AN EXPLORATIVE REVIEW OF E-LEARNING IMPLEMENTATION AND CHALLENGES IN NIGERIA

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Abstract

E-learning uses electronic technologies and applications to support learning and skill development. It includes web-based and computer-based learning, virtual classrooms and digital collaboration. By reducing constraints related to work schedules, age, location and access to conventional schools, e-learning can help civil servants and pre-service learners pursue their educational goals flexibly and at potentially lower cost. However, inadequate infrastructure and ICT devices, unreliable electricity, limited digital skills among facilitators, and cultural resistance may hinder implementation. Governments and education policymakers should provide institutions with adequate funding, infrastructure and qualified personnel to support e-learning. Education stakeholders should also work to improve electricity and internet access at learning centres, while facilitators should develop foundational andragogical knowledge to respond effectively to learners' needs and interests.

Keywords: E-learning; digital learning; ICT infrastructure; facilitator competence; andragogy; online education; educational access.

Introduction

Teaching and learning increasingly use digital technologies alongside conventional classroom instruction. These developments have expanded opportunities to access learning materials and participate in education beyond the classroom. E-learning can be especially useful for civil servants and other working adults who may find it difficult to attend classes regularly because of

work schedules, distance or limited access to resources. It can also help distribute educational opportunities more widely. However, its effectiveness depends on factors such as infrastructure, electricity, access to ICT devices, facilitators' digital skills and learners' readiness to use technology (Agada & Eze, 2016).

Access to quality education is important for the development of emerging economies, and e-learning can help extend learning opportunities. Barikzai et al. (2024) discuss its potential to support equitable access, particularly for marginalised communities and civil servants. In Nigeria, the National Policy on Education emphasises mass literacy and broad access to education. E-learning is one way to disseminate knowledge and information to learners in different locations. Nwankwo et al. (2016) observe that digital technologies are increasingly shaping research and education, contributing to new approaches to teaching and learning.

The Concept of E-Learning

E-learning refers to teaching and learning supported by electronic technologies. It may be delivered through the internet, an intranet, computer-based platforms or other digital media. Common forms include web-based and computer-based learning, virtual classrooms, webinars, mobile learning, video-based instruction and digital collaboration (Mahanta & Ahmed, 2022). E-learning may be delivered fully online or combined with face-to-face instruction. Aremu, Jacob and Ogedebe (2023) describe it as a software-supported learning environment that enables students to collaborate at times and places of their choice. Rilahi (2015) similarly presents e-learning as the use of internet technologies to design, deliver, manage and support learning.

E-learning can take different forms depending on whether learners and teachers are physically present and whether they communicate electronically. Akatu and David (2014) identify six arrangements: learning with physical presence but without electronic communication; learning without physical presence or electronic communication; learning without physical presence but with electronic communication; learning with virtual presence and electronic communication; learning with occasional physical presence and electronic communication; and learning with both physical presence and electronic communication.

Brief Historical Development of E-Learning

The development of e-learning in Nigeria is closely connected to the development of telecommunications. Nigeria's external telegraph service began in 1886, when a submarine cable linked Lagos with the outside world. Telephone service was introduced in government offices in Lagos in 1893 and later extended to other parts of the country. These developments provided an early foundation for communication technologies that would eventually support distance and electronic learning.

As computer and internet access expanded, Nigerian institutions began using digital resources for teaching. Early approaches included distributing lecture materials on CD-ROM for learners to use at their convenience. Internet access also expanded in the early 2000s as more service providers entered the market and broadband connections became available. These changes created new opportunities for online learning, although limited computer access and connectivity continued to constrain participation.

The National Open University of Nigeria (NOUN) is an important part of the country's distance-education history. It was established by law in 1983, but its operations were suspended in 1984. The institution was later revived when the National Open University Act was reactivated in 2002, and it has since used information and communication technologies to support flexible learning. This history reflects the broader development of open and distance education in Nigeria. NOUN's official history records the 1983 establishment, 1984 suspension and 2002 resuscitation.

Objectives of E-Learning

E-learning programmes may aim to:

1. build learners' and practitioners' confidence and skills;
2. widen access to learning for people in different occupations and circumstances;
3. provide flexible learning opportunities that can be accessed across locations and schedules;
4. reduce time away from work and, where appropriate, the need to attend face-to-face classes;
5. support professional development and improve job performance;
6. connect learning and training with knowledge management and organisational goals;

7. monitor training and learning outcomes;
8. reduce learning costs;
9. support work-based learning and wider participation; and
10. encourage innovation and help workers and organisations adapt to new technologies (Mahanta & Ahmed, 2022).

E-Learning Methodologies

E-learning uses communication technologies to deliver learning materials and support interaction between facilitators, learners and course content. Effective course design may require tools that support the planning, development and delivery of instruction online. Common interaction modes include facilitator–learner, learner–learner and learner–content interaction. These are central to online learning and are often examined in research on computer-supported collaborative learning.

E-learning interactions may be synchronous or asynchronous. **Synchronous interaction** takes place when participants are online at the same time. Examples include internet-based voice calls, video conferences, text chats, virtual classrooms and online meetings through platforms such as Microsoft Teams or Google Meet. These interactions allow participants to communicate and receive responses in real time.

Asynchronous interaction allows learners and facilitators to participate at different times and, often, from different locations. Examples include discussion forums, email, recorded lessons and bulletin boards. This mode offers greater flexibility for learners managing work or other responsibilities (Mahanta, 2022).

E-Learning Implementation Strategies

Tertiary institutions commonly use technology-supported, blended or fully online approaches. Technology-supported learning uses digital tools and software to deliver or supplement instruction. Blended learning combines face-to-face teaching with online activities, while fully online learning is delivered primarily through digital platforms. The choice of approach depends on institutional goals, available resources and learners' needs. Digital tools can support communication between facilitators and learners, course management and access to learning

resources. However, appropriate teaching methods and institutional planning must support their use (Idongesit & Kanu, 2015).

Successful e-learning requires more than selecting a platform. Institutions need clear policies, adequate funding, reliable access to electricity and the internet, appropriate ICT tools, and staff and learners with the skills to use them. They also need well-designed curricula, effective online teaching methods, technical support and opportunities for collaboration and partnership (Nwosu, 2019). Course design should include clear learning objectives, relevant content, active learning strategies and opportunities for interaction (Yahiaoui et al., 2022; Barikzai et al., 2024). Institutions planning to introduce e-learning can also learn from others' experiences and adapt successful practices to their own context.

E-Learning Implementation Challenges

Interconnected technological, institutional, pedagogical, individual and contextual challenges can constrain E-learning implementation. Infrastructure is a major concern where electricity and internet access are unreliable, bandwidth is limited, or learners lack suitable devices and software. Insufficient funding and technical support can further limit platform maintenance, course development and access to learning materials (Mahanta & Ahmed, 2022).

Staff and learner readiness also affects implementation. Facilitators may need training in digital tools and online pedagogy, while learners may require support to develop digital literacy and the self-management skills needed for online study. Limited motivation, unfamiliarity with technology and inadequate administrative support can make the transition from face-to-face instruction more difficult (Warburton, 2016).

Institutional planning and course design present further challenges. Unclear policies, weak online classroom management, poorly designed courses and limited technical assistance can disrupt teaching and learning. E-learning must also respond to learners' cultural and language contexts. Course materials and communication approaches may need to be adapted to local languages, expectations and circumstances to ensure that programmes are accessible and relevant. Barikzai et al. (2024) similarly emphasise the importance of context-sensitive approaches that consider the interaction of technological, infrastructural, pedagogical and individual factors.

Overall, effective e-learning requires coordinated planning that addresses infrastructure, funding, policy, course design, staff development and learner support. Institutions should adapt implementation strategies to local conditions so that their programmes are technically reliable, pedagogically sound and accessible to the learners they are intended to serve.

Conclusion

E-learning can help address barriers related to work schedules, age, location and access to conventional schools. It offers civil servants, pre-service learners and other groups flexible ways to pursue educational goals, sometimes at lower cost. However, its effectiveness depends on local conditions. Inadequate infrastructure, unreliable electricity, limited ICT skills among facilitators and cultural resistance can restrict access and reduce the quality of e-learning programmes.

Recommendations

1. Based on the literature reviewed, the following recommendations are made:
2. Governments and education policymakers should provide institutions planning e-learning programmes with adequate funding, infrastructure and qualified personnel.
3. Education stakeholders should work to ensure reliable electricity and internet access at e-learning centres.
4. E-learning facilitators should develop foundational andragogical knowledge and skills so they can respond effectively to learners' needs and interests.

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