa, Umar & Bervell, 2019), leading to knowledge retention (Bai, 2013), and maximizing academic goal achievement as learning is transferred into the real world of work and life (Bai, 2013). It is actually one of the most dynamic and enriching systems for education that exist these days (Miltiadou & Yu, 2000). Eze, Chinedu-Eze, & Bello (2018) consider e-learning environments as significant educational innovations, particularly in HEIs' learning ecosystem by advancing technology-enabled platforms and integrating digital technologies into the teaching and learning processes. They maintain that HEIs undertake rigorous programmes that encourage the application of ICTs for effective online interaction, and teaching and learning, so as to develop much needed cognitive skills to meaningfully contribute to the growth of the knowledge-based economy (KBE). Interestingly, the emergence of the novel corona virus 2019 has further exacerbated the utilitarian value of e-learning for all education and training institutions at all levels.

Owing to the numerous pedagogical and socio-economic factors (Aboderin, 2015) and the attendant benefits derivable by teachers and learners, electronic learning (e-learning) has fast grown within all levels of the educational arena (Ibezim, 2013) and has increasingly diffused corporate settings (Aydin & Tasci, 2005). Since learning is now a key business process in academics (Adiyarta, Napitupulu, Rahim, Abdullah & Setiawan, 2018) and training institutions, e-learning has become one of the top global industries that provides knowledge support and jobs to a huge section of the global population (Bawa, 2016). For instance, while the e-learning market experienced constant growth in Europe (Aydin & Tasci, 2005) initially, the global e-learning market is currently projected to grow by 10.26% between 2018 and 2023 to reach a total market size of about US$286.62 billion (DOCEBO, 2019). This current wave of developments and deployments of e-learning by many institutions is reinforced by the desire to solve authentic learning, teaching, and performance problems. For this reason, many education experts have called for the application of e-learning, particularly in developing countries such as Nigeria for whose population, educational attainment still lags far behind the advanced economies (Olowonisi, 2016). Consequently, the National Open University of Nigeria (NOUN) and many other Nigerian Universities have adopted e-learning.

Given the aforementioned challenges, it is now imperative for tertiary institutions of learning, especially the likes of NOUN to broaden their teaching/learning strategies to include e-learning (Obi, Charles-Okoli, Agunwa, Omotowo, Ndu & Agwu-Umahi, 2018). By and by, the deployment of e-learning technologies seems not the least as effective as conventional instructor-led approaches to teaching and training instead of serving as a replacement (Olowonisi, 2016).

Just as there are countless benefits accruable to the adoption of e-learning, so there are challenges. Therefore, it is the intention of this paper to identify mechanisms for amplifying potential benefits while at the same time proffering strategies for tackling the challenges. The rest of the

article is structured as follows: next is a discussion on e-learning, its historical background, definitions of e-learning, tools, apps and platforms supporting e-learning as well as its delivery mechanisms. The benefits and challenges of implementing e-learning in Nigerian HEIs are then highlighted which is followed by the last section that concludes with some recommendations.

## HISTORICAL DEVELOPMENTS OF E-LEARNING

A study by Meskhi, Ponomareva & Ugnich (2019) traced the origin of e-learning to the birth of distance education in Europe which started off as "correspondence study". They maintain that, at the end of the 18th century, the emergence of affordable postal communications gave rise to correspondence study that involved remote learning. Similarly, in developing countries, correspondence courses by way of printed learning materials were mailed to students at regular intervals who then read the materials, answered questions and returned same to their tutors (Deb, 2011). The author added that, the open-universities that operated in the late sixties and the early seventies delivered instruction to off-site learners via radio and television broadcasts, pre-recorded audio-tapes and correspondence tuition. The advent of the computer and the Internet, and multimedia technology which redefined the whole essence of communication. The philosophy of learning and distance learning offered new opportunities for closer contacts between trainers, tutors, and trainees/learners with improved quality learning materials compared with then printed media. Additionally, Deb (2011) opined that, by extending the application of ICTs, the traditional classroom-based school system eventually transcended classroom walls to meet the unreached and underserved via e-learning systems.

Moreover, contemporary needs for implanting digital media into the school system became necessary because digital environments offered far greater independence regarding choice of learning, a faster rate of information transfer, reduced costs, and increased access to education (Meskhi, Ponomareva & Ugnich, 2019). As noted by Deb (2011) in the earlier literature this provided students with the opportunity for self-learning or study. Thus, the usefulness of digital technology and the promise that it held, as can be seen in its wide applications in teaching, management and administration, and research (Ouma, Awuor & Kyambo, 2013), warranted its current integration into institutions of learning, especially at the tertiary level.

Consequently, the integration of digital technologies led to further transformation of distance education into online education which rapidly developed in the 20th century (Meskhi, Ponomareva & Ugnich, 2019). According to Khan (2005) online learning activities have been used as synonyms to e-learning including: electronic learning: Web-based learning (WBL), Web-based instruction, Web-based training, Internet-based training, distributed learning, advanced distributed learning, distance learning, online learning, mobile learning, or nomadic learning, remote learning, off-site learning, anytime-anyplace-anywhere-learning.

The earlier literature shows that the term e-learning also represents open, flexible, and distributed learning, (Khan, 2005) also sometimes called correspondence course delivery (Wilson, 2012). Similarly, e-learning is often used synonymously with such terms as online learning, computer-assisted learning, computer-based training, (Lawn, Zhi & Morello, 2017; Yacob, Kadir, Zainudin & Zurairah, 2012), and computer-mediated communication systems for instructional delivery (Miltiadou & Yu, 2000). Online learning, online open and distributed learning, and distance education also referred to as web-based learning or e-learning (Meyer, 2014).

Some scholars, including (Khan, 2005; Obi, Charles-Okoli, Agunwa, Omotowo, Ndu & Agwu-Umahi, 2018) state that e-learning was originally assumed to be the same thing as distant education where learning took place solely via a web-based medium. Equally, it was initially viewed as technical support or technical improvement of online education (Meskhi, Ponomareva & Ugnich, 2019). Nevertheless, soon there arose the need for the purposeful design of education courses,

their adoption and adaptation to the virtual learning environment (Meskhi, Ponomareva & Ugnich, 2019).

E-learning which includes the usage of computer technology as a means of running regular academic activities is fast gaining recognition nearly in every society (Olowonisi, 2016). Ibezim (2013) earlier highlighted that e-learning has in essence become one of such tools that is being frequently used to enhance teaching and learning in the 21st century. In effect, today, the scope of e-learning has been expanded to encompass all activities of electronically-mediated teaching (Kyari, Adiuku-Brown, Abechi & Adelakun, 2018; Obi, Charles-Okoli, Agunwa, Omotowo, Ndu & Agwu-Umahi, 2018), with the potential to impart learning in a much more efficient and interactive manner, as observed earlier by Deb (2011). In fact, the emergent e-learning concept has revolutionized the education sector with many HEIs escalating their scope in terms of programmes, courses, activities, and by collaborating with other similar institutions of learning (Moses, Oladunjoye & Agu, 2016). With the use of e-learning becoming increasingly popular in the educational arena, there is further need for technology in support of teaching and learning (Muharina & Kelana, 2017). This signals a paradigm shift in education noted in the literature, with profound impact on the institutions and their stakeholders, including teachers, learners, instruction, administrators, technical and support staff (Khan, 2005; Sun, Tsai, Finger, Chen, & Yeh, 2008; Ouma, Awuor, & Kyambo, 2013).

A previous study by Bhuasiri et al. (2012 as cited by Adiyarta, Napitupulu, Rahim, Abdullah & Setiawan, 2018) indicated that over one thousand schools and organizations in more than 50 countries have implemented e-learning to support their teaching and learning activities. However, for developing economies, their story is different because computerization and Internet connectivity (especially high-speed broadband connectivity) remain inadequate when compared to those of the developed countries (Deb, 2011). For example, Eze, Chinedu-Eze, & Bello (2018) also opine that, despite the noticeable benefits the integration of e-learning offers to the developing countries, its adoption has been somewhat low chiefly due to low literacy rates and the meagre funding education receives from governments at all levels. While available literature indicates that e-learning in Africa is still at its infancy stages and has not taken firm root in African universities today (Kyari, Adiuku-Brown, Abechi & Adelakun, 2018), Ibezin (2013) noted that several African countries had equally incorporated e-learning technology, particularly in postsecondary education at that time.

For the case of Nigeria, the history of the development of e-learning in Nigeria can be traced back to the development of telecommunication which began in 1886 when e-cable connections were established by colonial masters to link Lagos and the colonial office in London (Ajadi, Salawu, & Adeoye, 2008). This according to the authors was further enhanced in 1893 when all government offices, first in Lagos and later in other parts of the country were provided with telephone services. However, it is germane to note that e-learning is just being implemented as an instructional delivery mode in Nigerian universities (Kyari, Adiuku-Brown, Abechi, & Adelakun, 2018). It has been claimed that, about two decades ago, it was only a few universities in the Nigeria that integrated e-learning effectively in their teaching and learning process, most of which were privately owned, but with one notable exception of a public university, the National Open University of Nigeria (Obuekwe & Eze, 2017).

Incidentally, the Government of the Federal Republic of Nigeria (FRN) has equally envisioned a role for e-learning in its educational system, when, through its National Policy on Education, it promised the development and promotion of effective use of "innovative materials in schools" and had also promised facilities and the required infrastructure to promote ICT and e-learning (FRN, 2004). Indeed, according to Liverpool, Marut, Ndam & Oti (2009), the NUC laid the foundation for the integration of e-learning into the Nigerian higher education sector during the last three to four decades. This the authors claim has been done through massive investments in ICT infrastructure, electronic learning management systems, management information system, e-mail access and

library information services. NUC has equally organized some expert training workshops on e-learning (Kyari, Adiuku-Brown, Abechi & Adelakun, 2018).

Bukhari (2010 as cited by Eze, Chinedu-Eze, & Bello (2018) hinted that while partnering with the University of Kenya, the University of Port Harcourt was the first Nigerian university to integrate e-learning and ODL in certain disciplines. Other universities included: University of Ibadan, Obafemi Awolowo University, University of Benin, University of Abuja, University of Lagos, and NOUNm all of which have facilities for e-learning (Aboderin, 2015). Eze, Chinedu-Eze, & Bello (2018) hinted that the country's tertiary institutions typically implement e-learning by way of packaged addresses stored on compact disks which are played when needed. However, for the last ten to fifteen years, higher education institutions in the country have started integrating course management software to provide virtual learning environments (Olowonisi, 2016). The author added that such efforts had led to the launch of the Nigerian Universities E-learning (NUeL), a public private partnership among Park Associates E-Learning Group, the NUC and four participating universities: University of Uyo, NOUN, Usmanu Danfodiyo University, Sokoto and the University of Maiduguri. However, with the directive from NUC, urging universities to establish their units of ODL, the stakes for e-learning in Nigeria are even much higher now, than at any other time in the history of the country.

**CONCEPTUALIZING E-LEARNING**

It is imperative to conceptualize the key construct(s), because that helps to delineate the parameters of their applicability in a study and also offers a clear framework for any research study. Accordingly, the construct of e-learning is operationally conceptualized in the subsequent sections.

Even though e-learning has been around for some time, it is a comparatively new pedagogical approach that is defined differently, and it is important in different ways to different academics and researchers (Kyari, Adiuku-Brown, Abechi & Adelakun, 2018; Malale, Gomba, & Dichaba, 2018; Wilson, 2012).

Essentially, e-learning is a mode for delivering instruction with the aid of electronic technologies so as to acquire or impart desirable knowledge and skills to students and trainees alike (Borotis, Zaharias & Poulymenakou, 2008; Schreurs, Ehlers & Sammour, 2008; Sun, Tsai, Finger, Chen, & Yeh, 2008; Yacob, Kadir, Zainudin, & Zurairah, 2012). According to Eze, Chinedu-Eze, & Bello (2018), while some view e-learning as pieces of content packaged using technical infrastructure, others refer to it as an online self-study approach which involves continuous learning and joint participation of learners, teachers and facilitators. Therefore, students' e-learning experiences within HEIs tend to be integrated with academic experiences for sustainable learning improvement because they are relevant not only to academic success but also to lifelong learning for personal success (Miltiadou & Yu, 2000, Kim, Hong, & Song, 2019).

According to Ibezim (2013), e-learning makes use of the Internet to support the delivery of learning, skills and knowledge by applying a systematic approach that does not necessarily limit itself to any particular course, technology or infrastructure, but rather offers flexibility which enables just-in-time teaching or training, anytime and anywhere it is needed. It empowers everyone, anywhere to access information or training/learning resources without recourse to time restrictions and/ or geo-spatial considerations, regardless of subject matter (Aboderin, 2015; Sun, Tsai, Finger, Chen, & Yeh, 2008; Yacob, Kadir, Zainudin, & Zurairah, 2012), thus enabling individuals to acquire skills crucial to succeed in the contemporary knowledge-based economy (Aboderin, 2015). This has therefore motivated the need for active learning approaches using online learning platforms. However, for a thorough understanding of the e-learning concept, we need to operationally define it within the context of this study, but it is necessary to first consider some definitions in the extant literature which include the following:

The Food and Agriculture Organization of the United Nations (FAO) defines e-learning "as the use of computer and Internet technologies to deliver a broad array of solutions to enable learning and improve performance" (FAO, 2011:3). According to Schreurs, Ehlers & Sammour (2008:497), "e-learning in today's organisations can be defined as the delivery of instructional content or learning experiences enabled by electronic technology and it is one of the major innovations that diffuses corporate settings".

Moses, Oladunjoye, & Agu (2016:162) defined e-learning "as an innovative approach for delivering of electronically mediated, well-designed learner-centred and interactive learning environments to students in any part of the world and at any time through internet and digital technologies". Likewise, in the words of one of the early leading proponents of e-learning, Kahn (2005),

> "*e-learning can be viewed as an innovative approach for delivering well-designed, learner-centred, interactive, and facilitated learning environment to anyone, anyplace, anytime by utilizing the attributes and resources of various digital technologies along with other forms of learning materials suited for open, flexible, and distributed learning environment*" (p. 3).

Consequently, in this paper, e-learning refers to the application of digital technologies or ICTs, including the Internet, the Web, mobile phones, tablets, computers, compact disc (CD), digital video disc (DVD), and social media, to facilitate teaching and learning inside (traditional learning classroom environments) and outside of the conventional classroom setting, whether it is asynchronous or synchronous, or both.

Nevertheless, e-learning comes in diverse forms, applications and platforms, some of which include phone-in radio programme, interactive television programmes, cable or satellite broadcasts, the Web or Internet, ethernet, extranets, intranets, audio/video tapes, CDs, DVDs, digital textbooks or e-textbooks, (eBooks), cloud computing, instant messaging, video conferences, i-pods, podcasts, teleconferences, mobile technologies, web-based technologies, e-learning platforms and CD-ROM. They also involve multimedia sharing platforms: Skype, audio/video conferencing tools, Whatsapp, Adobe Connect, webinars, blogs, video blogging (vlogging) wikis, podcasts, YouTube, Flicker, Twitter, ScoopIt, Facebook. By using the applications, platforms and tools above, teaching and learning occurs in diverse modes, ranging from face-face interactions with teacher presence (synchronous learning) to online/offline presentations with teacher presence (hybrid synchronous learning) or without teacher presence (asynchronous learning).

## BENEFITS, CHALLENGES AND PROSPECTS OF INTEGRATING E-LEARNING INTO TERTIARY INSTITUTIONS

### Benefits

E-learning offers countless benefits and advantages to education, particularly the higher education sub-sector of developing countries most of which hitherto, are stymied by hydra-headed challenges. At the broader scale, for instance, it has contributed greatly towards meeting the human capital development needs of developing countries and by extension, towards their socio-economic developments. It is one innovative mechanism by which the 'the education for all' goal and inclusive education can be achieved, because it has the power to widen access to educational services and at the same time breaks down other barriers like disabilities (physical impairments), distance and finance. Anybody can learn from anywhere, irrespective of time and distance.

The quality of education generally can be improved with the implementation of an e-learning system. For instance, e-learning and other innovative open learning multimedia instructional delivery modalities potentially hold limitless benefits for students and the learning process. It serves

as a useful tool for improving quality teaching and learning (Coopasami, Knight & Pete, 2017) by increasing the teachers' motivation to teach and students' motivation to learn (Bates, 2009) and by playing the crucial role of preparing a new crop of teachers, and up-skilling existing teachers to meet twenty-first century pedagogical expectations (Oye, Salleh, & Iahad, 2011). E-learning fosters active learning, empowers learners to study at their own pace, and enables cooperative and collaborative learning activities among students. This enhances students' higher order thinking skills and ultimately improves learners' retention of knowledge. It also results in better academic goal achievements or learning outcomes. For example, Obuekwe & Eze (2017) noted that e-learning environments enrich and deepen skills, promote individualised learning, strengthen teaching by drawing the world closer to the classroom, and relating learning experiences to the real world of work, as well as creating economic viability for workers of the future.

With the integration of e-learning into HEIs, governments, institutions, and individual learners will be saving a lot of cost. The need for physical infrastructure by way of classroom facilities will be reduced. Likewise, students do not need to travel to faraway places to enrol in programmes and courses of their choice if they are available online.

Indeed, the literature is replete with numerous benefits of e-learning that can be derived by individual learners, the university, and governments as well. It is claimed that e-learning ensures the following: greater access to information; better communication; increased cooperation and collaboration; synchronous learning; improved pedagogy through simulations; virtual experiences, and graphic illustrations (Aboderin, 2015; Bates, 2009); diversity of lectures; enhancing students' active engagement and learning, and impacting academic goal achievement (Aminu & Rahaman, 2014; Mao, 2014), and by helping to meet the needs of the knowledge based economy (Bates, 2009).

E-learning is beneficial in several ways because it meets the diverse needs of students, by providing support to differently abled persons, engaging learners who do not respond well to conventional educational settings, providing opportunities to enhance learning by the gifted and talented learner, and by developing independent learning skills through professional learning experiences (Malale, Gomba & Dichaba, 2018; Meskhi, Ponomareva & Ugnich, 2019). Most especially, by enabling self-study at one's own pace and personalized learning, e-learning helps older learners overcome the learning challenges posed by physical disabilities and coping with one's numerous roles as an adult (Chu & Tsai, 2009). It also enhances face-to-face interactions during teaching and administration in HEIs, and creates room for integration into the work place (Ibezim, 2013; Malale, Gomba & Dichaba, 2018).

With respect to lifelong learning, (Casquero, Portillo, Ovelar, Benito & Romo, 2010) view e-learning as being capable of making learning a proactive learner-centred process, since learning is supposed to take place for the entire life of an individual, in geospatially dispersed places, with an admixture of formality and informality in the content and in the organizational structure that involve different people. They added that the proactive nature of lifelong learning enables learners to develop new competencies through learner-centred experiential learning activities.

The benefits have started trickling down to the Nigerian higher education sub-sector since most universities in the country have implemented e-learning at different scales. NOUN is addressing the challenge of inadequate admission spaces as it has already accommodated over half a million students and has the capacity to absorb at least a million more students. Additionally, with the introduction of e-learning, the visibility of Nigerian universities in the global educational arena has been boosted.

**Challenges**

Corresponding challenges seemingly follow the benefits when e-learning is implemented. For example, a real digital divide exists even among countries, institutions and learners in developing countries like Nigeria. High speed Internet broadband is not evenly spread across most parts of the developing world including Nigeria. Also, given the fact that ICTs depend heavily on electricity, the derelict power situation in Nigeria poses a significant challenge to the smooth implantation of e-learning systems. Though ICTs are now common, many cannot still afford some of the quality instructional media required for modern day online learning experiences. Individual differences with respect to e-readiness are also prevalent as many still lack basic computing skills to undertake e-learning modes of study.

In the opinion of Ali (2017), to know why electronic learning systems, it was necessary for us to determine the challenges that potentially limit the successful implementation of these systems. While studies indicate that e-learning in the context of HEIs has become almost indispensable, it is not immune from challenges. Andersson & Grönlund (2009 as cited by Ali, 2017) developed a model that clustered the barriers to electronic learning systems into a four-dimensional conceptual framework that included: technological issues, content issues, individual issues and context issues, most of which are discussed below. Equally, personal responsibility and self-discipline required to sustain motivation in online learning environments (Lawn, Zhi & Morello, 2017) were also found to serve as hinderances to continuous learning in e-learning environments.

Lawn, Zhi & Morello (2017) listed: poor study habits, learners' feeling of isolation, lack of peer-to-peer engagements and learning, absence of quick response from instructors when issues arise, especially within asynchronous contexts, and instructional contents that are standardized and are likely to reduce the ability to either rework or improvise. Earlier work by Borotis, Zaharias, & Poulymenakou (2008) indicated the following issues as demotivating to learners and could potentially hinder the acceptance of e-learning by students: learners' feel a sense of isolation, find it difficult to navigate through and within online courses; instructional learning tasks seem to be confusing; irrelevant instructional materials/resources; and technical glitches. Similarly, authors like Mao (2014) listed rigid school networking policies, hardware availability, and the complexity of effective technology integration as having the tendency to hamper the effective implantation of e-learning programmes in schools. Lawn, Zhi & Morello (2017) list poor writing, computer, and communication skills.

Furthermore, for developing countries such as Tanzania, challenges such as limited access to the Internet, bandwidth difficulties, and unavailability of instructors at discussion forums form some of the problems of e-learning integration in that country (Malale, Gomba, & Dichaba, 2018). The authors underscored the ineffectual e-tutoring system, lack of computer skills, shortage of staff, and lack of commitment from both lecturers and students as barriers to e-learning integration at the University of South Africa.

The challenges of implementing e-learning in Nigerian universities, inclusive of NOUN as catalogued by some researchers are: inability of teachers to assist learners build up capacity; lack of finance; irregular power supply; inadequate trained human resources; insufficient instructional technologies; inadequate critical infrastructure such as telecommunication infrastructure, especially high speed Internet Broadband; unsatisfactory student-computer ratio; inadequate e-learning facilities; high cost of software; and the high cost of Internet broadband. Still, others include: the high cost of implementation; poor community literacy; technophobia and system failure (Aboderin, 2015; Aminu & Rahaman, 2014; Eze, Chinedu-Eze, & Bello, 2018; Olowonisi, 2016).

Other challenges noted in the literature include: visually impaired learners being left out because of lack of appropriate content and delivery systems to aid their impairment; absence of advocacy

for an inclusiveness in the existing learning methods which equally excludes support for the blind who cannot easily communicate through mail or electronic media that require sight; and insufficient research dedicated to design and implementation challenges, particularly for the disabled (Obuekwe & Eze, 2017).

**Prospects**

Against the backdrop of broadening access and reducing the cost of higher education, the prospects of integrating e-learning into tertiary institutions in Nigeria and beyond remain robust. E-learning will be a veritable platform for human capacity both in formal and informal settings, especially at the higher education sub-sector.

One of the major prospects of e-learning is the enhancement of open and distance learning. It will facilitate the smooth operations of ODL institutions like NOUN as well as making it easier for ODL units of universities in Nigeria. This will bring to fruition, the desire of the National Universities Commission's dream of strengthening the ODL sub-sector of the countries higher education sector. This equally leads to the prospect of expanding access to education for all, irrespective of geographical location, age, sex, or disability.

Content development is one other prospect of e-learning integration. Since the online learning environment is distinct from conventional learning settings, the need to design specific learning materials suitable for such learning environments is paramount. This throws up opportunities for e-learning content developers and instructional media specialists. Training which is a sub-sector of the education and training industry will be boosted with e-learning integration into the higher education sub-sector. Another prospect of e-learning is the application of cloud computing. Several cloud-based services are already available to universities. This ranges from learner management systems and administrative aspects of the university system. E-books found in e-repositories can serve as online libraries which the university community can leverage.

In summary, the prospects of e-learning integration include that of promoting ODL, expanding the frontiers of knowledge, widening access to education and eliminating illiteracy, and education will be made much more effective (Aboderin, 2015).

**CONCLUSION AND RECOMMENDATIONS**

**Conclusion**

Among other benefits, e-learning presents itself as potentially able to mitigate the challenges of inadequate admission spaces faced by the teeming number of admission seekers annually. However, there is limited research on e-learning in the Nigerian context. The paper brings to the fore the advantages of e-learning so that Nigeria can harness the full potential of e-learning as an innovative educational strategy to increase broader access to tertiary education, to augment classroom instruction and eventually intensify students' learning outcomes in conventional and distance learning institutions respectively. It also underscores the contributions e-learning makes towards improving teaching and learning processes in tertiary institutions, as it provides opportunities for applying innovative pedagogical approaches to foster active learning. Given the challenges of integrating e-learning into Nigerian higher education institutions, the paper offers some recommendations that will potentially smoothen the process of implementation.
It is suggested that extensive research on e-learning readiness at the individual and institutional levels within the Nigerian and other developing countries contexts should be conducted, to ensure that these countries are prepared to fully benefit from e-learning.

**Recommendations**

Considering the above-mentioned benefits, the Nigerian government should deploy e-learning technology to address the current educational inadequacies within the higher education system of the country. We also recommend that the Federal Government expedite the implementation of the National ICT Policy to ensure that every HEI has access to high-speed Internet broadband. In this regard, the extension of high-speed Internet to tertiary institutions via the Galaxy Backbone should be escalated. Tertiary institutions should invest in cloud-based computing systems and open educational resources to reduce the cost of e-learning integration and implementation in their institutions.

In furtherance of its directive on the establishment of ODL units within every university in the country, the Nigerian Universities Commission should fashion a clear-cut e-learning integration strategy framework for the effective implementation of ODL and ultimately maximise the benefits derivable from open and distance learning in the country.

Additionally, for an effective integration of e-learning in Nigerian HEIs, we support the call by some researchers that:

- the management of tertiary institutions should as a matter of urgency, invest in e-learning by way of upgrading their ICT architecture and organizing more training on e-learning content development (Oketch, Njihia, & Wausi, 2014).
- tertiary institutions intending to implement e-learning should design and offer courses specifically towards addressing different learning styles instead of implementing wholesale implementation of e-learning (Obuekwe & Eze, 2017; Ouma, Awuor, & Kyambo, 2013).
- government should undertake massive in-service training and retraining through workshops, conferences, seminars and symposia (Eze, Chinedu-Eze, & Bello, 2018; Obuekwe & Eze, 2017);
- indigenous information technology professionals could be engaged and trained to develop software packages to reduce the cost of e-learning delivery to HEIs (Obuekwe & Eze, 2017);
- since twenty-first century universities are now recognized by the presence of efficient electronic learning systems (Coopasami, Knight & Pete, 2017), it behoves Nigerian universities, as a necessity to implement e-learning system for them not to be left behind.

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