

POSTGRADUATE STUDENTS' STUDY MODE AND UTILIZATION OF MOBILE TECHNOLOGIES FOR LEARNING IN NIGERIA

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Abstract: The study examines Postgraduate students' utilization of mobile technologies for learning and find out the differences in the utilization of mobile technologies by postgraduate students based on their mode of study. The study was a descriptive method of the survey type. Eleven universities across South-west, Nigeria were involved based on accessibility. A total of 658 were sampled. Researchers designed questionnaire was used for data collection. Mean was used to answer the research questions while Analysis of Variance (ANOVA) was used to test the hypothesis. A coefficient reliability of 0.87 was obtained on the instrument. The finding among others were that, the Ph.D. postgraduate students utilize mobile technologies for learning and research more than other postgraduate students' counter parts, and there was no significant difference among postgraduate student' utilization of mobile technologies for learning and research purposes based on mode of study, with the p-value 0.79 which is greater than 0.05 alpha value. The study concluded that, the effective utilization of mobile technologies by postgraduates could be of immense benefit towards their learning within and outside the classroom settings and also facilitate their research knowledge and skills. It is however recommended among others that more orientation should be organized for all postgraduate students in other to bridge the gap in the differences between postgraduate students in their utilization of mobile technologies for learning.

Keywords: *distance learning; education; full time; Information and Communication Technology (ICT); mobile technologies; part-time.*

INTRODUCTION

The resultant effect of education should cater for the needs of individual citizens and society at large because education is important for the development of any society. The importance of education to mankind

cannot be underestimated, most especially in this global village dispensation of science and technological breakthroughs where learning can be implemented within and outside the classroom context. Education is defined by Chen, Szyliowicz, Lawson,

Oskar, and Nakosteen (2019) as the transmission of the values and accumulated knowledge of a society. It is a major tool for which every society needs for its' national socio-economic growth and development. This implies that no societies' socio-economic grows nor develops without embracing education and much emphasis on the learning concern. United Nations Educational, Scientific, and Cultural Organizations (UNESCO, 2019) states that education is a human right for all throughout life and that access must be matched by quality. This concentration of learning in a formal atmosphere allows children to learn far more of their culture than they are able to do by merely observing and imitating (Chen, *et al.*, 2019). As society gradually attaches more and more importance to education, it also tries to formulate the overall objectives, content, organization, and strategies of education. Rivero (2019) explains that twenty-first century learning is the master plan of how to generate innovative, relevant practices in education.

This relevance of education to the societal development led to the policies framed by the Federal Republic of Nigeria (FRN, 2013) via the National Policy on Education, who stressed the importance of education as an investment for economic, social and political developments, an aggregate tool of empowerment for the poor and the socially marginalized groups, an effective means of developing the full capacities and potentials of human resources and as a development of competent work force through the acquisition of practical life skills relevant to the digital native society veritable means of developing sound intelligent learning societies, fit and relevant to the 21st century. A good education has the power to change a life however what is new is the demand for that change. Education enables students to do the analysis while making life decisions. Abdulkalman (2019) says that life gives various survival challenges for humans but education guide human to fight with failure and get success in life. Having an education makes a person

well informed about his rights and his responsibilities to exercise his power and be a good representative in all facets of life.

Education is the illumination to every man's path. In every organization, including the educational system, information is always generated and stored in a particular medium before it is transmitted. The global challenge for education is not just about providing access, but also ensuring progress. While the process of generation and storage of this information is information technology, the process of its transmission to the intended audience or recipients is communication technology (Pearson, 2019). According to Oludotun (2015), ICT is a generic term referring to technologies for collecting, storing, editing, and passing on information in various forms. Communication is the process of transferring information from one person to another as well as from the sender to the receiver with encoding and decoding means.

Technology plays vital responsibility in transforming human living and its entire environment which has resulted in more meaningful living standard (Sanni, Aмос, & Danmaigoro, 2018). Technological advancement has been an integral part of human history, this evolution has led to a change in our day to day functioning and perhaps it is the greatest factor of change in the modern world. While never without risk, technological developments promise inventive solutions to the most crucial global challenges of our time (Meyerson, 2015). Efficient use of technology in education has changed the face of education, it has also created more educational opportunities because using technology in education unlocks educational boundaries. In a rapidly changing world, technologies are essential for an individual to easily access and apply information technology that has impact on the educational system. The new innovations of devices which are enhanced via technology are becoming more attracting, as it arrests and arouse users' attention. Integrating technology into the classroom begins when a teacher prepares lessons with

the use of technology in meaningful and relevant ways. Uzuegbu, Mbadiwe, and Anulobi (2013) establish that technology can never replace the human mind, but it can help expand it.

The benefits ensue from the use of technology in people's lives are indescribable and immeasurable. It has been anticipated that technological literacy will soon become an essential requirement for people's work, social, and even personal lives. Also, it is no longer news that for both social and economic reasons teachers and students will need computer and communication technology skills to live effectively in a knowledge-based society (Amajuoyi, 2012). Successful incorporation of ICT in teaching and learning essentially depends on teacher competency, availability of ICT infrastructure and teachers' adoption and embrace of ICT in education (Tedla & Makgato, 2012). Technology integration improves the learning environment for learners, enhances teaching in classrooms, offers administrative tools for teachers and administrators, escalates access to education and comprehensive education in schools, generates a communication platform, and provides a passport to acquisition of competitive edge in the global economy.

Integrating these technologies into educational system is increasing students' academic performance. Thus, any institutions that refuse to metamorphose with the trend of technology into learning may become less relevant in human capital growth and development in its economy. ICT is an umbrella term which entails any communication device or application (Nana, 2012). The adoption of ICT in education is capable of empowering learners by transforming teaching and learning process from teacher-dominated or centered to learner-centered where teachers serve as facilitators of students learning' pace. This transformation via ICT will result in increased learning, and also create opportunity for learners to develop their creativity, problem solving abilities, information reasoning skills and other

higher-order thinking skills (Trucano, 2005). ICT can also be regarded as gadgets through which information could be sought and accessed. The use of information and communication technology as a tool for enhancing students' learning, teachers' instruction, and as catalyst for improving access to quality education in formal and non-formal settings has become a necessity (Yusuf & Balogun, 2011).

Anthony (2012) describes ICT as an elaborate set of applications and services use for producing, distributing, processing, transforming information (including) telecoms, TV and radio broadcasting, hardware and software, computer services and electronic media. ICT is a versatile set of technological tools and resources used to communicate and manage information (Amajuoyi, 2012). The impact of ICT in education cannot be overstressed, it is interesting to note that ICT eradicates problems concerning space and time. The following benefit will evolve from the use of ICT in education: Global access to knowledge, Instant sharing of experience and best practice, self-paced learning, learning become interactive and joyful through multimedia tools, stimulations of experiential learning, opening windows for new thinking, an atmosphere of innovation, bringing excitement and motivation, prove and owing technology, feeling of in a way being ahead of time (Bell & Avis, 2016). In education, the roles of ICT has been briefed as encouraging learners intellectual potentials through advanced order thinking, problem solving, enhanced communication skills and deep understanding of the learning tools and ideas to be imparted, promoting a reassuring, interactive teaching and learning environment by building broader learning communication.

The use of ICT in Nigeria has become an integral part of our educational system from the early years to University level, and it has contributed greatly to the learning style of both the teachers and the students within and outside the classroom settings (Daramola & Omoyajowo, 2016). ICT tends to play a

facilitating role in managing the increased flows of information associated with more autonomous learning environments. ICT is currently seen to have the potential to facilitate changes in education that will allow future citizens to be better prepared for the information society (Kennedy, 2013). ICT is considered a critical tool in preparing and educating students with the required skills for the global workplace. It educates students so that they can continually adapt to a work world of continuous technological innovations, and makes it easier for students to access knowledge.

Mobile Technologies refer to all forms of technologies that can be used to make learning easier and delivered in short time. Jarvenpaa and Lang (2005) define mobile technologies as handheld information technology and artifacts that encompass hardware devices, software interface and applications and communication network services. Therefore, mobile technologies could be regarded as the combined integration of hardware like PDAs, for examples palm pilot or handspring, mobile phones, and video game players, software like the applications that run on the device which include phone books, calendar programs and others with its operating system and networking that is, infrastructure that supports the transfer of information (Bola, 2015). Learning with mobile technologies are the exploration of handheld devices with wireless and mobile networks to facilitate, support, enhance, and extend the bandwidth of learning among postgraduates. Issa, Onojah, Omoyajowo, Aderogba, Aboyeji, & Giwa (2019) establish that postgraduate students utilize mobile technologies for their learning.

The miniaturization of electronics and advances in battery technology have ushered an age in which it's possible to carry around what would once have been considered a supercomputer in our pockets. In just a couple of decades, smartphones, along with their bigger tablet brothers, have become indispensable and made it easy to stay connected to work, friends and family,

wherever we may be. Instead of going to a central thermostat in the house, you can reach into your pocket and set everything on your phone (Grodén-Morrison, 2018). Home security has been integrated with mobile technology as well. There are apps that have a video camera synced with your doorbell so you can see who is at your front door when the bell rings (Quicksprout, 2019). Home security cameras on the inside and outside of your home can all be controlled and monitored from mobile devices. There are even smart refrigerators that connect with mobile devices. This technology gives you the ability to see inside your refrigerator while you're at the grocery store so you can see what you need to buy.

Postgraduate students need to be competent in utilizing ICT tools in their learning system. This will boost their academic, research and other learning skills. ICT is drastically altering the ways things are done in nearly every field of human activity (Adeyanju, 2012). Postgraduate education in Nigeria comprises studying for academic and professional degrees, certificates, diplomas or other qualifications for which first degree is required. In Nigeria, the postgraduate programme is operated in the university under the control of the postgraduate school (Auriol, 2014). Postgraduate students are expected to embrace the use of mobile technologies in their learning and research as this will enhance and increase their learning rates and research activities.

Postgraduate mode of study refers to the approach and basis at which postgraduate students run their postgraduate programme. In Nigeria, the programme mode of study at postgraduate levels includes full time mode of study, part-time mode of study and distance learning mode of study. While the full time mode of study and part time mode of study is majorly being run by the conventional universities, the distance learning mode of study is majorly run by the National Open Universities and their respective centers. The use of electronic media for classroom instruction has its influence on the improvement of the standard

of teaching in the classroom by making concept been taught more concrete.

The new innovations of devices which are enhanced via technology are becoming more attracting, as it arrests and arouse students' attention. Therefore, the limitation in the use of these technologies might jeopardize our learning system. The utilization of ICT tools in teaching and learning has become imperative at all levels of education. This is because teaching cannot be adequately effective without the use of ICT tools in schools in this 21st century (Adebisi, 2013). The mobile technologies should not only be used for social chat alone, but it should be adopted into the teaching and learning process. Ogunduyile (2013) notes some tertiary institutions have the electronic facilities but not maximizing its utilization. The use of mobile technologies in Nigeria is still lagging behind compared to other developed nations in the globe. Most students use the mobile technologies for social self-chat but not for learning (Falade, Issa, & Alimi, 2016). Hence the main purpose of the study is on postgraduate students' mode of study and utilization of mobile technologies for learning in south-west, Nigeria. Specifically, the study examines postgraduate students' utilization of mobile technologies for learning in South-west Nigeria and find out the differences in the utilization of mobile technologies by postgraduate students based on their mode of study.

The study answers two research questions namely: 1). How do postgraduate students utilize mobile technologies in South-west Nigeria? and 2). What is the difference in the utilization of mobile technologies by postgraduate students in South-west Nigeria based on their mode of study? Meanwhile, one null hypothesis is tested: There is no significant difference in the utilization of mobile technologies by postgraduate students in South-west Nigeria based on their mode of study.

METHOD

This study was a quantitative research. The quantitative research comprised descriptive,

correlational, quasi-experimental and experimental. This study adopted the descriptive study of survey type because it allowed for a multifaceted approach to data collection and analysis, it also helped to gather a large amount of data. It investigated the postgraduate students' mode of study and utilization of mobile technologies for learning in south-west, Nigeria. A researcher-designed questionnaire was used by the researcher to obtain necessary information from the respondents.

The population for this study comprised all postgraduate students in South-west, Nigeria. Postgraduate students were sampled across 11 universities in South-west, Nigeria. Stratified random sampling technique was used across the eleven universities and six hundred and fifty-eight (658) postgraduate students were sampled using Research Advisors (2006) model of sample size. The instrument used for data collection was researchers-designed questionnaire with sections A and B for demographic data of the respondents and their utilization of Mobile technologies for learning respectively. Four likert-scales of strongly agree, agree, disagree, and strongly disagree was used as the response mode.

To ensure the face and content validity of the questionnaire used in this study, instrument was vetted by the researchers and four professors and associate professors from the Department of Educational Technology, and Department of Computer science for face and content validity, University of Ilorin validated the instrument to determine the relevance and suitability of the instrument for the target population. Their advice and suggestions were used to modify the items and ensure that the instrument was valid. It was pilot-tested at the University of Ilorin through split-half method. The coefficient of reliability of 0.82 was obtained through Cronbach alpha.

The researchers presented a letter of introduction to the sampled schools to administer the questionnaire on the selected teachers having sought for the permission of the schools' management and personnel

involved. The questionnaire was personally administered by the researchers following all ethical issues. The completed copies of the questionnaire were collected immediately from the respondents for further analysis. The respondents were not coerced while eliciting response from the respondents. There was no form of bias about their response and the respondents were not coerced. The respondents' confidentiality and anonymity were also protected while eliciting responses. Aspects such as the sample size the way the questionnaire is prepared, the formulation of questions, data analysis, margins of error, the process of selection of individuals, who should compose the sample, among others, are important and was taken into consideration in this study.

Data obtained through the questionnaire were subjected to descriptive and inferential statistics. Data collected were analyzed using mean and percentages. Mean scores were used to answer research questions. Hypotheses 1 and 2 were tested using t-test, while hypothesis 3 were tested using Analysis of Variance (ANOVA). All hypotheses were tested at 0.05 level of significance. Data were coded and analyzed using (IBM SPSS) statistics for version 25.0.

RESULTS AND DISCUSSION

Research question 1:

How did postgraduate students utilize mobile technologies in South-west Nigeria?

Table 1. *Postgraduate students utilization of mobile technologies*

S/N	Items	SA	A	D	SD	Mean
1.	Mobile Technologies can be used to search and store information regarding lesson to be learnt	331 (50.3%)	265 (40.3%)	62 (9.4%)	-	3.23
2.	Mobile Technologies allow easy access to information for research	313 (47.6%)	328 (49.7%)	12 (1.8%)	5 (0.9%)	3.55
3.	Mobile Technologies influence quick and better presentations.	257 (39.1%)	238 (36.2%)	120 (18.2%)	43 (6.5%)	2.65
4.	The use of mobile technologies allows receiving of lectures anywhere and anytime.	193 (29.3%)	258 (39.2%)	107 (16.3%)	100 (15.2%)	2.87
5.	The influence of mobile technologies results in competitive advantage compared other devices	201 (30.5%)	269 (40.9%)	143 (21.7%)	45 (6.9%)	2.90
6.	The use of mobile technologies leads to increased classroom product quality.	101 (15.3%)	258 (39.2%)	209 (31.8%)	90 (13.7%)	2.56
7.	Use of mobile technologies gain significant skills and advantages in the learning process	93 (14.1%)	204 (31.0%)	300 (45.6%)	61 (9.3%)	2.59
8.	Mobile technologies allow for greater collaboration and promote group work	82 (12.5%)	201 (30.5%)	277 (42.1%)	98 (14.9%)	2.43
9.	With mobile technologies, students' progress and reports can be easily tracked	260 (39.5%)	245 (37.2%)	113 (17.2%)	40 (6.1%)	3.12
10.	Unlimited source of information is possible with mobile technologies	252 (38.3%)	237 (36.0%)	118 (17.9%)	51 (7.8%)	3.01
11.	Mobile Technologies allow for Global communication	373 (56.7%)	285 (43.3%)	-	-	3.34
12.	Assessing students' performance can be done instantly with mobile technologies	-	171 (26.0%)	343 (52.1%)	144 (21.9%)	2.34
13.	Course curriculum can reflect real world data and real-time information with Mobile Technologies	-	189 (28.7%)	229 (34.8%)	240 (36.5%)	2.01
14.	Geographically isolated or economically disadvantaged students can benefit from access to online software or resources for learning with Mobile Technologies	401 (60.9%)	26 (4.0%)	178 (27.1%)	53 (8.0%)	3.22
15.	Using mobile technologies in learning makes learning addictive	176 (26.7%)	233 (35.4%)	198 (30.1%)	51 (7.8%)	2.88
Grand Mean						2.85

Table 1 presented the result on how postgraduate students utilize mobile technologies. The results indicated that mobile technologies can be used to search and store information regarding lesson to be learnt and mobile technologies allow easy access to information. The results indicated that 50.3% of the respondents strongly agree that mobile technologies can be used to search and store information regarding lesson to be learnt, 40.3% agreed with the statement while 9.4% of the respondents disagreed. It was revealed that mobile technologies allow easy access to information, 47.6% of the respondents strongly agreed that mobile technologies allow easy access to information, 49.7% of the total respondents agreed, 1.8% respondents disagreed while 0.9% of the total respondents strongly disagreed with the statement. Mobile technologies influenced quick and better presentations and the use of mobile technologies allowed receiving of lectures anywhere and anytime. There were 257 (39.1%) of the whole respondents strongly agreed that mobile technologies influenced quick and better presentations, 36.2% of the respondents agreed, 18.2% disagreed, and 6.5% strongly disagreed. Also, 29.3% of the respondents strongly agreed with the statement that the use of mobile technologies allowed receiving of lectures anywhere and anytime, 39.2% agreed, 16.3% respondents disagreed while 15.2% strongly disagreed.

Furthermore, the results established that the influence of mobile technologies results in competitive advantage compared other devices. The results established that 30.5% of the respondents strongly agreed that the influence of mobile technologies results in competitive advantage compared other devices, 40.9% respondents agreed, 21.7% respondents disagreed while 6.9% respondents strongly disagreed. The use of mobile technologies led to increased classroom product quality and also the use of mobile technologies gains significant skills and advantages in the learning process. The results further showed that 15.3% respondents strongly agreed with the

statements that the use of mobile technologies led to increased classroom product quality, 39.2% of the respondents agreed, 31.8% disagreed, and 13.7% of the respondents strongly disagreed. Mobile technologies allowed for greater collaboration and promote group work, 82 (12.5%) of the respondents strongly agreed with the statement which stated that mobile technologies allowed for greater collaboration and promote group work, 201 (30.5%) respondents agreed, 277 (42.1%) disagreed, and 98 (14.9%) respondents strongly disagreed with the statement.

The use of mobile technologies gained significant skills and advantages in the learning process 93 (14.1%) strongly agreed, 204 (31.0%) agreed, 300 (45.6%) of the respondents disagreed, and 61 (9.3%) of the respondents strongly disagreed. With mobile technologies, students' progress and reports can be easily tracked and postgraduate students could source for unlimited information with mobile technologies. Postgraduate students believed that mobile technologies allow for global communication. With mobile technologies, students' progress and reports could be easily tracked, 260 (39.5%) respondents strongly disagreed, 245 (37.2%) respondents agreed, 113 (17.2%) respondents disagreed, and 40 (6.1%) respondents strongly disagreed. Assessing students' performance could be done instantly with mobile technologies. Postgraduate students agreed that course curriculum could reflect real world data and real-time information with mobile technologies. Geographically isolated or economically disadvantaged students could benefit from access to online software or resources for learning with mobile technologies. Furthermore, 171 (26.0%) respondents agreed that assessing students' performance could be done instantly with mobile technologies, 343 (52.1%) respondents disagreed, while 144 (21.9%) respondents strongly disagreed.

Postgraduate students agreed that course curriculum could reflect real world data and real-time information with mobile

technologies, 229 (34.8%) disagreed, and 240 (36.5%) strongly agreed. The findings also established that 401 (60.9%) postgraduate students strongly disagreed that geographically isolated or economically disadvantaged students could benefit from access to online software or resources for learning with mobile technologies, 26 (4.0%) respondents agreed, 178 (27.1%) respondents disagreed, while 53 (8.0%) respondents strongly disagreed. There were 176 (26.7%) respondents strongly disagreed that using mobile technologies in learning makes learning addictive, 233 (35.4%) respondents agreed, 198 (30.1%) disagreed, and 51

(7.8%) strongly disagreed. Using mobile technologies in learning makes learning addictive. The grand mean score on postgraduate students' utilization of mobile technologies was 2.85. Using a bench mark of 2.50 for 4-likert scale, since the grand mean score of 2.85 was greater than the benchmark, it could thus be deduced that postgraduate students utilize mobile technologies for their learning.

Research question 2:

What was the difference in the utilization of mobile technologies by postgraduate students based on their mode of study?

Table 2. Difference in the utilization of mobile technologies by postgraduates students

Mode of Study	N	Mean	Remarks	Mean Deviation
Full-Time	315	3.51	Utilized	0.00
Part-Time	115	3.46	Utilized	0.05
Distance Learning	228	3.56	Utilized	0.04
Total	658			

Table 2 presented the difference in the utilization of mobile technologies by postgraduate students based on mode of study. The table indicated that of the 658 postgraduate students that participated in this study, 315 distance learning postgraduate students mostly utilized mobile technologies with a mean score of 3.56, 315 full-time postgraduate students' utilized mobile technologies more with a mean score of 3.51, while 115 postgraduate part-time students had a mean score of 3.46. The difference in the mean gain of postgraduate students in

their utilization of mobile technologies was very low. This indicated that postgraduate distance learning' students utilized mobile technologies more than their full-time and part-time counter parts in South-West, Nigeria.

Hypothesis

There was no significant difference in the utilization of mobile technologies among postgraduate students in South-West, Nigeria based on their mode of study.

Table 3. Utilization of mobile technologies among postgraduate students based on their mode of study

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	.657 ^a	2	.219	.350	.792
Intercept	70.448	1	70.448	112.672	.000
Mode of Study	.657	2	.219	.350	.792
Error	2.501	655	.625		
Total	73.607	658			
Corrected Total	3.158	657			

a. R Squared = .208 (Adjusted R Squared = -.386)

Table 3 showed the results on the significant difference in the utilization of mobile technologies among postgraduate

students based on their mode of study. It indicated that $F(2, 658) = 0.35, p > 0.05$, which meant no significant difference existed

in the utilization of mobile technologies among postgraduate students based on their mode of study. Hence, the null hypothesis which stated that there is no significant difference in the utilization of mobile

technologies among postgraduate students based on their mode of study is hereby accepted. However, the marginal means on the differences in utilization are represented graphically in figure 1.

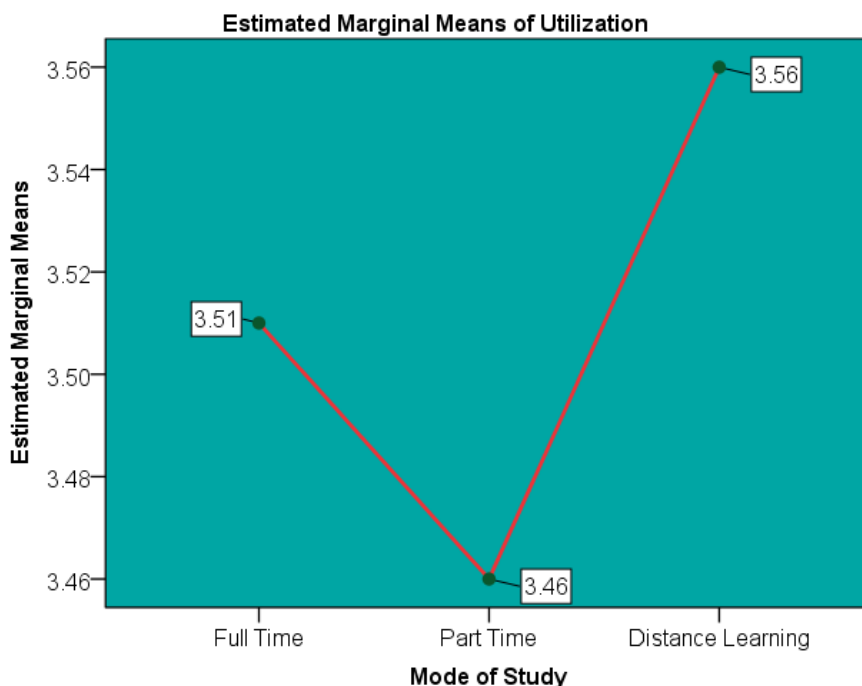


Figure 1: *Estimated marginal means on utilization of mobile technologies*

Figure 1 presented graphically the estimated marginal means on the utilization of mobile technologies among postgraduate students in South-West, Nigeria based on their mode of study. It revealed that distance learning postgraduate students utilize mobile technologies the most, next full time and part time postgraduate students respectively but the differences are negligible.

Postgraduate students utilized mobile technologies for their learning. This study was in support of Issa, *et al.* (2019) who established that majority of the postgraduate students in Nigeria adopted mobile technologies for their learning. Ferreira, Moreira, Pereira, and Durão (2015) deduced that when mobile technologies were used as part of an effort to support the involvement of an active learning there was evidence that they could lead to increase students' motivation and satisfaction. This was in support of the findings of Saima, Muhammad, Muhammad, and Maqsd

(2015) who established that the easy access to new dimensions of technologies had placed the schools, teachers, and learners on a privileged place to follow rapid changes.

There were differences in the utilization of mobile technologies by postgraduate students based on their mode of study. In support of these findings, Bola (2015) deduced that mobile technologies utilization varies based on some moderating variables of gender, specialization and so on. Significant difference existed in the utilization of mobile technologies among postgraduate students based on their mode of study. The findings of Mahdi and Al-Dera (2013) revealed that there was no significant difference in ICT use regarding mode of study.

CONCLUSION

The study concludes that postgraduate students utilize mobile technologies for their learning. The effective utilization of the

mobile technologies by postgraduate students can be of immense benefit towards their learning within and outside the classroom settings and also facilitate their research knowledge and skills. There are differences in the utilization of mobile technologies by postgraduate students based on their mode of study. The findings indicate that distance learning postgraduate students utilize mobile technologies more than their counterparts in full-time and part-time. This implies that differences exist in the utilization of mobile technologies by postgraduate students based on mode of study but the differences are not significant.

Based on the findings and conclusions, the following recommendations are made: 1). Postgraduate students should be encouraged to continue utilizing mobile technologies in their studies for both learning and research; 2). More orientation should be organized for full time and part time postgraduate students on the usefulness of mobile technologies in learning. This will enable to bridge the gap in the differences between postgraduate students in their utilization of mobile technologies for learning based on mode of study; and 3). Workshops and seminars could also be organized for all postgraduate students in order to maintain their level of utilizing mobile technologies for learning and research without gap.

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