ACCEPTABILITY AND UTILIZATION OF MOBILE LEARNING AS A MEANS FOR TEACHING AND LEARNING TRANSFORMATION. A CASE STUDY OF YABA COLLEGE OF TECHNOLOGY, YABA, LAGOS STATE.

Hassan S.A,[1]; Adewole H.K. Ph.D[2]; Usman, O.S.[3]; * Tijani U. M. PhD[4]; Rafiu, R.A.[5]

hasanharbourloure30@gmail.com Department of Science Laboratory Technology, Yaba College of Technology, Yaba, Lagos.

adewoleh07@gmail.com Department of Adult Education, Faculty of Education, University of Lagos, Akoka, Lagos

usmanolawalesodiq@gmail.com Registry Unit, Yaba college of Technology, Yaba, Lagos.

usman.tijani@lasu.edu.ng Department of Marketing, Lagos State University

realajadi@gmail.com Teaching Service Commission, Lagos State.

Abstract

This study investigated the acceptability and utilization of mobile learning (m-learning) as a transformative tool for teaching and learning in higher education, using Yaba College of Technology, Lagos State, as a case study. It examined the availability of mobile devices, the level of acceptance among students and lecturers, and their influence on learning outcomes. A descriptive survey design was adopted, and data were collected through a structured questionnaire administered to fifty (50) respondents comprising both students and lecturers from four departments: Science Laboratory Technology, Mass Communication, Computer Science, and Accountancy. The data were analyzed using both descriptive and inferential statistical techniques. Findings revealed that while most students owned mobile devices, institutional infrastructure to support m-learning remained inadequate. Both lecturers and students viewed mobile learning positively; however, technical limitations and high internet costs hindered full adoption. The study concluded that mobile learning promotes flexibility, self-directed learning, and instructional engagement. It recommended that higher institutions enhance digital infrastructure, provide regular training for lecturers, and adopt supportive policies to strengthen m-learning integration alongside traditional instruction.

Keywords: Mobile learning, teaching and learning transformation, higher education, technology adoption, digital pedagogy.

Introduction

Technological advancement has profoundly reshaped the educational landscape of the twenty-first century. The increasing use of mobile devices such as smartphones, tablets, and laptops has made learning more accessible, flexible, and personalized. According to Igun (2006), proficiency in computer and mobile technologies is essential for success in the contemporary world, as it enhances digital literacy, knowledge acquisition, and skill development.

In Nigeria, the conventional classroom model still dominates; however, it often falls short of meeting the dynamic learning needs of modern students. Mobile learning (m-learning) has emerged as a practical alternative and

complement to traditional pedagogy, allowing interaction and collaboration beyond physical classrooms. Rheingold (2002) and Castells et al. (2007) observed that modern mobile technologies enable multimedia communication and continuous access to educational materials, thereby facilitating independent and interactive learning experiences.

Despite its potential benefits, the adoption of mobile learning in Nigerian higher education remains limited. This is largely due to infrastructural deficiencies, inadequate training for educators, and the high cost of data services. Against this backdrop, this study investigates the acceptability and utilization of mobile learning as a means of transforming teaching and learning practices at Yaba College of Technology, Lagos State.

Concept of Mobile Learning

Mobile learning refers to the process of acquiring knowledge through portable digital devices that facilitate learning anytime and anywhere. Keegan (2006) defined it as the delivery of education and training through mobile technologies, while Ally (2004) described it as instruction enabled by handheld computing devices. Similarly, Kukulska-Hulme and Traxler (2005) noted that m-learning extends beyond the use of smartphones to include any wireless or portable device that supports educational access and interactivity. Thus, mobile learning emphasizes learner autonomy, flexibility, and digital engagement, making it a vital tool in modern education.

Framework of ICT in Education

The Information and Communication Technology (ICT) in Education framework is designed to improve teaching, learning, research, and administration in educational institutions. Its key objectives include the following:

i. To assist in the teaching–learning process.
ii. To develop skills in problem-solving, critical thinking, and innovation.
iii. To promote lifelong learning and enhance knowledge.
iv. To augment various modes of teaching and learning to suit diverse learner needs.
v. To promote research and skills development among educators and scientists.
vi. To make the administration of education more effective and efficient.
vii. To guarantee universal access to information.
viii. To widen access to education and increase the range of instructional options for anytime, anywhere, any-pace, and any-path learning.
ix. To promote the commercialization of indigenous inventions, products, and services related to ICT in education.

Initiatives and Strategies of Mobile Learning and ICT

- National initiatives and strategies in ICT and mobile learning focus on promoting equitable access, capacity building, and infrastructural development. These initiatives include:
- Formulation of the National Policy on ICT in Education, serving as a framework for developing and deploying ICT in the Nigerian education system.
- Provision of requisite ICT infrastructure and services, such as broadband connectivity, computer laboratories, and access to digital devices for both teachers and students.
- Implementation of schemes aimed at providing computers at subsidized rates to government staff across all levels of education. This includes the establishment of ICT laboratories in schools and centers of excellence in tertiary institutions, as well as the deployment of e-learning platforms to enhance distance and open learning opportunities.

- Expansion of ICT schemes that provide computers and internet-enabled tools for educational use, while increasing the number of ICT laboratories and open and distance learning centers across all levels of education.
- Examples of these initiatives include:
- The National Open University of Nigeria (NOUN), which operates well-organized open and distance learning programs for hundreds of thousands of students nationwide.
- The National Teachers' Institute (NTI), which facilitates distance education programs for teachers across the country.
- The Nigerian Universities Electronic Teaching and Learning (NUETAL) platform, operational in twelve federal and state universities, providing ICT-enabled interactive teaching and learning environments.
- E-learning programs at the primary and secondary levels in partnership with private investors.
- Literacy by radio programs, providing access to education for illiterate and semi-literate populations, including nomads and migrant groups, regardless of gender, location, or cultural background.
- Mobile learning initiatives at the tertiary level, offering flexible distance learning opportunities to thousands of learners across Nigeria.
- Mobile learning is being implemented at the tertiary education level. The Education Management Information System (EMIS) and Local Government Education Management Information System (LGEMIS) are used for the collection, storage, integration, processing, maintenance, and dissemination of educational data.
- Technology utilization also extends to the areas of item banking, registration management, verification, validation, admission processing, and backend automation for national examinations such as those conducted by the Joint Admissions and Matriculation Board (JAMB), National Examinations Council (NECO), and National Business and Technical Examinations Board (NABTEB).

Integration of Mobile Devices in Learning

Mobile devices are increasingly becoming integral to the learning process. They are generally more affordable than other ICT tools such as laptops and desktop computers, making them more accessible to students. As a result, mobile devices play a vital role in enhancing learning across various dimensions.

Key areas in which mobile devices contribute to learning include:

- **Student–teacher interaction:** Mobile phones can be effectively used to facilitate communication and collaboration among students and between students and their teachers.
- **Flexible learning:** Educational activities can be carried out through mobile devices at any time and in any location, promoting continuous and flexible learning.
- **Resource sharing:** Students can easily exchange assignments, documents, and study materials with peers and instructors using mobile applications.
- **Active engagement:** Mobile devices encourage learner participation and interaction in the learning process.
- **Convenience:** Mobile phones are lightweight, portable, and easier to handle in classrooms compared to laptops or desktop computers.

Mobile Learning and Educational Transformation

Mobile learning (m-learning) has significantly influenced the transformation of teaching and learning practices. The primary change it introduces lies in the flexibility and personalization of instructional delivery, making learning more accessible, student-centered, and engaging.

Some major advantages of mobile learning include:

- **Personalized learning:** M-learning enables truly individualized learning experiences, allowing specific notes, PDFs, and assignments to be sent directly to each learner.
- **Learner autonomy:** Students can choose content based on their preferences, thereby promoting self-directed learning.
- **Flexibility and collaboration:** Mobile devices allow students to study during unscheduled hours and engage in collaborative tasks with peers.
- **Customized learning opportunities:** M-learning supports learning according to individual learners' needs, pace, and goals.
- **Access to online learning platforms:** Students can interact with teachers through platforms such as Zoom, Google Meet, and Hangouts, fostering virtual classroom participation.
- **Ease of use:** Mobile learning offers e-learning opportunities for individuals with limited ICT proficiency, as mobile phones are simpler to operate than many other devices.
- **Blended learning enhancement:** M-learning complements classroom instruction by integrating face-to-face and online methodologies, thereby maximizing instructional effectiveness.
- **Skill development:** Mobile learning promotes problem-solving, communication, and creativity skills.

Learner motivation: The personal ownership of handheld devices increases students' enthusiasm, commitment, and willingness to engage in learning activities.

Challenges of Mobile Learning

Despite its many benefits, mobile learning faces several significant challenges:

- Limited screen size and memory: Mobile devices generally have smaller screens and lower memory capacities compared to laptops or desktop computers, which can limit functionality and user experience.
- Affordability and access: Although mobile phones are less expensive than personal computers, many students from rural or low-income backgrounds still find it difficult to afford them. Thus, accessibility remains a major barrier to mobile learning.
- Distraction and misuse: Internet-connected mobile devices can easily distract students or be misused for non-academic purposes, which may negatively affect academic performance.
- Poor network connectivity: Unstable or inadequate internet access, especially in rural areas, significantly impedes effective mobile learning.
- Cultural and institutional resistance: In some institutions, mobile learning lacks cultural or administrative support, as traditional teaching methods remain more socially accepted. Consequently, the use of mobile phones in classrooms is still prohibited in many schools and colleges.

Despite these challenges, the integration of ICT in education continues to grow rapidly, gradually shifting preference from traditional approaches to digital and blended learning models.

Theoretical Foundations of Mobile Learning

Four key theories provide the theoretical framework for understanding mobile learning:

1. Hentagogy (Hase & Kenyon, 2000): This theory encourages self-determined learning, where learners take responsibility for their learning processes, including the pace and method. It aligns with m-learning as it promotes autonomy and flexibility
2. Complexity Theory (Morrison, 2006): This theory views learning as a dynamic system shaped by the interconnected relationships among students, teachers, and technology, all influencing each other within complex educational environments.
3. Connectivism (Siemens, 2005): Connectivism posits that knowledge exists within networks and that learning involves identifying, connecting, and navigating through these networks. Mobile learning supports this by linking learners to vast online resources and communities.
4. Rhizomatic Learning (Cormier, 2008): This model suggests that learning is non-linear and evolves through exploration, collaboration, and interaction. It aligns closely with mobile learning, where knowledge develops organically through digital engagement.

Purpose of the Study

The purpose of the study is to investigate the means by which mobile technology and its varying tools can be infused into teaching and learning in order to see how helpful they can be in aiding the traditional means of teaching-learning and if there is need to do an appraisal of the use and its effectiveness.

Specific Objectives of the Study

The specific objectives of this study are to:

1. Investigate the availability of mobile technologies/devices for teaching and learning.
2. Assess the acceptability of mobile technology in the teaching and learning process.
3. Examine the effect of mobile technology on students' learning outcomes.

Research Questions

This study seeks to provide answers to the following research questions:

1. To what extent are mobile technologies/devices available for teaching and learning?
2. To what extent is mobile technology acceptable in the teaching and learning process?
3. What is the effect of mobile technology on students' learning outcomes?

Table 7 show that 39 persons agreed that every students have access to smart mobile device and they are 78 percent of the sample size, while 7 respondents disagreed and they represent 14 percent of the sample size and 4 persons remained neutral.

Research Design

The study utilized a descriptive survey design to collect data from a selected sample of the population using a structured questionnaire.

Population and Sample

The study population consisted of approximately 500 students and lecturers drawn from four departments: Science Laboratory Technology, Mass Communication, Computer Science, and Accountancy. A total of 50 respondents were randomly selected, comprising 40 students and 10 lecturers.

Instrumentation and Data Collection

Data were collected using a structured questionnaire divided into two sections: **Section A** covered demographic information, while **Section B** focused on opinion-based items. Section B employed a

modified five-point Likert scale ranging from *Strongly Agree* to *Strongly Disagree*. The questionnaires were administered in person to ensure a high response rate.

Data Anaylsis

This paper employed descriptive statistics to analyse the responses on: availability and utilization of mobile devices

Results and Discussion

Availability and Utilization of Mobile Devices

Table 1: Every student has access to smart mobile device

Items	Frequency	Percent
Strongly Agree	21	42.0
Agree	18	36.0
Undecided	4	8.0
Strongly Disagree	4	8.0
Disagree	3	6.0
Total	50	100.0

Table 2: Some mobile technology is readily available in the school e.g Wifi

Items	Frequency	Percent
Strongly Agree	5	10.0
Agree	15	30.0
Undecided	5	10.0
Strongly Disagree	17	34.0
Disagree	8	16.0
Total	50	100.0

Findings indicated that 78% of respondents had access to smartphones or similar devices, confirming high availability. However, only 40% reported consistent access to Wi-Fi or digital learning infrastructure within the institution. This aligns with Attewell's (2005) assertion that availability does not guarantee effective utilization without institutional support.

Acceptability of Mobile Learning

Table 3: Lecturers do always compliment their lessons with the use of mobile learning services

Items	Frequency	Percent
Strongly Agree	10	20.0
Agree	20	40.0
Undecided	4	8.0
Strongly Disagree	6	12.0
Disagree	10	20.0
Total	50	100.0

The study revealed strong positive attitudes toward m-learning: 78% of students and 60% of lecturers supported its integration. However, about half of the lecturers expressed difficulty in using mobile technologies due to insufficient technical training. This supports Kukulska-Hulme and Traxler's (2005) findings that teacher readiness is critical for successful implementation.

Table 4: Some lecturers do restrain from using the mobile technology due to lack of technical know-how

Items	Frequency	Percent
Strongly Agree	9	18.0
Agree	18	36.0
Undecided	12	24.0
Strongly Disagree	2	4.0
Disagree	9	18.0
Total	50	100.0

Impact on Learning Outcomes

Table 5: Learning through mobile technology improves the progress of students

Items	Frequency	Percent
Strongly Agree	16	32.0
Agree	23	46.0
Undecided	6	12.0
Strongly Disagree	2	4.0
Disagree	3	6.0
Total	50	100.0

Respondents agreed that mobile learning enhances students' participation, concentration, and independent study habits. It was also found to improve assimilation and overall academic engagement. These results affirm Siemens' (2005) connectivist perspective, which sees learning as a process of forming connections through technology.

Conclusion

The study concludes that mobile learning is widely accepted and increasingly utilized among students and lecturers at Yaba College of Technology. Although infrastructural limitations persist, the use of mobile technologies promotes student-centered learning, flexibility, and improved academic performance. The findings underscore the potential of mobile learning as a transformative tool in higher education when adequately supported by infrastructure, policy, and digital competence.

Recommendations

Based on the findings and conclusions of the study, the following recommendations are proposed:

i. Institutions should ensure stable internet connectivity and provide access to Learning Management Systems (LMS) to enhance mobile learning implementation.
ii. Regular digital literacy and professional development training should be organized for both lecturers and students to strengthen their competence in mobile-assisted teaching and learning.
iii. Educational policymakers should promote and institutionalize mobile learning integration within the curriculum through clear guidelines and frameworks.
iv. Strategic partnerships should be established among educational institutions, telecommunications providers, and government agencies to reduce data costs and improve accessibility.
v. Seminars, workshops, and awareness campaigns should be conducted to dispel misconceptions about mobile learning and highlight its benefits in fostering innovation and engagement.

References

Ally, M. (2004). Using learning theories to design instruction for mobile learning devices. Learning and Skills Development Agency.

Attewell, J. (2005). From research and development to mobile learning: Tools for education and training providers. In Proceedings of the mLearn Conference.

Castells, M., Fernandez-Ardevol, M., Qiu, J. L., & Sey, A. (2007). Mobile communication and society: A global perspective. MIT Press.

Cormier, D. (2008). Rhizomatic education: Community as curriculum. http://davecormier.com

Doolittle, P. E., & Mariano, G. J. (2008). Working memory capacity and mobile multimedia learning environments. *Journal of Educational Multimedia and Hypermedia*, 17(4), 511–530.

Hase, S., & Kenyon, C. (2000). *From andragogy to heutagogy.* UltiBASE.

Igun, S. E. (2006). Human capital for Nigerian libraries in the 21st century. *Education for Information*, 24(1), 25–33.

Keegan, D. (2006). *Mobile learning: A practical guide.* Ericsson Press.

Kalpana C. (2020) Mobile Learning in Education: Advantages and Challlenges. *International Journal of Management 11(11)* 1427-1430.

Kukulska-Hulme, A., & Traxler, J. (2005). *Mobile learning: A handbook for educators and trainers.* Routledge.

Morrison, K. (2006). *Complexity theory and education.* APERA Conference, Hong Kong.

National Policy on Information and Communication in Education (2013) Rheingold, H. (2002). *Smart mobs: The next social revolution.* Perseus Publishing.

Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning*, 2(1), 1-10.