1

LEARNING ASAN EDUCATIONAL TOOL FOR ENHANCING NIGERIA'S COMPETETIVE ADVANTAGE INA GLOBALISED WORLD

BY

GAADI JACOB IORHEN

B.SC POL. SCIENCE; MPA

&

IDAKWOJI SOLOMON

B.SC ED ECONOMICS

FEDERAL COLLEGE OF EDUCTION PANKSHIN

Abstract

It is an undisputed fact that education is a critical ingredient for development. This paper argues that for underdeveloped countries like Nigeria to compete effectively in a globalized world and achieve sustainable development, it is essential that they embrace Information and Communication Technology (ICT). One of the most effective ways to do this is by prioritizing ICT-based education, particularly e-learning, which serves as a lifelong learning pillar and a key driver towards building a knowledge-based society. However, the wide diversity of users engaging with e-learning platforms necessitates new approaches — both pedagogically and technically. There is a need to revisit how we measure and evaluate learning in these systems, while also identifying the inherent advantages of e-learning in comparison to traditional methods of instruction. This is not to discredit traditional education but to recognize the unique value that digital learning offers in the modern era. This paper explores these issues in depth and critically examines the current state of tertiary education in Nigeria with regard to e-learning implementation. It recommends that: Appropriate staff development programs be instituted to equip educators with the necessary ICT skills. Dissemination of best practices in e-learning should be encouraged across institutions. A symbiotic dialogue between ICT providers and educational institutions should be fostered to promote innovation and collaboration. By

taking these steps, Nigeria can strengthen its educational system and effectively harness the potential of e-learning as a tool for global integration, educational efficiency, and sustainable national development.

KEYWORDS: E-LEARNING, GLOBALISATION, NIGERIA, EDUCATION.

Introduction

Education is widely recognized as a fundamental catalyst for development; thus, any element that enhances education inherently combats underdevelopment. In today's world, the most significant influence on education is globalization. Globalization has transformed the world into a global village, enabling faster, more efficient interactions among individuals, communities, and nations. While the global movement of people, goods, money, and ideas has been ongoing for centuries, recent advancements in Information and Communication Technology (ICT) have drastically accelerated this process, fostering a more peaceful, just, and equitable form of development (Bliss, 2008).

ICT has dramatically increased access to knowledge and facilitated new forms of global interaction. Innovations in computing and telecommunications have reshaped every facet of human endeavor, making the pursuit and dissemination of information more efficient. The World Wide Web (WWW), for instance, has become a pivotal platform for global learning and communication. In underdeveloped countries like Nigeria, where education is key to improving individual and national economic conditions, the importance of ICT cannot be overstated (Bliss, 2008; Fafunwa, 2010; Charles & Onwudubelu, 2010).

One of the most profound impacts of ICT in education has been the emergence of **e-learning**, an approach that supports both formal and informal learning through electronic means.

Clarifying the Term E-Learning

E-learning encompasses various modes of technology-enhanced learning, ranging from blended learning (a mix of online and in-person education) to fully online systems. According to Ayanda et al. (2011), e-learning provides structured content and interactive platforms to expand learners' knowledge using interconnectivity tools. Fasola (2009) defines e-learning as the

delivery of educational information through computer networks for purposes such as education, training, performance, and knowledge management. It ensures accessibility of knowledge anytime and anywhere.

E-learning utilizes a wide array of media—text, audio, images, animation, and streaming video—and technologies such as video/audio tapes, satellite TV, CD-ROMs, local networks, and web-based platforms. Whether through internet-based or intranet systems, these technologies support **networked learning** and even traditional distance learning models that employ TV and radio.

Thus, e-learning serves as a comprehensive term for all technology-based educational support systems. Depending on the specific approach or method used, it may also be referred to as Technology-Enhanced Learning (TEL), Computer-Based Training (CBT), Web-Based Instruction (WBI), Internet-Based Training (IBT), or Virtual Education (Okiki, 2009; Omeruo, 2013; Wikipedia, 2014).

While the term has broader interpretations, contemporary usage often refers specifically to web-based learning (Fasola et al., 2010). According to Hedge and Hayward (2004), e-learning is an innovative approach to education that delivers interactive, well-designed, learner-centered environments accessible anytime, anywhere, using ICT and instructional design principles (Dutta, Mosley & Akhtar, 2011).

E-Learning Environments and Applications

E-learning can take place inside or outside the classroom and may be **asynchronous** (self-paced) or **synchronous** (real-time, instructor-led). It is ideal for distance learning and can also be integrated into traditional classroom instruction as part of **blended learning**.

E-learning may serve multiple purposes:

- A medium for supporting traditional subjects
- A communication tool for knowledge exchange
- A subject in itself (e.g., ICT or computer studies)
- An administrative tool such as Educational Management Information Systems (EMIS)

Despite its potential, e-learning still lacks a universal framework for deployment and interaction. The rise of **Web 2.0** tools has significantly influenced e-learning delivery through increased user interaction and social networking. Tools such as blogs, podcasts, wikis, virtual classrooms, and collaborative platforms have transformed e-learning into a participatory experience. Dalsgaard (2008) advocated for moving beyond rigid Learning Management Systems to a more open, problem-based, and collaborative educational approach.

Technological and Structural Considerations

The increasing complexity of e-learning platforms requires a **disciplined, component-based approach** to software development. Underdeveloped countries often rely on technologically advanced nations for software tools, which can limit adaptability unless proper usability is ensured.

An essential factor in e-learning is **interoperability**—the ability of systems to work seamlessly with one another. E-learning platforms should adopt standardized communication protocols that allow content reuse, data sharing, and system integration across diverse educational tools (Fasola, 2009; Awodele et al., 2009; Omeruo, 2013).

Mobile Learning and Social Integration

The rise of mobile phone usage has led to the emergence of **mobile learning (m-learning)**, expanding access to education beyond fixed locations. E-learning 2.0, a modern approach based on **computer-supported collaborative learning (CSCL)** and Web 2.0 technologies, emphasizes social learning, cultural integration, and real-time global collaboration.

Innovations such as **Classroom 2.0** and **virtual environments** (MUVE) promote global school-to-school interaction, knowledge sharing, and cross-cultural understanding.

In conclusion, e-learning has emerged as a transformative force in global education, especially for underdeveloped countries like Nigeria. To harness its full potential, investment in ICT infrastructure, staff development, and collaboration between technology providers and

educational institutions is critical. Only then can e-learning become a sustainable driver of national development in a rapidly globalizing world.

PROBLEMS IN HERENT IN E-LEARNING

E-learning has evolved significantly since technology was first integrated into education. Despite its many advantages, several inherent challenges persist, especially in the context of underdeveloped countries like Nigeria.

One major issue is **interoperability**—the ability of different e-learning systems and components to work together seamlessly. Interoperability ensures that educational content and tools can be shared across platforms using standardized protocols. It enables learners, instructors, and administrators to access and use digital resources effectively, regardless of the system or device being used (Fasola, 2009; Awodele et al., 2009; Omeruo, 2013).

To address this challenge, a framework must be established that allows content and data to be exchanged across multiple platforms connected via the internet. This includes the use of web technologies and protocols that expose content packages in a reusable and standardized format.

KEY COMPONENTS IN E-LEARNING SYSTEMS

1. Learning Management System (LMS)

An LMS serves as the backbone of e-learning. It is an integrated platform responsible for the delivery, tracking, and management of learning. It supports multiple users including learners, content developers, and administrators. The LMS can be hosted internally (within a university's firewall) or externally by an Application Service Provider (ASP).

To be effective, an LMS must support a variety of learning modes including:

- Online learning
- Instructor-led training
- Self-paced learning
- Collaborative learning

It must also manage tasks such as registration, learner tracking, scheduling, reporting, testing, and evaluation (Fasola et al., 2010).

2. Content Composition and Integration System (CCIS)

CCIS is essential for structuring and delivering pedagogically sound content. It allows:

- Instructional content to be authored, sequenced, and aggregated
- Content developers and subject-matter experts to collaborate over networks
- Development of reusable learning objects (e.g., text, images, videos, simulations)

CCIS enhances flexibility and security, making it easier to personalize content for learners. It supports rapid content development and reuse, ensuring content is organized, searchable, and adaptable to individual needs (Fasola et al., 2010).

3. The Internet and XML Technologies

The internet facilitates the integration and communication among various e-learning components. Technologies like XML (eXtensible Markup Language) and XMI (XML Metadata Interchange) play a critical role in data sharing and cross-platform compatibility. XML enables structured, internet-based data exchange, while XMI supports model sharing across systems such as UML, Java, and database applications (Fasola et al., 2010).

4. Shareable Content Object Reference Model (SCORM)

SCORM is a widely adopted standard for creating, packaging, and delivering e-learning content. It ensures that learning materials are compatible across different LMSs, making it easier to update, reuse, and manage content.

METHODS IN E-LEARNING APPLICATION

E-learning has transitioned from simple digital collaboration to a broad range of methodologies:

- **Blended Learning**: Combining face-to-face interaction with computer-based learning (Ayanda et al., 2013; Wikipedia, 2015).

- **Web-based Learning**: Learning delivered via the internet using digital technologies (Fasola et al., 2010).
- **Mobile Learning (m-Learning)**: Leveraging mobile devices like smartphones and tablets for education (Okiki, 2009).
- **E-learning 2.0**: Focused on social learning using tools like blogs, wikis, and social networks—facilitating collaboration and real-time feedback (Awodele et al., 2009).

Examples of advanced learning environments include:

- **Classroom 2.0**: Multi-user virtual environments (MUVE) that promote international collaboration between schools.
- **Computer-Supported Collaborative Learning (CSCL)**: Enhancing group-based learning through technology.

These methods are transforming how learners interact with content, peers, and instructors.

ENVIRONMENTS WHERE E-LEARNING CAN OCCUR

E-learning can take place:

- Inside or outside traditional classrooms
- Synchronously (instructor-led) or asynchronously (self-paced)
- As standalone modules or integrated into blended learning models

E-learning supports flexibility in content delivery and accommodates a wide range of educational needs. Its implementation can serve as a tool to support traditional subjects, as a communication medium, or as a standalone educational discipline like ICT. While e-learning offers vast opportunities for education in developing nations, its implementation is often hindered by technical challenges such as interoperability and lack of infrastructure. To overcome these barriers, adopting standardized systems (like SCORM), efficient LMS frameworks, and XML-based technologies is crucial. With the continuous evolution of digital tools and pedagogies, e-learning is poised to revolutionize education, provided its challenges are systematically addressed.

Nigeria's E-Learning Readiness

The world is progressing at an unprecedented pace in terms of information technology, allowing knowledge to be transferred and cross-fertilized in real time. According to Olaniyi (2006), the development and application of ICT have the potential to transform the educational sector, particularly through internet-based platforms that enhance learning and innovation.

The *Economist Intelligence Unit* (2008), as cited in Liverpool, Marut, Ndam, and Oti (2009), ranked Nigeria 62nd globally in terms of the ability of national institutions to utilize ICT to achieve their missions. This is significantly behind South Africa (ranked 39th) and Egypt (57th), indicating the urgent need for Nigeria to enhance its ICT capacity.

Currently, there is growing awareness and adoption of ICT in Nigeria, especially in teaching and learning. Several initiatives support this development, including:

- The **National Policy on Computer Education**
- The **National Policy on Information Technology**
- The establishment of the **National Information Technology Development Agency (NITDA)**

Key players in Nigeria's ICT advancement include:

- Nigeria Communications Commission (NCC)
- National Space Research and Development Agency (NASRDA)
- Private telecommunication firms like MTN, Globacom, Zain, and Etisalat (Okiki, 2009)

Despite these efforts, several challenges persist. According to Olaniyi (2006), issues such as liberalizing the telecommunications market, increasing internet service provision, reducing registration costs for the *.ng* domain, and promoting affordable access to internet cafés remain critical. Addressing these issues is essential for building a robust e-learning infrastructure.

If these facilities and proposals are effectively implemented, and institutions acquire the relevant e-learning technologies, the prospects for e-learning in Nigeria are promising. A well-developed

ICT framework will enhance access to education, improve instructional quality, and foster learner interaction (Okiki, 2009; Fasola et al., 2010; Ayanda et al., 2011).

In most Nigerian higher education institutions (HEIs), ICT infrastructure is still basic. However, once internet access and computer networks are adequately provided, digital content creation will drive ICT adoption. This readiness implies that pedagogical development will naturally follow (Liverpool et al., 2009).

Justification for E-Learning

Liverpool et al. (2009) emphasize that harnessing ICT is a strategic approach for institutions seeking affordable, flexible, and efficient learning environments. For Nigeria to be globally competitive, its educational institutions, particularly HEIs, must equip students with the skills necessary for the global digital economy.

To rapidly integrate educational technology, it is essential for Nigeria to learn from global best practices. Stakeholders must collaborate to develop locally relevant models that address the country's unique challenges.

According to EDUCAUSE (as cited in Liverpool et al., 2009), five key challenges to integrating technology in teaching include:

1. Creating active and collaborative learning environments
2. Developing 21st-century literacies (information, digital, and visual)
3. Reaching and engaging contemporary learners
4. Encouraging faculty innovation
5. Advancing the use of technology in teaching and learning

Challenges of E-Learning in Nigeria

While global challenges exist, Nigeria faces specific obstacles that hinder effective e-learning implementation:

1. High cost of hardware, particularly in underdeveloped areas

2. High import tariffs and limited price competition
3. High transmission costs across Africa
4. Internet access relies on foreign gateways
5. Shortage of skilled ICT manpower
6. Poor existing telecommunication infrastructure
7. Computer illiteracy among students
8. High costs of e-learning equipment and gadgets
9. Complexities surrounding copyright and intellectual property rights, especially in relation to the Open Educational Resources (OER) movement
10. Unstable power supply
11. Poor maintenance culture
12. Bandwidth limitations, which slow performance and hinder the use of multimedia resources

(Okiki, 2009; Liverpool et al., 2009)

Assessment in E-Learning

Assessment lies at the core of the learning experience. How learners are assessed influences their understanding, engagement, and progression. Therefore, effective assessment must be valid, reliable, and capable of informing accurate decision-making (Osuji, 2012).

Technological advancements have introduced **e-assessment** (also known as **online assessment** or **computer-based testing**), which is now a vital component of e-learning. It supports every aspect of the assessment process—from administering tests to managing results at the institutional level (JISC, 2013).

Nigerian universities adopted **post-UTME e-assessments** to address the credibility issues associated with the traditional pen-and-paper entrance exams. E-assessment minimizes exam malpractice, “sorting,” and biases in grading.

Advantages of E-Assessment:

- Reduced long-term costs
- Instant feedback to students
- Increased flexibility in location and training
- Impartiality in grading
- Scalability in handling large volumes of students
- Space-efficient data storage
- Enhanced question styles using multimedia and interactivity

Disadvantages of E-Assessment:

- High initial costs
- Unsuitability for open-ended questions
- Difficulty in developing high-quality assessment items
- Necessity for digital literacy among students

Despite its challenges, e-assessment offers a more transparent, efficient, and reliable method of evaluating students' performance compared to traditional methods.

RECOMMENDATIONS

In this regard, the role of intermediary and supervisory organizations is crucial. Such bodies are well-positioned to oversee framework development, skills acquisition, and capacity-building through structured training and resource management. Forming consortia for shared bandwidth, software licensing, and procurement of computer peripherals can yield significant benefits for the education sector (Okiki, 2009; Fasola et al., 2010; Liverpool et al., 2014). This collaborative approach not only supports institutional growth but also fosters job creation and specialization, contributing to national development within the increasingly vibrant ICT sector.

Although some scholars have previously perceived distance and online education as inferior alternatives—particularly for individuals with limited access to higher education institutions (HEIs) or for those less committed to conventional academic structures—this perception is

rapidly changing. Many educators and researchers now recognize the value of e-learning as a legitimate, flexible, and scalable mode of instruction. Modern approaches to online pedagogy acknowledge the critical role of technology in teaching and learning, especially within diverse and evolving educational strategies.

Presently, a significant number of children in Nigeria remain excluded from formal education due to factors such as financial hardship, child labour, and trafficking. However, the structured and strategic implementation of e-learning initiatives can serve as a practical tool in addressing these barriers. Regardless of the nomenclature—whether referred to as distance education, Open University programs, online learning, or virtual classrooms—e-learning holds transformative potential for national development.

CONCLUSION

E-learning presents a unique opportunity to democratize education, reaching individuals across all social strata and empowering them with knowledge and skills. Its ultimate aim is to raise awareness, foster critical thinking, and inspire participation in national development, particularly in addressing longstanding issues such as child labour and educational exclusion.

Over the past two decades, Nigerian HEIs have witnessed a sharp increase in student enrollment. However, this growth has not been matched with adequate resources. Institutions continue to rely on outdated course materials and pedagogical methods that compromise educational quality and institutional credibility. As a result, many of Nigeria's most talented students now seek academic opportunities abroad, leading to a brain drain that depletes the country's most valuable resource—its human capital.

Furthermore, as trust in HEIs declines, entrepreneurs, professionals, and potential collaborators are distancing themselves from these institutions. The consequence is a reduction in support and a growing perception that local graduates are underprepared for the workforce. This makes it imperative for Nigerian HEIs to embrace a paradigm shift towards 21st-century education models. Embracing ICT and integrating digital technologies into teaching and learning is not optional—it is a necessary strategy for survival, relevance, and growth.

The power of ICT to bridge knowledge gaps, facilitate instant access to information, and connect educators with learners across vast distances must be fully harnessed. Creating local digital content enables Nigerian education to leapfrog traditional development stages, fast-tracking progress toward global standards.

Blended e-learning models—which combine traditional and digital instructional methods—offer the most promising path forward. Such approaches will help stakeholders address systemic deficiencies, strengthen indigenous educational practices, and design a system that responds to Nigeria's unique social, economic, and cultural needs.

Digitizing education in Nigeria yields numerous benefits. It discourages the monopolistic sale of handouts, increases access to learning materials, and promotes academic transparency. Providing past exam questions along with marking schemes and solutions helps students understand assessment criteria and fosters a culture of self-evaluation and accountability. This aligns with global best practices as seen in initiatives like MIT OpenCourseWare (Okiki, 2009; Liverpool et al., 2009).

Moreover, online resources encourage staff to meet international academic benchmarks, contributing to quality assurance. The development and dissemination of open-access local digital content also facilitate collaboration between academia and the corporate sector. Consequently, learning behaviors evolve, with both staff and students becoming more self-reliant, proactive, and resourceful.

In this digital learning environment, students engage in structured collaborative projects, enhancing independence and teamwork. As these interactions increasingly occur online, both computer literacy and web skills improve rapidly. This fosters ICT compliance and prepares Nigerian graduates to thrive in a competitive, digitized global economy.

REFERENCES

Aderogba, A.A. (2009). Globalization through E-Learning, challenges and Implementation, DCSI, Vol. 8,4(2), pp 509-516. Retrieved on 25" April 201D at the 9th International World-Wide Web Conference (WWw9), Amsterdam, journal of curriculum studies. Vol. 16No. 4. 1 -10

Awodele, O., Idowu, S., Anjorin, O., Adedire, A. and Akpore, \. (2009) e-learning in Nigeria: problems and prospects. UNIZIK orient journal of education. VoL1. Enhancemnent System using a Social N Networking Approach: Extendingten.

Ayanda, D., Eludiora, S., Amassoma, D. Ashiru, M. (2011). Towards a model Being a paper in the Global Education on globalization retrieved in Nigerian Higher Institutions: An evolutionary software modeling

Bliss, S. (2008). Interdependence and globalization a global I education learning empha businessdayonline. com/2 0 1 3/04/e-learning-solutions-pro vider-sees-huge-

Byrne, R. (2002). Web-based Learning versus Traditional Management Develone Information and Knowledge Management. ISSN 2224-5758 (paper) ISSN 2

Cacdke. M. and Graef, G. (2000); development and evolution of Web-Applications using learning in Nigeria HEls: Lessons from the University of Jos ICT Maths Initiative", Life-long leaming in a networked world. E-Learning, 1:128 - 145. Available on institutions. In the use of ICT in teaching science education

Dalsgaard, C. (2008). Social software: E-learning beyond learning management system Issues in Informing Science and In fornation Technology. Volume 6, pp.269- JISC (2013). Technology enhanced NnamdiAzikiwe University Awka

Duta, A. K., Mosley, A. and Akhtar, M. M. (2011). E-learning in Higher Education: Desig OF education. Retrieved on -line on 26"April 2015.

Fasola, S. (2009). Developing a framework for interoperability for E-learning: a case stuty Proceedings of the international conterence on software Engineering and intelligent prospect-in-nigeria/).

Fasola, S. Charles, R., Onwudebelu, U. (2010). Empowering Nigerian Educational Statement by Dawema SEO of the Learning Nuggets INternation in SVsems, 2010, July 5"- 9", Ota, Nigeria. SEIS 2010 Vol L. retrieved on 26" April.

Gaedke, M. and Graef, G. (2000): Development and Evolution of Web-Applications usn the web Composition process model. International workshop on Web Engineering at Turkish Online journal of Distance Education. ISSN 1302 - 6488 vol. 13 No. 4.

Grant, A & Meadows, J. (2002). Communication Technology Update, 8th edition. Foc hbtp://www.globaleducation.cdna. edu.au/global/go/pid/1 78 on 26 March 2018

Hedge, N. and Hayward, L. (2004). Redefining roles. University e-learning contributing to http://www.forum.org.ng/system/files/IFEtpaper.pdf> accessed on 26" April 2015

Liverpool, L.S.O., Marut, M.J., Ndam,J.N. and Oti,D.A. (2009) "Towards a Model for E-Methods. Singapore Management Review, 24, 59-68. Netherlands, May 15, 2000.

Okiki, C.0. (2009). Information communication technology support for E-Learning at the No. 1&2. ISSN 0794- 9525, July 2011. A publication of faculty of education.

Omeruo, KE. (2013). E-Learning: Exploring the opportunities in e-learning to enhance on 26" April, 2015. on Nigerian Universities.onlin Netherlarnds, May l5, 2000.

Osuiu. U.S.A. (2012). The use of E-Assessment in the Nigerian Higher Education System. Press, Boston. Proceedings of the ICT Conference, Obafemi Awolowo University, Ile-Ife,

Rich, M. (2008). Literacy Debate: Online, RU Really Readingi The New York Times, July NTO Sep te m ber 200 9.

System: A framevork for interoperability for bridging e-learning platform the 9h international World-Wide Web Conference (WWw9), Amsterdam. The Web Composition Process Model. International Workshop on Web Engineern, University of lagos, Nigeria.retreived on 27" April 2015 Wikipedia, 201 5;http://www.wikipedia.com/downloads/e.learningi i/y-alert www.juC.ac,uk/eassessment.html <http://www.eurodl.org/materials/contrib/2006/christian dalsgaard.htm> accesse <http://www.nationmaster.com/country/ni/Internet.> accessed on 26" April 2015