Mobile E – Learning: Diffusion and Adoption in the 21st Century Education System and in the Macro Society

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Abstract

This study investigated Mobile E – Learning; Diffusion and Adaptation in the 21st Century Education System and in the Macro Society. Mobile learning is gaining recognition in both developed and developing countries of the world. Students of this 21st century, make use of mobile technology/ devices for their learning. Home works, projects, seminars are solved and sent to teachers or lecturers with mobile learning technology/ devices. In this era, students receive lectures or teaching from a teacher either in the school, from their offices, homes or on transit. Both teachers, lecturers and students can log on unto their emails to check information sent by their lecturers, teachers or their fellow students mainly on academic matters. Mobile learning facilities have enabled students to engage in personalized and collaborative learning in school and at home. Teaching with mobile learning facilities has diffused from the developed to the developing countries of the world. Both teachers and students can confidently speak the languages that accompanies with the use of mobile learning facilities. Problems associated with the use of mobile learning facilities during teaching and learning include: Power outage, lack of internet connectivity in some areas, high cost of mobile learning facilities, poor screen size of some mobile learning facilities and low memory associated with some phones and lap tops. It was recommended from this study that. Internet facilities should be installed in urban and rural areas. This would enable students in the urban and rural area to have access to the use of internet for effective and efficient learning with mobile learning facilities. Also, government should legislate on poor power supply. This would enable students have uninterrupted supply of electricity to charge their phones, laps tops and other facilities used for mobile learning.

Keywords
Mobile E - Learning, Mobile E - Learning Diffusion in the 21st Century Education System, Adoption of Mobile E - Learning Adaptation in the 21st Century Education System, Problems Constraining the Use of Mobile E - Learning Facilities in the 21st Century Education System and in the Macro Society.

Introduction

The success or failure of any educational system rest on successful planning and execution of the instrument called curriculum Gbamanja (1997). Also, the progress or poverty of any society rest on how society addresses issues plan and design effective curriculum for their children. John Dewey identified that school is a miniature society by which the society can address its problems by procuring academic programmes and facilities that meet the yearning of students and expectations of parents in 21st century education system. In the time past, teachers were considered as all-knowing and the only repertoires of knowledge today, learning has shifted from having the teacher as the all-knowing. Learning is tailored in a way students can practice or manipulate technologies for their

personalized or collaborative learning. Teachers now stand as guilds to correct students on areas where they did not do well.

Mobile E - Learning

Mobile learning is defined as those information and communication technology enabled tools used in classrooms, e- library, gallery, at home and all learning endeavours. Mobile learning is an aspect of learning mechanism Nigerian universities and Universities in Diasporas communities use to transfer learning to the learners. Its efficacy has continued manifesting in lager way on students learning. Apart from the 80% of teacher's voice heard during teaching in the classroom if supplementary technology / devices are not used to convey teaching in the classroom or elsewhere, teaching and learning will be jeopardized. Meaningful learning in school or at home is memorable when teaching and learning technologies are applied. Learning becomes memorable for better learners perception when technological facilities are blended for effective teaching and learning in this 21st century education system. Visualizing and graphic illustration tools are used to make learning vivid or understandable to the learners especially, when learners are instructed to make use of them in getting solution to their academic problems with the help of those software resources. According to Nosiri (2007) teachers effectiveness in classrooms are measured on good knowledge of the subject matter, knowledge of how learning contents should be presented and knowledge of 'the abilities and disabilities of students in the classroom. In this 21st century, lots of innovations in teaching and learning have been blended to enabled students measure up with the demands of 21st century education. Academic institutions are doing their best to ensure that the right technologies are provided in schools and Universities. The trends in mastery of technological equipment's and facilities by students at home and in schools shows that students are perfectly learning to meet up with the demands of the 21st century education especially, those technologies which arouses student's interest to learn.

In this era of knowledge explosion, the old method of teaching which is learner centered and mainly on face to face mode, is blended with technologies to acquaint learners with the best teachings they could have and discover their potentials or compete favourably in the world of work. Hellen (2016) averred that in this era, teachers now stands as a sage, and a guide by the side of students, allowing students to use their hands to manipulate technologies used for learning according to students personal and social competences. The learners of this 21st century are digital natives; they can manipulate and speak the language of ICT with ease. Learners learns with ICT tools and do not wait to see their teacher before learning hence, the idea of mobile learning. Learners acquire knowledge through continuous practice. This serves as building block to tackle more complex issues in their learning. Learners of this age are multimedia learners, they learn from different media, text, audio, visual or combination of audio and visual. Mobile devices are student centric, students engage themselves with mobile learning tools and develops experience on how to manipulate or fiddle with them to enhance their learning. Because, learners learns to acquire knowledge with mobile learning devices and adapt with it. Learners handles mobile learning devices with care because they are brittle and could spoil when they are not well handled.

Learners have revealed that learning with technological tools and devices, makes their learning more endearing and self- sustaining. Innovation in technology has torched every aspect of human lives; the desire to engage in self- study with technological devices is spreading like wild fire in all sphered of students training and development right from primary, secondary and tertiary institutions. The use of technological learning device in both classroom and home learning have diffused, its diffusion has made learners creative, a good number of 21st century learners are ICT literate or digital citizens, communicators, adaptors, collaborators and personalized learners. Diffusion or spread of mobile learning for teaching and learning in schools, homes, work places and rest places has made mobile learning devices to be adopted as an encyclopaedia of learning.

Diffusion of Mobile E - Learning Facilities in the 21st Century Education System

According to Mkpa and Izuagba (2020) the term diffusion, implies the process whereby new ideas, innovations, inventions and information spread from the point where the ideas are developed or the point where the inventions and development are planned and developed to the ultimate consumers or adapters. Thus, when new ideas, invention and innovation spread to the users or ultimate consumers, we say that the diffusion of ideas has taken place. The manner in which they spread could be unbelievable, it may take place in an informal or formal way without articulate or deliberate

programme for their spread. Teaching and learning with mobile learning technologies / devices have gained recognition from educationists and those at the hem of educational management. Previously, the use of mobile phones, lap tops were forbidden in schools. Today, they are students and teachers companion providing immeasurable assistance to teachers and students during teaching and learning. Formerly, teaching is carried out in the classroom by a teacher and students pay close attention watching demonstrations of their teacher at the center of the classroom and at the same time, jot dawn salient information that emanates from teachers voice. Today, teaching and learning have shifted from being permanently in the classroom to use of mobile learning technologies to enhance learning either in the classroom, at home or at students comfort zones where learning could be understood or be receptive to the learner or students.

Adoption of Mobile E - Learning Facilities in 21st Century Education System

The term adoption is synonymous to acceptance. An innovation or invention is acceptable in the micro and macro society not only when it has been in use in the schools and in the macro society permeating over time because of enormous benefits derived from it. According to (ELHussein & Cronje 2010) mobile technological devices embedded in teaching have enormously provided easy access to learning resources, convenience in providing solutions to to assignments, research information, seminars among others. Teaching and learning facilities and devices have enhanced effective teaching and learning especially, to students and others who make use of it to learn offices, at home or at users own conveniences. The use of mobile learning facilities or devices have enabled students and teachers develop more knowledge and skills on how to use lap tops, handsets and pam tops, including knowledge they obtain from courseware's. Use of mobile learning resources during students learning have encouraged personalized and group learning among students. When learning becomes difficult to achieve, even when mobile learning facilities are used by students, teacher's guilds in that process Regular and adult education student prefer learning with mobile learning devices. Mobile learning facilities are wireless mobile and hand held technologies mostly used in personalized and collaborative learning.

Vast numbers of students are versatile in the use of mobile technologies right from their homes. Mobile learning has no fixed place or location for their use during learning. In this method of learning, learners are required to stick to them scheduled for scheduled for learning. The portability of most of the mobile learning facilities makes it expedient to be carried about during learning. When a learner has finished using it, it can be housed in a bag, pocket or purse depending how the owner wishes to protect them from destruction or high handedness of the sun, rain, accident during their carriage. On that note, e- learning Guild defined mobile learning as research team geared towards the restoration of mobile learning in the schools and in the macro society. Mobile learning facilities that allows individuals to be more productive when consuming, interacting or creating information, through a digital portal device on regular basis. Mobile learning, devices are wireless though, their connectivity, reliability and portability does not mind if it is kept in a pocket or purse. According to Fester (2010) mobile technology is used to acquire knowledge or information that could be useful to the learner. Learners can search, store, and retrieve information on useful academic purposes with mobile learning facilities. Kumar (2009) identified that mobile learning is the junction of e–learning; Kumar further stated that mobile learning is used to transmit knowledge to students and teachers with the use of internet. Mobility of learners are ensured during use of mobile learning facilities

Mobile learning accommodates vast majority of students by having them interacts to each other. It enables development and uploading of learning materials very easily. Attewell and Savill-Smith (2005) opined that mobile learning is a wireless technology device that can be used or utilized anywhere where learners could receive unbroken transmission signals. Sharing mobile learning information is instantaneous especially in an internet friendly environment. Mobile learning has replaced the use of notes books. Information derived from the use of mobile learning applications are stored in mobile learning devices. Evans Martins, & poatsy (2010) explained that vast majority of mobile learning devices are bought from markets. They are: Cell phones, portable media players, personal digital assistants, smartphones, tablet PCs, note books, sub – note books among others.

Mobile learning is incorporated in teaching as platform for fast knowledge acquisition; its pattern of use, during learning has yielded great advantage in this 21st century education system. Its use in teaching, is progressively promising even in the coming decade. .Mobile learning is an ICT blended learning platform, students can seat at convenient places mainly at the comfort of their homes

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or any comfort zones to learn. According to Odogwu & Mbah (2015) Information and communication technology in education refer to teaching and learning of the subject matter that enables understanding the functions and effective use of ICT. It can be deduced this context, ICT is concerned with the storage, retrieval, manipulation, transmission or receipt of digital data. Mobile learning is consistently adding value to teaching and learning students.

Mobile learning incorporated in 21st century teaching and learning has tremendously helped to create learning activities that leads to meaningful and sustainable learning experiences. The benefits derived from using mobile facilities to acquire knowledge and skills has received great attention due to increasing prominence by students and teachers as part technological innovation used during learning and teaching. Students develops critical thinking skills, engage in practice learning and demonstrate problem solving skills and competences need in mobile learning and other uses of computers. It is an essential learning platform used in transforming a country into a knowledge- based society. Therefore, government, heads of educational institutions, from primary, secondary to universities, should provide steady internet service in schools, In this way, ICT tools integrated in learning, will not be a mere pipe dream. Nbina (2011) averred that laptops, palmtops, cell phones could improve students' intelligence through access to reach variety of learning materials and graphic information. They provide. The integration of information communication technology in Nigerian education system is very a land mark achievement for measuring up with educations in the system of education in Diasporas communities. Many countries of the world have integrated information technology for students learning.

Nigeria as a nation should not be left out in this civilization process in measuring up with global competitiveness. With mobile learning A step in pedagogical approaches from old paradigm to a new paradigm is inevitable. Face to face learning is not enough for the teeming population of students in Nigeria and other developing countries, new emerging trends in learning need to be developed. In this 21st century learning, different information and communication technologies have emerged, part of them are used in mobile learning platform. They include laptops, ipads, iphones, ipods, tablets, cameras, digital videos, mobile phones, projectors, interactive white boards and television sets. These technologies could be used in virtual learning approaches via video conferencing, chatting, emails, recorded video lectures. With the use of ebay, Wikipedia, ask.com, google, google scholar, answers.com, bing, many e- resources for learning could be obtained. Some learning resources are open online videos, virtual video lectures/ webinars, virtual labs, virtual libraries, online books, online theses, essays, images, simulations, animations, online journals, multimedia books, online tools for analysis are online for students use in virtual learning platform. Importance of mobile learning cannot be over emphasized. Social media which is another tool of mobile learning. It is accessible using electronic tools that enable students to study, read texts, access information, collaborate or build learning relation. Learners engage in participatory, interactive, relationship with mobile learning because it is an engaging type and allows collaboration Rudestam (2009). In Nigeria, number of students who seek admission in Nigerian tertiary institutions over burdens universities in provision of facilities and equipment's for teaching and learning In the light of this, tertiary institutions have blended mobile learning for teaching and learning to carter for vast number of students who cannot meet up with face to face learning due to financial constraints, overcrowded classrooms and struggle to seat at the front seats observed during students learning in secondary and tertiary learning institutions in Nigeria. In this era, digital technologies/ devices have been evented and incorporated in learnings for easy and fast comprehension of learning contents. It has overtaken the face to face learnings conducted in classroom.

Nigerian students like their canter parts in the whole world has embraced technological innovations blended to teach students in primary, secondary and tertiary institutions. Mobile learning has boosted teaching and learning both at home and in schools. Some students who did not see the four walls of secondary schools and universities are using both mobile and virtual learning platform to cope up with lost grounds. These groups of individuals have confidently engaged themselves on virtual learning platform thus, acquiring skills and knowledge to meeting up with the educational demands of this new age. Mobile learning provides a rewarding learning out come to students through instant feedback on what they sought for in their learning.

Today, teaching and learning have changed from being static in the classroom. Learning is carried out by the learners at any time usually at students own comforts at home offices or any

comfort zone. Digital contents are used to upload and store course wares. Students access and exchange information contend in the digital contents. Mobile classroom does not require physical presence of a teacher as compared to face to face classroom. Students have limited access to physical presence of their teachers, students' contacts with their teachers and lecturers only take place through e-mail. Students also, collaborate with their colleagues through zoom meetings, video conferencing especially during discussion group. Many primary, secondary and university students have keyed into mobile learning platform, it has endeared many benefits to students. Teaching is facilitated with mobile learning via the use of internet which affords students the leeway to participate with their colleagues using voice notes, video, chat and white board tools. Students' active participation in Mobile learning demands proficiency in the use of ICT tools hence, mobile learning is ICT based learning.

Faulty mobile learning devices constitute impediments in learning. Students are meant to use ICT software's that lead to achievement of learning outcome. Subjects and course specialist's developers also ensure that their devices are viable for transmitting messages before sending messages to coursewares. Mobile learning is a reliable access to quality education because of the course material developed and uploaded in the course wares for students use at any time Sharpels (2006). It provides avenue for students from other schools, universities to interact with fellow students in digitalized schools and universities very far from theirs. Efficacy of virtual learning has assisted schools and universities in promoting enhanced learning in universities in Africa and in the Diasporas communities. Problem of inadequate man power in public and private universities has made universities to initiate mobile learning in schools and universities so that teachers and lecturers can conveniently upload course materials and teach at ease from their home after teaching in face to face classrooms. Overcrowded classroom due to unprecedented quest to acquire education in primary, secondary and university has made school managers delve into mobile learning. Mobile learning is a virile learning platform at the disposal of students, it has encourages personalized and collaborative learning with students use of facilities such as wikis, bulletin boards, handsets and laptops which schools, students and teachers provided for themselves and for general use in the school to enhance their learning in any internet friendly environment. In this type of learning, both regular and part time students can comfortably engage in personalized studies at home and in their offices away from their schools. Online distance learnings and open universities in Africa and in Diasporas communities have glued with mobile learning Ferriman (2013). Students use mobile learning emails to connect easily with their faculties, departments and their fellow students via emails. Students receive instant feedbacks on their learnings via their emails. Courses are uploaded to students' course wares, students are meant to do justice on them mainly through mobile learning method. Students connect to internet empowered computers to enrich themselves with knowledge and skills made explicit with network assistance. Students gather experiences through personalized manipulation of computers and digitalized devices via synchronous and asynchronous means. It is planned in a way students can attend and live lectures any time they wish. Little field (2018) identified that students conveniently interact with their lecturers, teachers and receive instant feed backs immediately with mobile learning technologies. Lectures are accessible in mobile learning Moore (2019). Student can comfortably read, attend online lectures, make notes, and solve assignments and quizzes instantly. Students can as well, use mobile learning platform organized by a school to send back solutions of their assignments and quizzes from their emails to their schools and faculty emails.

Mobile learning has come to stay, its importance is unscratched as far as learning is concerned. It is a panacea for getting good job in companies and other high profiled organizations. Students and teachers in varied form have expressed the benefits inherent in mobile learning. They explained that mobile learning has aided them to boy cot road traffics, accidents, long stay on roads waiting for cars to lift them in their respective schools perhaps, studying in face to face classrooms. Managers of companies are dismayed on the mass number of graduates who comes of tertiary education institutions without acquired skills in the use of computers and other technological devices (Leyden 2015). Manager of industries however, made it imperative that graduates needed to have basic skills in the use of computers and other digital learning devices. This notion is made known to students during orientation symposiums organized in National youth service orientation camps every year. Mobile learning is similitude to online or virtual learning. In schools administration, it enhances easy calculation, storage of students' grades and ensures easy tracing of students results after end of

term and semester examinations. Face to face instructional delivery is enough for teeming number of students who seek knowledge. Mobile technological learning devices have provided the road map to pass learning to students.

Teachers and lecturers provide tailored learning contents and ensure students are guided in the learning process. Students interacts together to bring solution to their learnings difficulties. Reading culture is encouraged among students. Students can form reading groups, ensure that reading norm and culture are provided in their study groups. Hyperopia, and all manner of inferiority complexes students develop in face to face classroom does not prevail in mobile classroom because, students feels free to learn at their own frame of mind. With mobile learning facilities, the hurdles students' faces in face to face classroom are reduced to the barest minimum. Students have better chances of voicing out their problems on areas where they are having difficulties in their learning, especially, when teachers and lecturers comes on line to know the outcome of their students learning. Teaching in mobile learning classroom requires step by step pattern just like in the face to face classroom before effective learning outcome can be enhanced. It is an instructional system which is considered effective for learning especially during environmental and health pandemic. If interactivity and interdependence of all instructional components, such as the learner, learning objectives, media for delivering the instructional components techniques and perhaps the teacher that guides in the process are not harnessed in this mode of learning, anything short of this, the objectives of incorporating mobile learning in teaching and learning will not be realized. During climate change extreme events, mobile learning was the instruction mode families in Diasporas communities used in engaging their children to learn at home. Mobile learning was considered an alternative for students learning. Many primary, secondary and tertiary institutions in Nigeria and in Diasporas communities used mobile learning to cover their scheme of work, set quizzes, examinations, provide grades and results to their students. Mobile learning arouses student's interest to learn in schools and at home. Devices used for mobile learning are provided by students, some students rely on their parents for providing those devices for them. Rewarding learning experiences are obtained with mobile learning especially, when schools wishes to have learning competition with schools outside their zone. Students collaborate and copy different learning styles from their fellow students.

Problems Associated with Mobile e- learning in the 21st Century Education System

The problem of mobile e - learning facilities are complex and encompassing. In technology driven society, old technology may be overtaken by new technology as a result of new technological invention. This means that new technology can make old technology phase out in the new learning mode. Problems of mobile learning facilities include: Problems of connectivity, poor battery life. Marpada (2014) hinted that the screen size of some mobile e- learning facilities or device can make the learners strain their eyes long hours during reading and browsing from Google. Some mobile learning devices can malfunction when the memories contain in the mobile facilities are at variance. Also, there are digital divide between the rich and poor in the society some students cannot afford lap tops and handsets for mobile learning.

Distance creates barriers on network receptivity. Small handheld devices are more advantageous than the larger ones because, the memory they have cannot be equated with the big ones. Woodard & Cochran (2011) identified that majority of people in rural areas make use of mobile devices but suffers from lack of electricity and high cost of procuring mobile facilities. Evans e tal (2010) added that mobile learning tools are not as rugged as desktop computers. Evans further stated that battery life limit their usefulness some mobile phones and lap tops. Some mobile learning screen of some phones is very small this creates problems during their usage. Some mobile e - learning facilities cannot download materials and some mobile e – learning facilities do not have enough connectivity Maniar (2008). High speed internet broad bands are not available in some states students finds it difficult to learn due to poor internet and non -availability of internet. Also, urban and rural communities suffer for poor internet services request power outage. Poor power outages destabilize learning with mobile facilities. Students that engaged in long use of computers, lap tops and cell phones to learn have to charge their mobile. Good number of students lack basic computer. Some students afford computers, laptops and other learning devices for their learning, this constitutes barriers on them during learning. The affected students find it difficult to measure up with the demands of 21st century learning. Some students feels so lazy to learn, they prefer loafing in long

discussions in schools and at home. Some students do not collaborate with their mates to learn, therefore, advices they needed in their learning difficulties are got truncated.

Charmonman & Chorpothong (2005) encapsulated that mobile learning technologies/ devices are supportive learning facilities / devices that have no limitation to any particular environment unless if there is poor internet connectivity. Mobile e- learning is beneficial to business men that studies with them right inside their offices with mobile e- learning facilities. Mobile e- learning is beneficial to individual with disabilities and those dropped out of schools, because mobile e – learning is user friendly and enables the affected student's measure up from lost grounds (Kadle 2012).

Availability of mobile e – learning resources have made learning very easy, learners can access learning materials with mobile learning facilities and down load files. ELHussein & Cronje (2010) observed that mobile learning has helped business men and adult education students to meet up with their academic needs. Mobile e- learning facilities have in no small measure helped students to access lessons, homework with their mobile e - learning facilities and devices at any given time. Evans, e tal (2010) stated that mobile learning makes learners productive and provide learners access to mobile and virtual communications. Mobile learning enables learners to have access to e- books which has tremendously replacing the conventional print materials. Ike, Iwu & Ownagboke (2015) averred that mobile learning tools are educational technology tools. Lever Duffy (2015) classified mobile learning technologies as learning devices or tools students and other users can use at any time. Nyiri (2002) posited that the presence of mobile classroom caused face -to- face learning to be irrelevant. Marpadga (2014) opined that mobile learning has the following benefits to learners, the benefits Include: collaborative, learner engagement and personalized learning. Slow learners have ventured into mobile learning to achieve their feats in learning. Ferriman (2013) observed that students browse to obtain learning materials, watch videos and games from the internet.

Concept of Mobile Learning in the 21st Century Education System

Mobile learning is learning carried out with wireless technological instruments. It is a new trend in the 21st century education system. Makrue of things they can manipulate and navigate in knowledge. Mobile learning has helped students to acquire knowledge even when on transit, at home, in office or at convenient places. In this era, learners learn across space and obtain ideas, resources in one angle and apply it in another angle. Learners learn across time, by revisiting knowledge or and skills from on search engines. In this new age, mobile learning has enabled learners manage a range of learning either personalized, collaborative or virtual. Learning students engage themselves with mobile learning facilities that enhanced learning Vavoula & sharples (2002).

Just as the learners move about in the school premises, mobile learning has brought a new means of learning at home, in school or at work places .learning is now brought learning to the door step of every home stead. It is left for those that are willing to mitigate its affordances to embrace it. According to U.S National Council (1999) effective learning must have a change from the old practice to a new practice. The council concludes that learning should be on:

I.   Learner centeredness: Effective learning should be built on the knowledge and skills developed by students which thus, enable them to reason from their different personal experiences.

II.   Knowledge centeredness: a given curriculum is planned, designed from foundations of knowledge and efficiently validating taught with concepts and method.

III.   Assessment centered: All assessments must be measured according to the ability of students to whom the knowledge and skills are prepared for.

IV.   Community centered learning: Learners should ensure that they form a unique collaborative learning group sharing knowledge and given helping hands to slow learners around them.

Kim (2000) averred that both mobile, flipped, face to face learning are good means of building knowledge and skills through use of different learning means that help learners form collaborative or supportive group. Learning is not only meant for personal development but a means of developing others in the environment where one finds him or herself and the society in general Davies (2001).

Theoretical Framework

Mobile Learning Theory of John Dewey of (1916)

John Dewey pounded a theory of mobile learning in the year (1916).

Dewey propounded that a society that is anticipating new change in learning has many routes for establishing that change in the immediate possible time. Any short of this, that society will be overwhelmed by the new changes that will occur because; they are reluctant to perceive the connection or significance of that change. The relevance of Dewey theory to this study revealed that a society must ensure that its citizens are educated with personal initiatives and adaptability to modern learning tools to overcome the trajectories of life through reformation or revitalizations of their educational system.

The relevance of Dewiest theory to this modern world is not farfetched, the world is undergoing huge technological transformation, railways are constructed to pave roads for travelling, wireless communications had bridged ancient mode of communication, the internet and mobile technologies are providing global access to information and mobility of knowledge. Human societies especially the developing nations of the world must continue to meet up with these needs otherwise, it will seize to exist as a full-fledged society.

Recommendations

It was recommendations from this study that:

1. Prices of mobile learning technologies or facilities should be reduced minimally at the rate every student can afford. This would enable majority of students to have more mobile e-learning facilities and devices needed for mobile learning.

2. Internet facilities should be installed in urban and rural areas. This would enable students in the urban and rural area to have access to the use of internet for effective and efficient learning with mobile learning facilities and devices in the rural and urban areas.

3. Government should legislate on poor power supply. This would enable students have uninterrupted supply of electricity to charge their phones, laps tops and other facilities used for mobile learning.

Conclusion

With the growing trends in the use of mobile learning technologies, mobile learning has set significant leaning pace in Nigerian educational system. Mobile learning is hampered with high cost of procuring facilities and maintenance. Majority of people who cannot see the four walls of schools have engaged with their learning with mobile learning facilities to get teaching and learning information from schools even when they are at work. Technologists have not rested on their oars in producing more learning technological facilities for students. It is hoped that developing countries would gradually have most of their face to face teaching converted to mobile learning where teeming number of youths that could not have access to face to face learning can enrol in their studies through mobile learning to measure up with demands of this new age.

References

Attewell, J. & Savill- Smith, C. (2005). Mobile learning any time everywhere. London learning and skills Development Agency.

Charmonman, S. & chorpothong , N. (2005). Digital lifestyle and the road ahead. Proceedings of the fourth international conference on e- business. Beijing, China.

Dewey, J. (1916). Democracy and Education. New York: Free Press.

Davis, J. (2001). Conceptual change. In M. Orey (Ed.*), Emerging perspectives on learning teaching and technology. e.-book, available at:http://www.coe.uga.edu/epltt/conceptualchange.htm.*

Evans, A. Martins K. & Poatsy, M.A. (2010). Introductory technology in action. Ohio prentice Hall.

El-Hussein, M.O.M and Cronje, J.C (2010). Defining mobile learning in the higher education landscape. Educational Technology & Society, 13(3), 12- 21. Retrieved 20 January 2016 from http://ifets.info/journals/13- 3/3.pdf.

Ferriman, J. (2013). Benefits of mobile devices in the classroom. Retrieved 25 February 2016 from http://www.learndash.co,.benefits-of- devices – in – the –class room/

Gbamanja, S.P.T. (1997). Curriculum development and implementation: New strategies for the year 2000 plus.Port Harcourt: Paragraphics:

Fester, J. (2019). M. learning is not e- learning on a mobile device. Float mobile learning, newsletter .Retrieved 25November, 2015 from http:// www.floating learning.com.

Hellen, N.N.I. (2016).Teaching effectively: Passion and Professionalism. Joe Mankpa publishers Owerri

Ike, G.A. Iwu, A. O & Onwuagbaoke, B.B.C. (2015). Educational technology in a digital world. Cape Publishers Owerri

Kumar, S.G. (2005). The future of mobile learning. Retrieved 13 January 2016 from http;// Ezinne Articles, com/ ? Expert =Gurg_ Kumar

Kadle, A.(2012).The future of mobile learning. Retrieved 13january, 2016 fromhttp://www. upsideelearning.com/blog/index.php/2012/10/04/the-future of mobile learning/

Lever Duffy, J. & Mcdonald, J. B. (2011). Teaching and learning with technology (4th ed) Boston: Press

Leyden, A. (2015). Mobile Learning is one of the hot education trends for the coming years retrieved 20 February, 2016 from http:// www. Exam.com/ blo/mobile- learning-apps-future-of-education/time.

National Research Council (1999). *How people learn: brain, mind, experience, and school. Washington, DC; National Academy Press.*

Nyiri, K. (2002). Towards a philosophy of m- learning.IEEE international workshop on wireless and mobile technologies in education, Vaxjo, Sweden.

Maniar, N. Bennett, E.HAN d.S.& Allan., G.(2008). The effect of mobile phone screen size on video-based learning. Journal of Software. 3(4):51-61.

Moore, J. (2009). "A portable document search engine to support off-line mobile learning". Proceeding of LADIS international Conference Mobile Learning Barcelona. Spain. Retrieved in February. 2016 from http://eprints.ecs.soton.ac.uk/17441/.

Marpadaga, A. (2014). Benefits and limitations of mobile learning Retrieved 27january, 2016 from http;//blog.commlabinda,com/learningtechnology/mlearninbenefitsLimitations#sthash.41X62 DGq.dpuf

Mkpa, M. A. & Izuagba, A.C. (2020).Curriculum Studies & Innovation. Devine Mercy Publishers, Owerri

Nosiri, C.P. (2007). Classroom organization and management, theory and practice. Divine Mercy Publishers Owerri

Odogwu, H.N.& Mbah, S.(2015). Mathematics teacher's attitude and competences in the use of information and commununication technology ICT in Lagos State. Abacus:-*The Journal of the Mathematicics Association of Nigeria,40(1),160-172.*

Rudestain, M.K.& Schoenholtz-Read, J.(2009). Handbook of online learning,2nd ed.london:Sage

Sharpel, M.(2006). Big issues in mobile learning: Report of a workshop by the Kaleideoscope network of excellence mobile learning initiative.

Sharples, M. (2003). Imagine a future where building or public space are learning enabled'. e – learning Europe info. 20th January 2003. Available at http://82.194.71.130/index.php?=doc& docclng=6&menuzone=1