PERCEPTION OF UNDERGRADUATE STUDENTS ON THE USE OF

MOBILE LEARNING IN UNIVERSITIES IN NIGER STATE

BY

LAWAL Abdulrasaq

2016/1/63680TI

THE DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION,
SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION,
FEDERAL UNIVERSITY OF TECHNOLOGY MINNA, NIGER STATE

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A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION, SCHOOL OF SCIENCE AND TECHNOLOGY MINNA, IN PARTIAL FULFILLMENT FOR THE AWARD OF BACHELOR OF TECHNOLOGY (B.TECH) IN INDUSTRIAL AND TECHNOLOGY EDUCATION

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DECLARATION

I Lawal Abdulrasaq, Matric Number 2016/1/63680TI an undergraduate of the department of the Industrial and Technology Education, certify that the work embodied in this project is original and has not been submitted in parts or full for any other degree or diploma of this or any other institution

Lawal Abdulrasaq   _____

2016/1/63680TI   Signature/Date

CERTIFICATION

This project has been read and approved as meeting the requirement of the award of B.Tech degree in Industrial and Technology Education, School of Science and Technology Education, Federal University of Technology Minna.

Mr. Yisa Stephen Ndalazhi   _____

Project Supervisor   Signature/Date

Dr. T. M Saba   _____

Head of Department   Signature/Date

Prof. Hassaan Bello   _____

External Supervisor   Signature/Date

DEDICATION

This project is wholly dedicated to Almighty Allah who endowed me with His divine guidance, Drotection, knowledge, wisdom, understanding and success in my course in whom I trust for all my life endeavour's and to my wonderful and beloved parents Mr K.A Lawal and Mrs R.A Lawal.

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ABSTRACT

This study investigated the perception of undergraduate students on the use of mobile learning, since the use of mobile learning is a new phenomenon in some institutions, there is an urgent need to acquire the impact on learning process. However, undergraduate students were primary focus of the study because it is believed that they are all familiar with Mobile devices and their uses. Three research questions were formulated to guide this study. A total of 250 respondents which consist of 150 300level students of Industrial and Technology Education Department and 100 300level students of Physics department of Federal University of Technology Minna were used as the population for the study. A questionnaire was developed and validated by three lecturers from industrial and technology education department. Mean and standard deviation where the satisfaction took used to analyze the data collected for the study. while t-test was employed to test the hypotheses at 0.05 level of significance. However, recommendation was made that, since the world is now a global village and digital world, the use of mobile learning should be implemented in higher institution for learning. More importantly, students should be kept abreast of creativity and innovation in education.

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1.1 Background of The Study

Technology-driven innovations are currently changing the previous learning methods or strategies, creating numerous new learning aspects for teachers and learners, Okoye et al. (2021), and Ontiveros and Pazos, (2013). The technology development has provided means of teaching and learning strategies using devices such as computer, iPad, projector and mobile phones. Mobile phones or smart devices have taken over our entire life, from entertainment and general communication to the way learning is done, according to Ahmad (2020), Vázquez, and Sevillano-Garca (2018). Mobile phone devices have facilitated learning in higher institutions which are significantly changing the teaching and learning, especially for digital natives. According to Apuke and Iyendo (2018), research found that 86% of college and university students currently have access to at least one smart device, with nearly half of them using their personal mobile devices to complete their daily academic work.

Further, a recent report by Mpungose, (2020), and Sharma et al. (2016) also state that hand-held devices, such as tablets and smartphone devices, are currently the most favored gadgets used in accessing the internet and comprising of more than 50% of all browsing activity globally. These particular statistics support the beginning of a remarkable trend as regards the use of mobile learning gadgets within higher institutions. As noted by the "United Nations Educational, Scientific and Cultural Organization" [UNESCO] (2015), these devices aid in terms of educational content delivery, particularly by utilizing mobile technology, including tablets and smartphone devices, which are acquiring increasing popularity within the higher education sector.

Indeed, their increasing use has recently become a major subject of numerous discussions within higher learning institutions.

Kankam, (2020) in his study review that these mobile learning devices which include smartphone and tablet can be used for both teaching and learning in urban and rural areas. The impact of mobile learning devices on the output of the students in higher education institutions can never be underestimated. Mobile learning devices have enabled students to interact and network on a wide range of issues. They use mobile learning devices as an avenue for the exchange of learning experiences, knowledge, academic opportunities, and even sharing research findings (Chand & Arora, 2008; Kankam, 2020; Sharma et al., 2016). Increased access to the internet has made it much easier for both the teachers and students to join various mobile learning devices like smartphones, tablets, laptops, and digital notebooks which give them access to different material online, various scholars assign reasons to justify the use of mobile learning devices for academic purposes. The transformative power of mobile learning devices allows students and researchers within academia to have exposure to the rest of the world (Kankam, 2020; Peters, 2007). This will promote networking, sharing of expertise, and attracting new audiences (Criollo et al., 2018; Kankam, 2020).

The internet is widely utilized today because of its significant contribution to globalization, which has an impact on a variety of circumstances from interpersonal communication to politics and economic development. The internet basically offers a greater range for data searching and resource sharing compared to other smaller networks; it is just the connecting of numerous computers, mobile devices, and servers with the objective of sharing resources. (Liu, 2005).

Knowledge is acquired by methods like reading, listening, and observation in mobile learning. Through the use of uploaded books, tutorial videos, study materials, and exam

materials, students can increase their ability to learn via the internet using the mobile learning (M-learning) system, which is a web-based learning environment. The availability of modern technology makes it simpler for students to get such materials anywhere and at any time, which will unintentionally aid to improve students' learning process and study skills, (Mak, 2011)

The main objective of the Mobile Learning system is to help reduce study problems due to students' absenteeism from lectures for serious reasons or non-conducive learning environment due to overcrowding during lectures and improper impartation of required knowledge on the part of the lecturers to the students.

According to Smith (2009), teaching is one of the professionals that present the greatest challenges. Most students and academics appear to embrace mobile technology at the higher education level, where its use in teaching and learning is widespread. This embrace extends to a variety of other goals as well. Currently, numerous iPhone, iPad, and other smart devices of the same type are fitted with a variety of functionality and unique characteristics that can be used for delivering educational information,

In the light of higher education, majority of university students nowadays belong to the generation (also called Alpha generation). This is a generation of people typically perceived as steadily more familiar with digital and electronic technology. For this reason, Mobile learning is now mostly use in some countries. We are living in an age of "personal and technical mobility" where mobile devices and other mobile phone are carried everywhere. According to Lavin and Fernandez (2014), mobile learning is enabled by integrating various hardware and software technologies into multimedia application, facilitating the communication of educational content in a number of different formats for university students. In addition, Gikas and Grant (2013), cite a

survey conducted by the Education Center for Applied Research (ECAR) (2019), which suggests that students are driving the adoption of mobile learning. in light of this, the researcher wishes to carry out the study to determine the perception of undergraduate student on the use of Mobile learning in Universities in Niger State.

1.2 Statement of The Problem

Mobile learning (M-learning) is a method of using mobile devices to access educational materials. With this approach, users can access content whenever and wherever it suits them, empowering learning at the moment of need. In order to make course materials accessible to students wherever they are and to develop new types of learning experiences that encourage students with both course material and the outside world, mobile learning aims to take advantage of the pervasiveness and special capabilities of mobile devices.

It has been reviewed that M-learning provides us with more advantages when properly utilized in teaching and learning. Such advantages are, time efficient, increased knowledge retention, accessibility, and removing the formality. It allows learner to have quick access to knowledge and effortlessly, picking up their studies whenever it is most convenient for them. M-learning compared to traditional teaching methods can increase knowledge retention by 55%, (Liu, 2005). This is so because information for mobile learning frequently consists of smaller, more manageable portions, such as video and gratification. Information retention rises by 20% when short-form content is used. (Liu, 2005). One of the significant benefits of M-learning is accessibility. M-learning courses are housed online, so students can access their courses from anywhere in the world.

There are also few challenges that has been reviewed on mobile learning, some of the challenges are, small screen of the device, data privacy and security and Content compatibility. Small screen can cause eyes pain this is one of the challenges of mobile

learning, the continuous reading of text on small screens can hurt the eyes. However, you need not worry too much about this as there are solutions to address this issue. Compatibility of your content is among the challenges with mobile learning. Most times, content created for eLearning purposes doesn't always work on mobile devices. In this case, you'll have to refurbish or recreate them so they can be accessed by mobile learner, this is mostly time and effort demanding.

The benefits of M-learning have outsmarted its challenges, more over the world has turned to smart village where everything is done digital. Therefore, we cannot as well fold our hands waiting and expecting positive changes without moving with the train. In addition, some developed countries were using M-learning at different level of the education which has provided more positive impact. Therefore, there is need for the researcher to carry out the study on the perception of undergraduate student on the use of Mobile learning in Universities in Niger State.

1.3 Purpose of The Study

The aim of the study was to identify the perception of undergraduate students on the use of mobile learning in Universities in Niger State. Specifically, the study is to determine:

1. The perception of the undergraduate students on the use of mobile learning in Universities in Niger State.

2. The problems associated with the use of mobile learning in Universities in Niger State.

3. The types of mobile learning devices used by undergraduate students for academic purpose in Universities in Niger State.

1.4 Significance of The Study

The study will be of benefit to the following: The National Universities Commission (NUC), the Lecturers and the Students.

The study will be of benefit to NUC if published. NUC is the body that direct the activities of the universities in Nigeria. The study will informed them about the perception of the students on the uses of M-learning in Universities in Nigeria. It will informed them and guide them if M-learning should be included in Universities in Nigeria.

The study will be of benefit to the lecturers in University in Niger State, when NUC mandate the Universities to be using M-learning for teaching. It will help to inform the lectures to know the types of M-learning devices to used and be aware of the challenges or problems associating with M-learning in Universities in Niger State.

It will now be of benefit to the students in Universities in Niger State when the Lecturers adopt it as a means of teaching in Universities in Niger State. The students will be full aware of different types of M-learning devices, the challenges or problems of M-learning.

1.5 Scope and Limitation of the Study

The study's explicit goal was to ascertain the perception of undergraduate students on the use of mobile learning in Universities in Niger State, and the problem associated with mobile learning, it will also be limited to the types of mobile learning devices used by the underground students for academic purpose in Universities in Niger State. While the study will also be limited to 300level Industrial and Technology Education students and 300level students in Physics department in Federal University of Technology Minna.

1.6 Research Questions

In finding answers to the perception of undergraduate student on the use of Mobile learning, the following research questions were derived from the literature review:

1. What are the perception of undergraduate student on the use of M-learning in University in Niger State?

2. What are the problems associated with the use of mobile learning in Universities in Niger State?

3. What are the types of mobile learning devices used by undergraduate students for academic purpose in Universities in Niger State?

1.7 Hypothesis

Ho1: There is no significant difference in the mean response of 300level Industrial and Technology Education students and 300level Physics students on the perception of undergraduate students on the uses of mobile learning in Universities in Niger state.

Ho2: There is no significant difference on the problems associated with the use of mobile learning in Universities in Niger State.

Ho3: There is no significant difference on the type of mobile devices use by undergraduate students for academic purpose in Universities in Niger State.

CHAPTER TWO

LITERATURE REVIEW

2.0   Theoretical Framework

2.1   Theoretical Perspectives of Mobile Learning

Social constructivist is one of the several pedagogical principles that underpin the concept of mobile learning. It is an educational theory that proposes that knowledge is constructed by individuals based on their own prior experiences in a particular context (Honebein, Duffy, & Fishman, 1993). According to (Mifsud, 2003), whose work is similar to a prior work by (Soloway, Norris, Blumenfeld, Fishman, & Marx, 2001), flexible access to handheld technology such as mobile device will provide the tools to help learners construct knowledge throughout their daily activities, thereby making this technology an integral part of daily learning. A simulation game which enables learning to take place in a simulation environment was developed by (Colella, 2000). Students participating in the game become agents in the simulation. They gathered evidence, define the problem at hand and set and test hypotheses about the rules of the simulation environment. They learned from experience and develop solutions to the problems they encountered (Colella, 2000).

Situated learning focuses on activities that promote learning within an authentic context and culture (Herrington & Herrington, 2007). A research work conducted by (Rogers, et al., 2002) based on situated learning theory created an authentic ambient wood environment which enabled children using Personal Digital Assistant (PDA) and probing device to learn, discover, reflect and experiment in the environment. Collaborative learning is a learning situation, which involves two or more people that learn something together (Dillenbourg, 1999). A Mobile Computer Supported

Collaborative Learning (MCSCL) system based on collaborative learning theory to support student collaboration was developed by (Cortez, et al., 2004). The MCSCL provided an enabling collaborative class environment that help students to participate in a task (Cortez, et al., 2004).

An activity involves the relationship between a subject or an actor and the object mediated by a tool. A tool is used in the transformation process to transform the object into an outcome (Kuutti, 1996). Furthermore, rules, community and division of labour are included in activity theory. Mobile technologies are perceived as mediating tools that support mobile learning activities (Uden, 2007). An m-learning system for learners' knowledge management was developed by (Liaw, Hatala, & Huang, 2010). The developed system that was based on activity theory enables learners to search, retrieve, share, manage and create their own knowledge (Liaw, Hatala, & Huang, 2010)

2.1.1 Theory of Mobile Learning

This research employs the use of Mobile Learning Theoy.Dede identifiedfour areas where scholars, practitioners, vendors, and policy makers convergein discussions, implementation, and support of educational technologies:devices and infrastructure, safety and privacy, digital assets and assessments,and human capital (Dede & Bjerede, 2011). Dede proposed alternative modelsof educational improvement that can be supported by mobile technologies. Hedescribed evolutionary change as how mobile dev ices are used within andoutside classroom enable a ubiquitous-computing environment.Revolutionary change focuses on mobile broadband beyond used to expandhuman support beyond the classroom and school day, and thus invent newstructures for formal education. Disruptive change involves mobile devicesbeing part of a strategy for eliminating inflexible, traditional methods ofeducation.New forms

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of digital media are beginning to influence children and theirfamilies. Three case studies on the deployment of smart mobile devices andapplications revealed some key findings for educators (Chong & Shuler, 2010).Many families engage in a pass-back phenomenon, where an adult's mobile device is given to a young child to temporarily interact with and beentertained. It was reported that while kids claimed to only play games,parents believed that children did a variety of activities on mobile devicesbeyond games. The children in the studies particularly liked the iPhone andiPod touch devices because of the touch screen and direct manipulation (Chan& Black, 2006), and overall children were able to use the devices without anyguidance from their parents. Chong and Shuler (2010) stated that parents play an important role in shaping children's experiences with mobile devices, and this role extends to teachers and schools as more mobile devices areintegrated into school settings. The researchers concluded that mobile devicescan be used to supplement learning experiences, but ultimately all the choicesmust be made towards always surrounding children with high quality educational resources.

2.2   Conceptual Framework

2.2.1   Concept of University

A university is a higher education institution that typically consists of a college of liberal arts and sciences, graduate and professional schools, and has the power to award degrees in a range of subject areas. A university is different from a college in that it is often bigger, offers graduate and professional degrees in addition to undergraduate degrees, and has a wider curriculum. Universities existed in several regions of Asia and Africa in the past, yet they did not become common in the West until the Middle Ages in Europe. (Naismith, 2004).

The university of Naples Federico II was founded by emperor of the Holy Roman Empire Frederick II on 5 June 1224. It is the world's oldest state-supported institution of higher education and research, it was the first to be established under imperial authority, while the University of Toulouse, founded by Pope Gregory IX (1229), was the first to be established by papal decree. These universities were free to govern themselves, provided they taught neither atheism nor heresy. Students and masters together elected their own rectors (presidents). As the price of independence, however, universities had to finance themselves. So, teachers charged fees, and, to assure themselves of a livelihood, they had to please their students. These early universities had no permanent buildings and little corporate property, and they were subject to the loss of dissatisfied students and masters who could migrate to anothe1209r city and establish a place of study there. The history of the University of Cambridge began in when a number of disaffected students moved there from Oxford, and 20 years later Oxford profited by a migration of students from the University of Paris.

2.2.2   Undergraduate Student

Undergraduate Student: A college or university student who is not a graduate student is known as an undergraduate. You can enroll in undergraduate programs after high school. Undergraduates are students at universities and colleges who have already been accepted after graduating from high school but have not yet earned their degrees. An undergraduate student is one who is pursuing a bachelor's degree, also referred to as an undergraduate degree. They are distinct from postgraduate students because they have typically already received a bachelor's degree in a related field and are studying their subject at a level above undergraduate studies, Undergraduate students will be studying a wide variety of disciplines, essentially beginning the first level of university study in virtually any area that is studied or taught at the institution. The amount of independent

research that students are expected to conduct is a significant distinction between undergraduate and graduate coursework. At the postgraduate level, some students will be doing masters courses that comprise entirely of research, known as (Masters of Research), without any taught element at all. Whereas an undergraduate course will have a large element of taught modules or courses and less individual research. (Criollo-et al, 2018; Kankam, 2020).

2.2.3 Concept of Mobile Learning (M-Learning)

Mobile learning, also known as M-learning, is a new way to access learning content using mobile devices. It's possible to learn whenever and wherever you want, as long as you have a modern mobile device connected to the Internet.

At a glance, Mobile Learning refers to the ability to "learn on-the-go" as occasioned by the increasing penetration of mobile phones, personal digital assistants (PDAs) and Smartphones (Muyinda, Lubega & Lynch, 2010). A learner can decide to utilize a learning medium and content based on personal requirements, interests, and constraints. Since mobile devices are truly portable communication media, the availability of learning content through mobile medium will definitely expedite the learning process.

Mobile Learning using handheld devices draws on the theory and practice of pedagogies used in technology enhanced learning (Traxler, 2009). The term covers the personalized, connected, and interactive use of handheld computers in classrooms and in collaborative learning. Collaborative learning, or working in groups, is a great way to involve students who require social engagement during the learning process. Peers can mentor one another while building community and social skills (Seehorn, 2013).

Much of the current research on the effectiveness of mobile learning has established that it is effective and can compliment various models of instruction delivery (Muyinda et

al, 2010; Wishart, 2009). So far, these forms of utilization has focused on short-term small-scale pilots and trials in the developed countries of Europe, North America, and the Pacific Rim (Traxler, 2009), but that is not the case in developing countries where growth in computer-aided learning (CAL) deployment is characterized by low incomes and the inability to afford expensive PCs and Internet access (Mockus, Dawson, Edel-Malizia, Shaffer, Sung An, & Swaggerty, 2011).

This framework highlights how M-learning can be used to enhance the learning process through mobile usability, wireless technology and e-learning through the use of powerful mobile devices such as mobile phones, smart phones, tablets or any other handheld devices. Also, the framework focused on the learners and social communities to support this framework Mobile devices such as Notebook, Mobile Tablet, iPad, iPod are referred to as mobile usability. Cultural, economic and environmental factors are also included in the framework. (Pazon, 2013).

In the same year, Awder Ahmed and Mazen Ghareb have introduced a Mobile Learning Framework for students in higher institutions. The framework proposed by the authors is much more detailed and includes a much larger set of components grouped into three aspects: technical, cultural, theoretical. The first aspect is the hardware and software needed to deliver mobile learning. The second one is referred to the pedagogy training (learning contents, formal and informal learning). The theoretical aspect covers each of Behaviorists learning, Constructive learning, Collaborative learning, and preparing educators effectively. The aim of this framework is to motivate the students to use M-learning. Then each of Technical, Cultural, Theoretical aspects and social media inside the proposed framework has been represented as a key success to motivate the students to use M-learning. But one of the most important components to the success of mobile learning is the theoretical aspect, which includes students' motivation and their willing

to be active participants in the learning process. The theoretical aspect is also intertwined with the cultural one, which the authors associate with the training of teachers and support to students.

It's no secret that more and more people today access the Internet from a smartphone. Desktop and laptop computers are still popular, and instead of choosing just one device, it has become the norm to own multiple devices and use them for different activities.

2.2.4 M-Learning Technologies

Effective m-learning is more than simply repackaging existing e-learning (Quesinberry, 2011). It involves carefully selecting m-learning objects (MLO) which take cognizance of mobile device limitations (Muyinda et al, 2010). Such limitations include low resolution, tiny screens and keyboard, low bandwidth and power. This implies that technologies that enhance m-learning must include appropriate mobile devices, mobile software and mobile operating system.

Mobile Devices: The m-learning ecosystem is made up a wide variety of devices connected via different kinds of networks (Mockus et al,2011). Common devices include camera phones, smartphones, Personal Digital Assistants (PDAs), netbooks, tablet PCs and portable media players.

Almost all devices suitable for m-learning has capacity to make phone calls, send and receive text messages (SMS), connect to the internet through GPRS or cloud (wireless) services, and play multimedia files such as pictures, videos and mp3 audio. New generation mobile devices such as smartphones, PDAs and tablet PCs have an endless range of capacity, considering the suites of applications available from App Stores.

Mobile Software: Brandon (2011) observed that mobile devices are not only convenient and always with us, but they are the focus of the convergence of capability. Each device offers a combination of applications to support documents formatting, audio, e-mail, multimedia message service (MMS), social interaction and the World Wide Web.

With the design of the Java 2 Micro Edition (J2ME) by Sun Microsystems, software capability on mobile devices became a thing of convenience. J2ME is an Application Programming Interface (API) to develop software for small and resource constrained devices (Kumari et al, 2009). J2ME provides a standard Java run time environment for mobile devices which hitherto has no platform for launching applications. Hence, smaller hand held devices can now power sophisticated software such as web browsers (Opera Mini, UC Web, QQ, etc), E-book readers, dictionaries, PDF readers, e-mail apps (yahoomail, gmail, etc.), and social networking apps (facebook, 2go, Mxit, WhatsApp etc).

Currently, a good mobile device in hand means the world in hand. This is more so, considering the functionality and productivity tools available on mobile devices. As a result, mobile learning utilizes this ease of access to information to transform moments which would be otherwise "wasted" into useful time enriched with didactic contents (Pieri & Diamantini, 2009).

Mobile Operating Systems: Operating systems (OS) available on mobile devices include Symbian OS, Microsoft Windows Mobile OS, Palm OS, Blackberry OS, Android OS, iOS, and Mac OS X. As expected, applications are not interchangeable across operating systems, hence the crucial role played by J2ME in acting as a broker

across some of the operating systems to enhance portability of applications in .jar extension.

2.2.5 Usefulness of M-Learning in Higher Institution

As stated by Ally and Prieto-Blázquez (2014), the devices facilitating mobile learning within higher learning can benefit learners in multiple ways. Firstly, it enables learners to conduct their learning in groups or even request customized sessions where the unit content is specifically designed for them. LIVE tutor-led class sessions have more interaction as compared to self-limited mobile learning. Coman et al. (2020) noted that teachers focus on learners' problems as well as their major interests more. Besides, they may better comprehend learners' strengths as well as weaknesses. According to Criollo-C et al. (2018), all kinds of mobile learning often provide learning materials in diverse forms, including MCQs, PPTs, blogs, whitepapers, assignments, articles, e-books, etc.

When classroom training is compared to virtual training, virtual training is normally less costly as well as affordable for learners, teachers, in addition to other individuals conducting other related tasks. Also, Ragusa and Crampton (2017) note that there are diverse payment options where learners may use to settle payments for their education services in installments. Today, loans targeted at students are usually available and learners do not need any form of interest or additional costs on installments. Indeed, for mobile learning, learners do not need to incur costs on books or any other related study materials. In general, it is relatively cheaper as well as more result-oriented. M-learning has indeed taken over from the traditional way of acquiring learning in which one has to acquire everything from the books. Mobile learning has also enabled learners to concentrate on specific modules that are of interest to them online. Besides, Brame

(2015) states that educational materials are often available in diverse formats such as presentations and video content.

With the introduction of additional m-learning tools, learners may expect more exciting learning opportunities that can help them enhance their learning skills. Mobile learning use in higher learning offers learners the required confidence that will help them perform well not only during interviews but also when engaging in other discussions. As noted by Sung et al. (2016), mobile learning also empowers learners to present themselves with more confidence, in addition to shining out within a crowd.

Students who integrate mobile learning with classroom learning training are often more successful within their respective career paths. According to Díez-Echavarría et al. (2018), they normally attract higher remuneration packages as compared to their colleagues. Indeed, blended learning through the involvement of numerous mobile learning sessions not only provides constant support but also helps resolve the learners' queries promptly. Yilmaz et al. (2020) observe that various platforms that support mobile learning, including blogs, provide learners with important information and facts on why mobile learning forms the future of learning, especially higher education (Mahasneh, 2021).

According to Díez-Echavarría et al. (2018), m-learning usage in higher learning produces measurable and significant differences in terms of learners' engagement as well as performance. It minimizes the existing gap in terms of the delivery of learning as well as gives a different dimension to the important sector of higher education. Technology has undoubtedly transformed how learning is delivered as well as shared forever. It is inspiring learners to take their certificates as well as degree courses. Also, Badwelan et al. (2016) confirm that m-learning use in higher learning establishments

has been acknowledged by many owing to its widespread access as well as the plenty of gains it offers.

Earlier, students within several higher learning institutions were unsure as to whether to accept the use of mobile learning devices. According to Ahmad (2020), this lack of confidence formed a major reason behind the students' reluctance to pursue their education through mobile learning. Abu-Al-Aish and Love (2013) observe that there are diverse views as to whether learners within various learning institutions across the world have adopted and acknowledged the usage of the devices supporting mobile learning in higher education. Scholars share a strong opinion that the acknowledgment, prominence, as well as popularity of the devices supporting m-learning, can offer varied resources to support learners within higher learning institutions expand their minds regardless of where they are (Mohammadi et al., 2020).

2.2.6   Problems Associated with Mobile Learning in Higher Institution

Lack of mobile networks within various surroundings forms part of the major limitations in the usage of mobile learning gadgets. As highlighted by Criollo-C et al. (2018) and Kankam (2020), the inadequacy of cellular network exposure or connection letdown in wireless communication forms a more commonly debated methodological issue of mobile technology, with Mohammadi et al. (2020) also stating that the comparatively small size of the screen of many mobile gadgets forming another crucial problem to m-learning gadgets reception. This directs to an additional idea, the little usability of mobile gadgets caused by low coverage of cellular networks, non-durable battery life as well as small screens and keyboards.

To add to, the high expenses related to positioning mobile systems for education, Criollo-C et al. (2018) and Mohammadi et al. (2020) note that additional issues

associated with mobile gadgets include content supply to the user, network accomplishment, and content heterogeneity. The number two factor established is that all education applications have used usability assessments, neither do we discover guides or structures to assess them. It can create issues with several users who are not so conversant with mobile expertise and hence have restrictions on their relations and understanding of training applications (Brantes Ferreiram et al., 2013; Demuyakor, 2021). This indicates an urgent requirement to expand the knowledge among learners using smartphones as a form of m-learning.

Finally, m-learning gadgets may be unsuited to social and traditional standards. For instance, mobile gadgets can be observed as sources of interruption, both by learners and teachers, which may impact academic accomplishment. Mobile education gadgets can be an excessive interruption (Dontre, 2021). Mobile learning gadgets can be disrupted if the operators get consistently distracted by text messages and reports (Dontre, 2021). It then needs self-control and emphases some training institutions report that the cooperative academic usage of mobile expertise happens to a restricted extent, learning and physical interaction with specialists hardly arises. This could be a risk that could damage their learning value. The achievement of m-learning arouses learners to new undesirable anticipation as learners feel that they are necessary to make extra energies to master m-learning expertise (Milosevic et al., 2015).

2.3   Review of Related Empirical Study

Demir, (2013) carried out a study on the effect of mobile learning applications on students' academic achievement and attitudes toward mobile learning. This study examines the effect of mobile learning applications on undergraduate students' academic achievement, attitudes toward mobile learning and animation development

levels. Quasi-experimental design was used in the study. Participants of the study were students of the Buca Faculty of Education at Dokuz Eylul University in Turkey. The experiment was conducted during the first semester of 2013-2014 academic year. A mobile learning-based strategy was used in experimental group (n = 15), while the control group participated in a lecture-based classroom (n = 26). An attitude scale was used to measure the students' attitudes toward mobile learning, and achievement test was used to examine the effect of mobile learning applications on the students' achievement. In order to evaluate the animations developed by students, a rubric was used. For exploratory analysis, interviews were conducted with students. The findings suggest that mobile learning may promote students' academic achievement. Both groups had significantly high attitude scores toward mobile learning. Furthermore, the students appreciated mobile learning as an approach that may significantly increase their motivation. Researchers and practitioners should take into consideration that mobile learning can create positive impact on academic achievement and performance and increase the motivation of students.

Dashti and Aldashti (2015) also had conducted a study on "students' perceptions toward the use of mobile learning at the College of Basic Education in Kuwait" where they had distributed 300 questionnaires among the female students and found 80.3% were satisfied by using mobile devices as a learning tool and they claimed that mobile learning enhances their knowledge of English language.

Another study conducted by Nassuora (2013) to examine students' acceptance of mobile learning in Saudi Arabia. The author had found that m-learning acceptance of Saudi Arabia is high at the higher studies level by using questionnaires survey among 80 students (Nassuora, 2013). Another study of mobile phone usage and potential for m-learning based on Panama by Valderrama Bahamóndez and Scmidt (2010) had found

that mobile phone usages among school children are going high and teacher and students were all accept using their mobile phone for the purpose of learning.

A similar study on "Students' Perceptions of Mobile Technology in Higher Education: Preparation to Design Mobile Learning Models" by (Pebriantika et al., 2019) found that students are familiar with mobile learning technology. By using a survey method of 100 students they had also found that the students have a positive perception of mobile technology at higher education in Indonesia. The literature also shows that the use of mobile phone devices is the most popular learning tool in higher education. Mobile learning is potentially the most exciting, innovative, and technologically advanced system that will help the effect of revolutionizing the delivery of the higher education institution in the future.

The difference between the study reviewed and this study is that this study makes research on perception of undergraduate student on the use of Mobile learning, Using Universities in Niger State as Case study. The survey research method was used for this Study, and the participants of this study were students of Universities in Niger state.

2.4   Summary of Literature Review

In summary, Mobile learning (M-learning) has become a significant component of higher education technology. Moreover, M-learning allows students to study, collaborate, and exchange ideas while using the internet and technology. Furthermore, an acceptance of M-learning is necessary for students and educators when it comes to using M-learning systems.Most of the time students face an intimidating first-year experience in college. Some take months to keep up with the school's pace, and others cannot cope with it and drop out. The use of mobile apps at the beginning of college seems to ease that nuisance. Examined the effects of mobile learning applications on

undergraduate students' academic achievement, attitudes toward mobile learning and animation development levels. Mobile learning has significantly positive effect on academic achievement compared to expository learning in the research. While mobile learning has significant positive effect on academic achievement, it also has its limitations in the usage of mobile learning gadgets such as lack of mobile networks within various surroundings. As highlighted by Criollo-C et al. (2018) and Kankam (2020), the inadequacy of cellular network exposure or connection letdown in wireless communication forms a more commonly debated methodological issue of mobile technology, with Mohammadi et al. (2020) also stating that the comparatively small size of the screen of many mobile gadgets forming another crucial problem to m-learning gadgets reception. This directs to an additional idea, the little usability of mobile gadgets caused by low coverage of cellular networks, non-durable battery life as well as small screens and keyboards.This study aims to investigate the perception of undergraduate students on the use of mobile learning in Universities in Niger state.

CHAPTER THREE

3.0   **RESEARCH METHODOLOGY**

3.1   **Introduction**

This chapter describes methods and procedures used in conducting this research work. The description of the procedure is done under the following headings: Research design, Area of study, Population of the study, Sample and sampling procedure, Instrumentation, Validity of the instrument, Procedure for data collection, and Procedure for data analysis.

3.2   **Research Design**

The survey research method will be used for this study. This is considered appropriate because survey design generally can be used to effectively investigate problems in realistic settings. The survey technique will also allow the researcher to examine several variables and use multi-variable statistics to analyze data.

3.3   **Area of The Study**

The study will be conducted in Universities in Niger State, Nigeria. Niger State is a state in the North Central region of Nigeria and the largest state in the country. Niger state has three political zones, zone A, B and C. The state's capital is at Minna. Other major cities are Bida, Kontagora and Suleja. It was formed in 1976 when the then North-Western State was divided into Niger State and Sokoto State. It is home to Ibrahim Babangida and Abdulsalami Abubakar, two of Nigeria's former military rulers. The Nupe, Gbagyi, Kamuku, Kambari, Gungawa, Hun-Saare, Hausa and Koro form the majority of numerous indigenous tribes of Niger State.

3.4   **Population of The Study**

The targeted population for this study consists of all the undergraduate students in Universities in Niger State.

3.5 Sample Size and Sampling Techniques

The sample size of the study consist of 340 undergraduate students, which consist of 190 300level students of Industrial and Technology Education Department and 150 300level students of Physics department of Federal University of Technology Minna, drawn through Multistage Sample Techniques.

3.6 Instrument for Data Collection

The instrument for data collection was a structured questionnaire designed by the researcher in collecting data for the study. The questionnaire was made up of four sections (A, B, C, and D). Section A contains the demographic information of the respondents. Section B which contain items seeks to obtained information on the perception of undergraduate student on the use of mobile learning in Universities in Niger State. Section C contain the problem associated with the use of mobile learning devices in Universities in Niger State. While Section D which consist of the types of mobile learning devices used by undergraduate students for academic purpose in Universities in Niger State. The questionnaire items were based on five points scale. Items for section B, C and D contain five responses category each. The response categories for Section B, C and D are Strongly Agree (SA), Agree (A), Neutral (N) Disagree (D), and Strongly Disagree (SD). These response categories will be assign numerical values of 5, 4, 3, 2 and 1 respectively.

3.7 Validation of The Instrument

The instrument was validated by three lecturers in the Department of Industrial and Technology Education, Federal University of Technology, Minna. The comments and suggestions made by the validators on each of the instruments was incorporated into the final draft of the instrument.

3.8   Administration of Instrument

The instrument that was used for the data collection was administered to the respondents by the researcher in the study area.

3.9   Method of Data Analysis

Data collected was analyzed using mean and standard deviation for the research questions while t-test will be used to test the hypothesis at the 0.05 level of significant. A five (5) point rating scale will be used to analyze the data as shown below.

These response categories will be assign numerical values of 5,4, 3, 2 and 1 respectively. See appendix A.

S/N		Point
1	Strongly agree	5
2	Agree	4
3	Neutral	3
4	Disagree	2
5	Strongly Disagree	1

Therefore, the mean value of the 5-point scale is:

$$X = \frac{5+4+3+2+1}{5} = \frac{15}{3} = 3.0$$

3.10   Decision Rule

The cutoff point of the mean score of 3.0 will be chosen as the agreed or disagreed point. This will be interpreted relatively according to the rating point scale adopt for this study. Therefore, an item with response 2.99 and below will be regard or consider as disagreed while an item with response at 3.0 and above is regard or considered as agreed.

CHAPTER FOUR

4.0   DATA PRESENTATION AND DATA ANALYSIS

4.1   Introduction

This chapter shows the outcome of the empirical study. It is concerned with the presentation, examination and explanation of data gotten from the primary sources. Scientific problems can be solved only based on data, and a key responsibility of the researcher is to organize a research design capable of delivering the data needed to the solution of his problem (Osuala, 2005). Such records must be presented, examined and interpreted in such a means that will suggest its use to the user. To be helpful, the records must be interpreted bearing in mind the situation in which it was done. Steadiness of outcome should be measured in reaching a conclusion on the applicability of the research. Hence, the presentation, examination and explanation of the raw records of a survey are the ways by which the research problem is answered and the declared hypotheses are tested. For this study, the data received were coded and presented in charts and tables.

4.2   DATA INFORMATION

A total of 340 questionnaires were administered to undergraduate students, which consist of 190 300level students of Industrial and Technology Education Department and 150 300level students of Physics department of Federal University of Technology Minna. 280 were retrieved of which 30 were eliminated as they were incomplete and therefore not suitable for use in the study. This resulted in 250 completed usable questionnaires.

4.3   Demographic Information

Table1: sex distribution of the respondents

Gender	Frequency	Percentage (%)
Female	80	32
Male	170	68
Total	**250**	**100**

Source: Author Fieldwork 2023

Table 1 shows the Sex distribution of the respondents and out of the 250 respondents, 80 (32%) were Female and 120 (68%) were Male and this implies there were more Male in the departments than Female.

Table 2: Year of study of respondent

Year of study	Frequency	Percentage (%)
100l	0	0
200l	0	0
300l	250	100
400l	0	0
500l	0	0
Total	**250**	**100**

Source: Author Fieldwork 2023

Table 2 shows the year of study of the respondents and it shows that out of the total number of 250 respondents, the whole 250 (100%) are 300level students of Federal university of technology Minna.

4.4 The Perception of Undergraduate Students on the use of Mobile Learning in Universities in Niger State

Item Statement	Mean	Remark
I access my lectures online easily using mobile phones	3.56	Agreed
M-learning increases my academic achievements	4.28	Agreed
M-learning will make the teaching and learning process easier	4.016	Agreed
I will encourage our university to be using m-learning.	4.54	Agreed
M-learning improves students' motivation to learn.	3.76	Agreed
M-learning allows me to study on my own.	4.296	Agreed
I will encourage my colleague to use m-learning.	4.276	Agreed
M-learning allows me to share information with my friends easily	4.596	Agreed

Table 3: the perception of undergraduate students on the use of mobile learning in universities in Niger state.

Source: Author Fieldwork 2023

The data presented in table 3 revealed that the respondents agreed with all the items 1,2,3,4,5,6,7 and 8 with mean score above 3.00.

4.5 The Problems Associated with the use of Mobile Learning Devices in Universities in Niger State.

| Item Statement	Mean	Remark
I get distracted whenever I am using mobile phone to learn	4.472	Agreed
M-learning devices can be limited by security and privacy issues.	2.88	Disagreed
Data to access online material is expensive.	4.692	Agreed
Poor Internet infrastructure.	3.76	Agreed
Negative effect on eye using m-learning	3.872	Agreed
Poor electricity supply	4.296	Agreed

Table 4: the problems associated with the use of mobile learning devices in universities in Niger state.

Source: Author Fieldwork 2023

The data presented in table 4 revealed that the respondents agreed with the items 1,3,4,5, and 6 with mean score above 3.00 and disagreed with item 2 with mean score below 3.00.

4.5   Types of m-learning devices and technologies used by undergraduate students in universities in Niger state
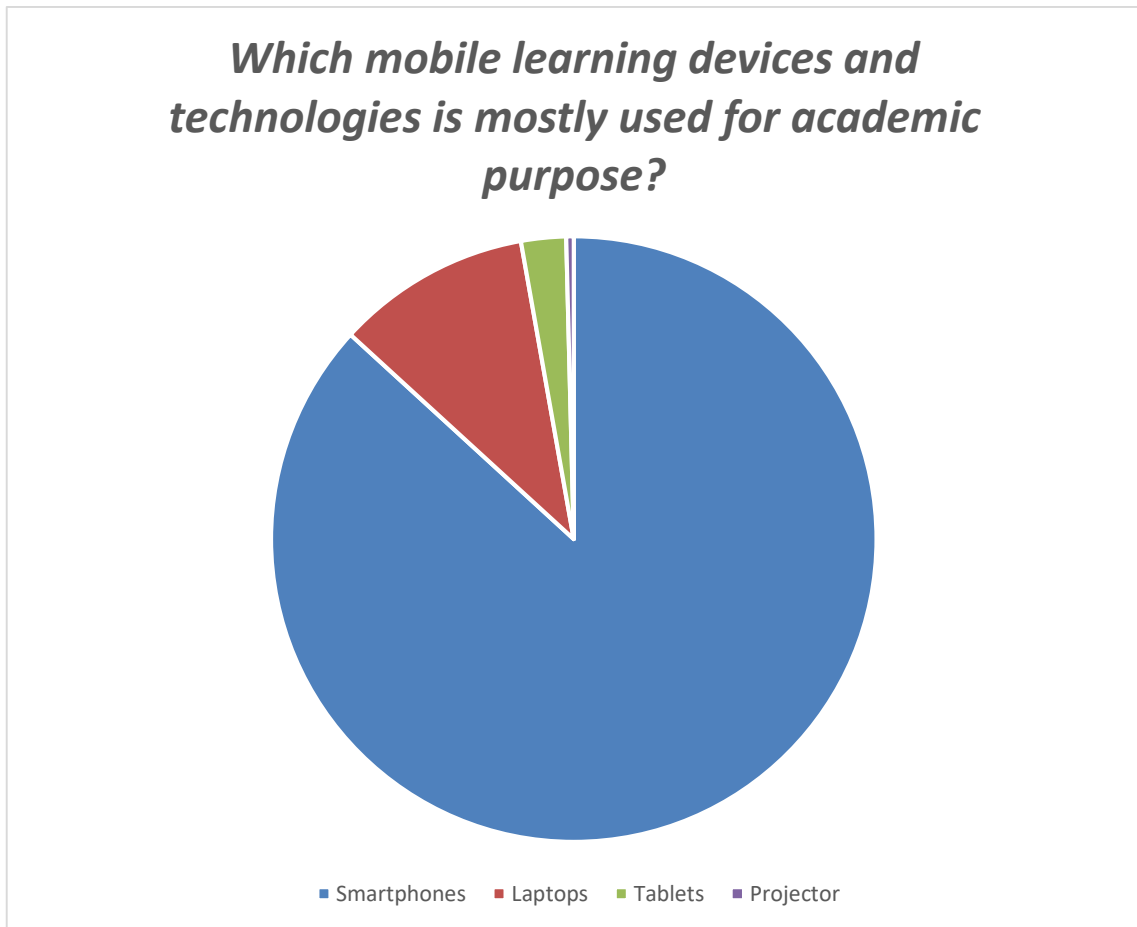
Figure 1: Do you make use of mobile learning device for academic purpose?
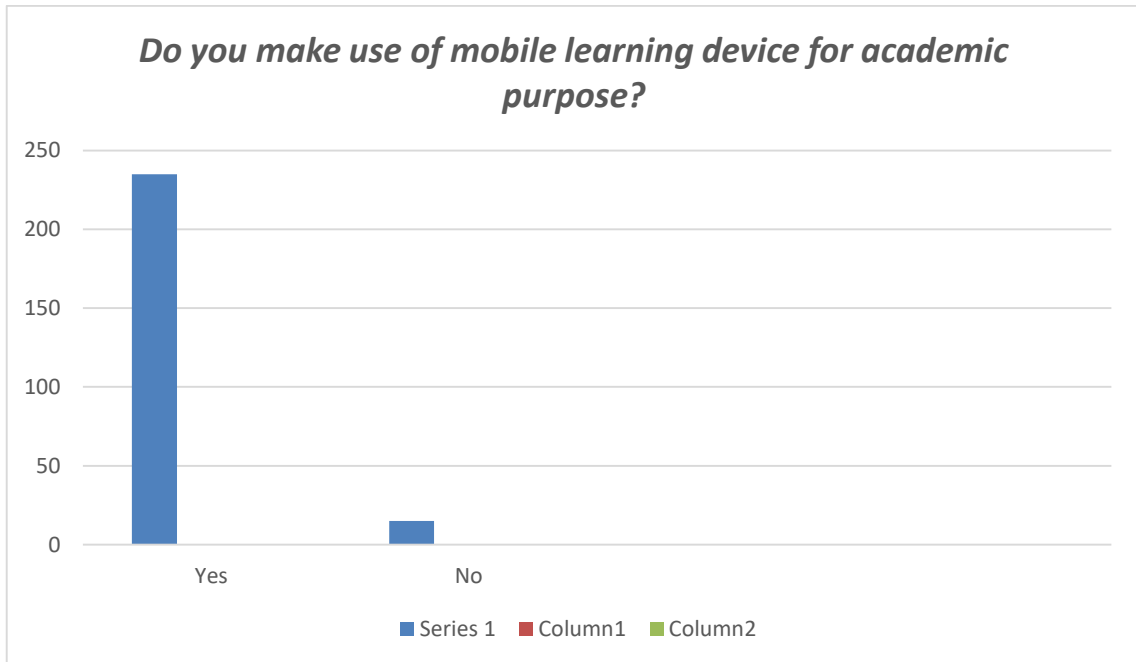
Source: Author Fieldwork 2023

Figure 1 revealed that out of the 250 respondents, 235 make use of mobile learning device for academic purpose and 15 respondents do not make use of mobile learning devices for academic purpose.

Figure 2: Which mobile learning devices and technologies is mostly used for academic purpose?

Which mobile learning devices and technologies is mostly used for academic purpose?

■ Smartphones ■ Laptops ■ Tablets ■ Projector

Source: Author Fieldwork 2023

Figure 2 revealed that out of the 250 respondents, 217 respondents make use of smartphones for academic purpose and 26 respondents make use of laptops, 6 respondents make use of Tablets and just 1 respondent make use of projector for academic purpose.

4.5 Findings of the Study

The following findings emerged from the study based on the research questions

A. The Perception of Undergraduate Students on the use of Mobile Learning in Universities in Niger State.

1. I access my lectures online easily using mobile phones
2. M-learning increases my academic achievements
3. M-learning will make the teaching and learning process easier
4. I will encourage our university to be using m-learning.

5. M-learning improves students' motivation to learn.

6. M-learning allows me to study on my own.

7. I will encourage my colleague to use m-learning.

8. M-learning allows me to share information with my friends easily

B. The problems associated with the use of mobile learning devices in universities in Niger state.

1. I get distracted whenever I am using mobile phone to learn

2. Data to access online material is expensive.

3. Poor Internet infrastructure.

4. Negative effect on eye using m-learning

5. Poor electricity supply

C. Most Commonly used mobile learning devices in universities in Niger State.

1. Smartphones.

Discussion of Findings

The finding of this study revealed 8 perceptions of undergraduate students on the use of mobile learning devices in universities in Niger states. Among this perception; 1. I access my lectures online easily using mobile phones, M-learning increases my academic achievements, M-learning will make the teaching and learning process easier, I will encourage our university to be using m-learning., M-learning improves students' motivation to learn., M-learning allows me to study on my own., I will encourage my colleague to use m-learning., and M-learning allows me to share information with my friends easily. These findings are in agreement with, Badwelan et al. (2016) that m-learning use in higher learning establishments has been acknowledged by many owing to its widespread access as well as the plenty of gains it offers.

The finding of this study revealed the problems associated with the use of mobile learning devices in universities in Niger state. Among these problems; 1. I get distracted

whenever I am using mobile phone to learn, Data to access online material is expensive, Poor Internet infrastructure, Negative effect on eye using m-learning and Poor electricity supply. These findings are in agreement with Criollo-C et al. (2018) and Kankam (2020) that lack of mobile networks within various surroundings forms part of the major limitations in the usage of mobile learning gadgets.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1   Summary of Study

The main objective of this research is the perception of undergraduate students on the use of mobile learning in Universities in Niger State, The perception of the students on the use of mobile learning in Universities in Niger State, The problems associated with the use of mobile learning in Universities in Niger State, and the types of m-learning devices used in Universities in Niger States. Based on these research questions, the researcher has found out the below, which is as follows:-

1. The study shows that majority of the respondents are 300level students of Federal University of Technology Minna.

➢ The findings from the respondent shows m-learning devices are widely used in Federal university of Technology Minna.

➢ The findings from the respondent shows the major m-learning device used for learning in Federal University of Technology Minna is Smartphone.

➢ The study reveals that based on the level of agreement of the respondent the major benefit Mobile learning in Federal University of Technology Minna is "M-learning allows me to share information with my friends easily".

➢ The study reveals that based on the level of agreement of the respondents the major problem of mobile learning in Federal University of Technology Minna is "Data to access online material is expensive".

5.2   Implication of the Study

From the result of the data analyzed, interpreted and discussed, some certain implication has evolved. The study has some significant implication for how undergraduate students use mobile learning. The study also indicated the majority of the respondent owned both laptop and smartphone devices for their teaching and learning process.

5.3 Contribution to Knowledge

The finding of this study will enable the undergraduate student to be more acquaint with mobile technology and also apricate the usefulness of mobile learning.

5.4 Conclusion

This study sought to explore students' perceptions of the application of m-learning and to investigate the students' expectations of m-learning services through their studies. Based on the results, the majority of students have positive perceptions on the use of m-learning. The results of this study indicate that the students may access to lectures online by using mobile devices more easily and useful. The results also indicated that mobile learning will help to increase flexibility of learning inside and outside class-room because the students' can access to learning materials anywhere and anytime. As in this study, most of the students expect that the use of m-learning will help them to improve academic achievement and enable them to independent learning. The results also indicated that students perceive that m-learning will play an important role of in learning and will add value to e-learning in the future. The results showed that the majority of students would like to use this technology in the future. Finally, the study found highly ranked m-learning services the expected to be used by students include online access to learning materials and administrative services such as retrieving exam results and library services etc. However, the use of mobile wireless technologies will become the choice for the students in higher education environment in the future; there is still need to further investigate the critical success factors that influence m-learning acceptance among students.

Considering the findings and conclusion of this study, the following suggestions become imminent:

Theeducationalsectorwhichisthebasisfortheupbringingofthefutureprofessionals, leaders, researchers, scientists, etc., needs to witness a great turn around which calls for cross fertilization of ideas as well as knowledge about the recent development in the world in real time. There is need to encourage and guide more investment entities both from home and abroad to enter into the ICT market. This will widen the horizon of

importation of this technology capacity building–hardware and software as well as man-power training.

The professional bodies in the building/construction industry should intensify enlightenment campaign and ICT training workshops for their members. Government at the three tiers, educational institutions, consultancy and construction firms should inculcate, imbibe and intensify ICT training for their employees, operatives, students and others, to ensure large scale embrace and deployment of ICT in all the sectors of the economy.

5.5   Recommendations

Based on the findings of the study, the following recommendations were made in order to improve the use of mobile learning.

1. There are need for the University to maintain constants internet connection and connect more computers to the internet
2. There is need for more infrastructures in terms of ICT facilities should be put in place for more practice and easy utilization.
3. There is need for the university to establish more ICT resource centers where all software can be accessed, students packages and all vision of technology for student learning

5.6   Suggestions for Further Research

Since mobile learning is relatively a new area in the process of teaching and learning, a lot of research work is needed to be conducted. The study has exposed many things which could not be covered; therefore the research suggests that, future research should:

1. Investigate the view of the instructors/lecturers on the use of mobile learning
2. Investigate the effect of mobile learning on student performance
3. Link between mobile learning and ordinary learning in higher institutes of learning.

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DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION

SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA (FUTMINNA) NIGER STATE

QUESTIONNAIRE ON

PERCEPTION OF UNDERGRADUATE STUDENTS ON THE USE OF MOBILE LEARNING IN UNIVERSITIES IN NIGER STATE

Dear Respondent,

This questionnaire is strictly for academy purpose, aimed at obtaining information for a research work on the above topic. This questionnaire will be treated with utmost confidentiality. Thank you.

SECTION A: DEMOGRAPHIC INFORMATION

1) **GENDER**

        Male ( )   Female ( )

2) **YEAR OF STUDY**

    100L ( )   200L ( )   300L ( )   400L ( )   500L ( )

SECTION B: THE PERCEPTION OF UNDERGRADUATE STUDENTS ON THE USE OF MOBILE LEARNING IN UNIVERSITIES IN NIGER STATE

This section seeks information on the perception of students on the use of mobile learning in the university. Please tick the appropriate option that best suit your opinion.

KEYS:

SA- Strongly Agree

A- Agree

N- Neutral

D- Disagree

SD- Strongly Disagree

S/N	Items	SA	A	N	D	SD
1.	I access my lectures online easily using mobile phones					
2.	M-learning increases my academic achievements					
3.	M-learning will make the teaching and learning process easier					
4.	I will encourage our university to be using m-learning.					
5.	M-learning improves students' motivation to learn.					
6.	M-learning allows me to study on my own.					
7.	I will encourage my colleague to use m-learning.					
8.	M-learning allows me to share information with my friends easily					

SECTION C: THE PROBLEMS ASSOCIATED WITH THE USE OF MOBILE LEARNING DEVICES IN UNIVERSITIES IN NIGER STATE.

S/N	Items	SA	A	N	D	SD
1.	I get distracted whenever I am using mobile phone to learn					
2.	M-learning devices can be limited by security and privacy issues.					
3.	Data to access online material is expensive.					
4.	Poor Internet infrastructure.					
5.	Negative effect on eye using m-learning					
6.	Poor electricity supply					

SECTION D: TYPES OF M-LEARNING DEVICES AND TECHNOLOGIES USED BY UNDERGRADUATE STUDENTS IN UNIVERSITIES IN NIGER STATE

➢ Do you make use of mobile learning device for academic purpose?

Yes ( )   No ( )

➢ Which mobile learning devices and technologies is mostly used for academic purpose?

Smartphones ( )   Laptops ( )   Tablets ( )   Projector ( )