



Availability and Utilization of Mobile Smartphones among Teachers and Students' in Colleges of Education in Yobe State, Nigeria

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ABSTRACT

The study investigates the "Availability and Utilization of Mobile smartphone among Teachers and students in Colleges of Education in Yobe state, Nigeria". The study was guided by two research objectives, two research questions and two null hypotheses which were tested at (0.05) level of significance. The population of the study was 614 teachers and 15103 students from three Colleges of Education in Yobe State. The design adopted for the study was descriptive survey research. A random sampling technique was used to determine the sample from the population. The sample has a population of 202 teachers and 4826 students. The sample size of 132 teachers and 357 students were obtained using Krejcie and Morgan Table for determining sample size. The instruments used for data collection was researcher self-constructed questionnaire titled Teachers Smartphone Availability Questionnaire and Students Smartphone Availability Questionnaires and was validated by three experts and pilot tested. The result of the pilot testing was analysed using Cronbach Alpha and yielded a reliability coefficient of 0.76 for teachers and 0.82 for students. Frequency count and percentage were used to analyze the descriptive statistics, mean and standard deviation were used to answer the research questions and paired sample test was also used to tested the null hypotheses at (0.05) level of significance. From the result, all twonull hypotheses were rejected. The summary of findings indicates that, smartphones are availability among students than among teachers in colleges of education in Yobe State. Educational utilization of smartphone is higher among students than among teachers in colleges of education in Yobe state. It was recommend that, Schools should send teachers for short term course in order to learn how to integrate smartphone in to teaching and learning.

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INTRODUCTION

Technology has become a fundamental aspect in our lives and we cannot neglect its contribution in the welfare of human being. The emergence of modern technology led to the invention of mobile phone which has become an essential part of

our daily life and a valuable means of information dissemination since its inception in the late 1990s' in Nigeria and in most developing countries. Several studies have found the uses of mobile phone among youth, particularly students' to be very important.



In Nigeria, the emergence of smartphone has brought about a profound diversification of knowledge. Sarwar and Soomro (2013) explained that, smartphone has been in existence for more than 15 years ago when one of the largest communication and technology company "Apple" introduced the smartphone to the free market, yet in fact smartphone was already being produced and marketed since 1993. Smartphones have developed more consideration and becoming increasingly popular in the market, following the release of another Apple's iPhone in 2007. The difference between the current smartphone and the previous one is that, the earlier version was more prominently used as equipment in a company, and the price was too expensive for the public users (Apple's iPhone, 2007). Because of slow technological developments in the past, and the unaffordable price, the users of smartphone were limited to business groups only.

The penetration of smartphone in to educational circle, change its basic function from mere communication tool to learning tool. In recent years, the purpose of smartphone has shifted from a verbal communication tool to a multimedia tool, which is very useful in teaching and learning process (Amanda, 2015). Smartphones are now use for surfing the web (accessing different educational websites and digital libraries), checking educational email, snapping educational photographs, updating social media status, and installing educational applications (Amanda, 2015). The presence of smartphone among teachers is highly needed due to its portability and accessibility to current and reliable information. Matimbwa and Naano (2016) say that, 98.4% of teachers have mobile phones and 1.6% doesn't have mobile phone. Out of 98.4%, 64.1% owns a smartphones of different kinds, ranging from blackberry, Androids and iPhones. 31.3% owns other types of mobile phones

with internet connectivity and 3.1% own mobile phone without internet connectivity. Seifert (2014) view that, 78% of teachers owned a smartphone while 22% owns mobile phone without internet connection however, teacher's needs special training and technical assistance are needed during classroom activities. Msuya (2015) says that, teachers were asked to mention the types of mobile phones (brands) they owned and used in their daily activities. It was found that majority of teachers (61.1%) own smartphones and are using TECNO smartphone products, 27.8% are using Samsung and 7.8% are using Nokia; while 3.3% are using other brands.

Anigbo (2015) found that, teachers often use the educational features of their mobile phones daily. Norbayah and Norazah (2009) say that, "teachers rely greatly on the mobile phone in assessing/delivering their teaching material such as tutorial, lecture and lab session in the universities. They really like the idea as it is very useful, novel and practical. They find it more convenient to use mobile technology for teaching but it still depends on the learning situation and condition".

An official data on Smartphone availability among Nigerian college students is hard to come by, but it is an indisputable fact that owning a Smartphone has become a popular culture among Nigerian students (Liadi, 2016). Adegbenro (2011) view that, smartphone such as blackberry and android are perceived as the most wanted accessory and to be up-to-date with the product among college students. Elogie, Ikenwe and Idubor (2015) indicate that, 50.9% of undergraduate students have one smartphone; 24.8% have two smartphones, 3.1% reported that they have more than two smartphones while 21.2% admitted they do not have any smartphone. The possession of these mobile devices seems to have become normative and stands as one of the mark of students identities on campus. It



appears fashionable among Nigerian students to be seen with advanced mobile communication device such as Smartphones with high capacities and advanced features. In this regard, High Speed Packet Access (HSPA) connectivity, built-in virtual keyboards, high resolution digital still and video camera, pre-installed or downloadable Web 2.0 social software, and high capacity memory storage are standard features of the modern smartphones (Cochrane and Bateman, 2010).

Woodcock (2012) states that, with the increasing number of students who have smartphone, various aspects of their lives change, they begin to operate those gadgets to expand their learning experience and performance. The use of smartphone in learning lead students to become more aware of the advantages and benefits of internet connection, such as the ease of learning at anywhere and anytime, as well as motivating students to learn and improve their performance. This explains how potential technology is in opening and expanding students' horizon, especially on the students' side of enquiry and innovation.

Mobile phone is a common sight today in our schools as you see students' going to school/class with some of the most expensive and sophisticated mobile phone, such as Smartphone, iPhones and Tablet that has all the applications, facilities and software that can connect them to the internet and all forms of social media platforms, where they chat, access, stream, download, upload, exchange and play different kinds of media contents (Olufunniyi, Fashiku, Fashiku, & Owumbo, 2012).

Research Questions

1. What is the availability of smartphone between teachers and students in colleges of education in Yobe State?
2. What is the extent of educational utilization of smartphone between teachers

and students' in colleges of education in Yobe State?

Null Hypotheses

The following null hypothesis will be tested at 0.05 levels of significance.

1. There is no significant difference in the availability of smartphone between teachers and students in colleges of education in Yobe State.
2. There is no significant difference in the educational utilization of smartphone between teachers and students in colleges of education in Yobe State.

METHODOLOGY

The design was descriptive survey research. The researcher found the design to be appropriate in determining the opinion of teachers and students toward the availability and utilization of Mobile Smartphone Technology in Colleges of Education.

The population of the study was 614 teachers and 15,103 students from three colleges of Education in Yobe State, Nigeria. A sample of 202 teachers and 4826 students was selected through simple random sampling techniques. The sample size of 132 teachers and 357 students was obtained using Krejcie and Morgan (1970) table for determining sample size.

The instrument used for data collection was researcher self-design questionnaires titled Students Smartphone Availability Questionnaire (SSAQ) and Teachers Smartphone Availability Questionnaire (TSAQ). Both instruments comprises of forty one questions using modified Likert scale.

Content and construct validity was ascertained by experts from Educational Technology, English and measurement and evaluation departments. Reliability of the instrument was determined using Cranach's Alpha and it yielded a reliability coefficient of 0.81 for teachers and 0.70 for students respectively.



RESULTS

Research Question One: What is the availability of smartphone among teachers and students in colleges of education Yobe State?

The responses from teachers regarding research question one is analysed using mean and standard deviation as presented in Table 1.

Table 1: Mean and Standard Deviation of Teachers on Smartphone Availability in Colleges of Education in Yobe State

S/N	Items	Mean	SD	Decision
1	Smartphone is common among teachers.	3.64	0.67	Agree
2	Most of the teachers possess only one smartphone?	2.64	1.27	Agree
3	The commonest smartphone operation system (OS) used by teachers is android OS.	3.43	0.88	Agree
4	Teachers possess advance smartphones with android version 5.0 and above.	3.62	0.66	Agree
5	Teachers possess smartphones with lower android version 4.2.2 and below.	2.17	0.82	Disagree
6	The commonest smartphone products owned by teachers are Techno, Infinix and Gionee products.	2.70	1.19	Agree
7	The commonest smartphone product used by teachers is Techno product.	3.14	0.93	Agree
8	The commonest smartphone product used by teachers is Gionee product.	2.31	0.74	Disagree
9	The common smartphone product used by teachers is Infinix product.	2.01	0.76	Disagree
10	The expensive nature of advanced smartphone restricts teachers from purchasing the phone.	1.88	0.46	Disagree
Cumulative Mean		2.75		

Table 1: shows the opinion of teachers on the availability of smartphone in colleges of education in Yobe state. From the Table, the responds reveal that, smartphone is available among teachers in colleges of education in Yobe state. This is because, the cumulative mean of 2.75 is greater than

the decision mean of 2.50 and the commonest smartphone used by teachers in colleges of education in Yobe state is Techno product.

The responses from students regarding research question one is analysed using mean and standard deviation as presented in Table 2.

Table 2: Mean and Standard Deviation of Students on Smartphone Availability in Colleges of Education in Yobe State

S/N	Items	Mean	SD	Decision
1	Smartphone is common among college students.	1.94	0.95	Disagree
2	Most students possess only one smartphone?	3.06	1.04	Agree
3	The commonest smartphone operation system (OS) used by students is android OS.	3.08	1.13	Agree
4	College students possess advance smartphones with android version 5.0 and above.	1.90	0.90	Disagree
5	College students possess smartphones with lower android version 5.0 and below.	2.83	1.13	Agree



S/N	Items	Mean	SD	Decision
6	The commonest smartphone owned by college students' are Techno, Infinix and Gionee products.	3.39	1.03	Agree
7	The commonest smartphone product used by college students is Techno product.	3.02	1.03	Agree
8	The commonest smartphone product used by college students is Gionee product.	2.03	0.94	Disagree
9	The common smartphone product used by college students is Infinix product.	2.01	0.92	Disagree
10	The expensive nature of advanced smartphone restricts students purchase.	3.30	0.93	Agree
Cumulative Mean		2.66		

Table 2 shows the opinion of students on smartphone availability in colleges of education in Yobe state. The Table reveals that, smartphone is available among students due to the fact that, the cumulative mean is 2.66 and is greater than the decision mean of 2.50.

Research Question Two: What is the extent of educational utilization of

smartphone among teachers and students' in colleges of education, Yobe State?

The responses from teachers regarding research question two is analysed using mean and standard deviation as presented in Table 3.

Table 3: Mean and Standard Deviation of Teachers on Educational Utilization of Smartphone in Colleges of Education in Yobe State

S/N	Items	Mean	SD	Decision
1.	Teachers use their smartphone to deliver their lectures.	1.86	0.61	Disagree
2.	Teachers search relevant educational information through their smartphones.	2.88	1.20	Agree
3.	Teachers read and download e-books using their smartphone.	2.28	0.92	Disagree
4.	Teachers use social media to send assignments and other important information to their students through smartphones.	1.97	0.64	Disagree
5.	Teachers send educational documents/videos to their students online through smartphone.	1.83	0.61	Disagree
6.	Teachers send educational SMS and e-mail to their students through smartphone.	1.41	0.74	Disagree
7.	Teachers visit social media sites regularly to attend students' problems through smartphones daily.	1.77	1.04	Disagree
8.	Teachers download and utilize educational applications through their smartphone.	1.86	0.79	Disagree
9.	Students get educational assistance from teachers through their smartphones.	2.23	0.89	Disagree
10.	Teachers attend workshops and seminars online through their smartphones.	1.95	0.64	Disagree
Cumulative Mean		2.01		



Table 3 present the opinion of teachers on the extent of educational utilization of smartphone in colleges of education in Yobe state. The Table shows that, teachers in Yobe state colleges of education are not utilizing their smartphones for educational purposes.

This is so because the cumulative mean of 2.01 is less than the decision mean of 2.50.

The responses from students regarding research question two is analysed using mean and standard deviation as presented in Table 4.

Table 4: Mean and Standard Deviation of Students on Educational Utilization of Smartphone in Colleges of Education in Yobe State

S/N	Items	Mean	SD	Decision
1.	Students use their smartphone to do assignment.	3.12	0.91	Agree
2.	Students search relevant educational information through their smartphones.	3.05	0.90	Agree
3.	Students read and download e-books using their smartphone.	1.97	0.96	Disagree
4.	Students visit social media through smartphones to get hints about their courses.	2.02	1.06	Disagree
5.	Students watch online academic activities and download relevant educational videos through their smartphone.	2.18	0.88	Disagree
6.	Students send educational SMS and e-mail through smartphones daily.	2.21	0.91	Disagree
7.	Students utilize social media sites using smartphones for educational purposes.	2.20	1.09	Disagree
8.	Students download and utilize educational applications through their smartphone.	2.34	1.14	Disagree
9.	Students get educational assistance from experts through their smartphones.	2.10	0.83	Disagree
10.	Students make effective and efficient utilization of their smartphones for educational purposes.	1.92	0.89	Disagree
Cumulative Mean		2.52		

Table 4 shows the opinion of students on the extent of educational utilization of smartphone in Yobe state colleges of education. The Table reveals that, students are utilizing their smartphones in carrying out educational activities due to the fact that the cumulative mean of 2.52 is greater than the decision mean of 2.50.

Testing the Null Hypotheses

The null hypotheses were tested using paired sample t-test. The results of the analysis are summarized as follows:

HO1: There is no significant difference in the availability of smartphone between teachers and students in colleges of education, Yobe State

Table 5: t-Test Result of Teachers and Students on the Availability of Smartphone in Colleges of Education in Yobe State

Variables	N	Df	Mean	SD	t-value	p-value
Teachers	132		2.75	0.73		
Students	132	131	3.15	0.52	18.62	0.000*

*= Significant at $p < 0.05$ alpha value



Table 5 shows the t-test result between teachers and students on the availability of smartphone in colleges of education in Yobe state. The Table shows the mean and standard deviation of teachers as 2.78 and 0.73 while mean and standard deviation of students are 3.15 and 0.52 respectively. The null hypothesis one (1) which states that, there is no significant difference between the opinion of teachers and students on the

availability of smartphone in colleges of education in Yobe State was rejected because the p-value 0.000* is less than the Alpha value 0.05 (t-value = -18.623, df = 131, p = 0.00).

HO2: There is no significant difference in the educational utilization of smartphone between teachers and students in colleges of education, Yobe State.

Table 6: t-Test Results of Teachers and Students on the Educational Utilization of Smartphone in Colleges of Education in Yobe State

Variable	N	Df	Mean	SD	t-value	p-value
Teachers	132		2.01	0.72		
		131			30.36	0.000*
Students	132		2.73	0.71		

*= Significant at p< 0.05 alpha value

Table 6 present the mean and standard deviation of teachers and students opinion on the educational utilization of smartphone in colleges of education on Yobe state. The Table shows that, the mean and standard deviation of teachers are 2.01 and 0.72 while mean and standard deviation of students are 2.73 and 0.71 respectively. the null hypothesis two (2) which says that, there is no significant difference between the opinion of teachers and students on the educational utilization of smartphone in colleges of education, Yobe State was rejected because the p-value of 0.000* is less than the alpha value of 0.05.

DISCUSSION OF FINDINGS

The study reveals that, smartphones are available among students in colleges of education in Yobe state than among teachers. This finding agrees with that of Elogie, Ikenwe and Idubor (2015) who reveals that, 50.9% of undergraduate students have one smartphone; 24.8% have two smartphones, 3.1% have more than two smartphones while 21.2% admitted they do not have any smartphone. Similarly, the finding agrees with that of Msuya

(2015) who found that, most students own a smartphone; these smartphones are equipped with cameras, true color displays, external memory cards and sound stereos. They used it for field data collection. In contrary to this finding, Seifert (2014) reveals that, smartphone is available among teacher than students in colleges of education. In addition, the finding reveals that, 78% of teachers own a smartphone and 22% did not while 74% of students owned a smartphone and 26% did not.

The finding also reveals that, educational utilization of smartphone among students is higher than among teachers in colleges of education in Yobe State. This finding is in line with the finding of Seifert (2014), who found that, college students, use smartphones for surfing the Internet, as a GPS locator, manage their learning, visit social site, record lessons, set alarm, snap pictures and write notes while most teachers use their smartphones for making calls, time management, mind maps, keeping calendar and use very few other applications. It also agrees with the finding of Tosta (2014) who found that, students read and downloads e-book and



lectures-slides through their smartphone. It also agrees with the finding of Ezemenaka (2015) who reveals that, students browse more with their mobile phone searching for academic information. It also supported by the finding of Wulystan, Ronald, Andrew and Rachel (2012) who says that, students use their smartphones to downloading course related materials, while some mentioned that, they use their phones for taking photos during study activities. Basing on these findings, most students used their mobile phones for various academic purposes. Mafenya (2011) also pointed out that, most teachers do not consider smartphone potential for education. In contrary to this finding, Anigbo (2016) found that, teachers often use the educational features of their smartphones. Verma (2011) reported that, although mobile learning has not yet been a mainstreamed into educational systems across the land, yet teachers have already integrated the phone in to their daily lives.

CONCLUSION

Smartphones are available among students in colleges of education in Yobe state than among teachers. Educational utilization of smartphone is higher among students than among teachers in colleges of education in Yobe state.

RECOMMENDATIONS

The following recommendations were drawn based on the research findings;

1. Government should organize a seminar, conferences, workshop to educate teachers on the contribution of using smartphone in teaching and learning process.
2. Schools should also send teachers for short term course in order to learn how to integrate smartphone in to teaching and learning.

3. Government should make sure that, there is a reliable wireless internet connection in the schools environment.

REFERENCES

- Adegbenro, O. (2011). Blackberry crazy on Nigerian campus. Retrieved from <http://next.upi.com>
- Anigbo, L. C. (2015). Survey of lecturer's readiness for mobile learning in Enugu State University of Science and Technology Enugu, Nigeria. Retrieved from <http://www.ijsedu.com>
- Amanda, R. (2015). History and evolution of cell phones. Retrieved from <https://www.artinstitutes.edu/about/blog/the-history-and-evolution-of-cell-phones>.
- Cochrane, T., & Bateman, R. (2010). Smartphone gives you wings: Pedagogical affordances of mobile web 2.0: *Australasian Journal of Educational Technology*, 26 (1) p 1-14.
- Elogie, A. A., Ikenwe, I. J., & Idubor, I. (2015). Factors influencing the adoption of smartphone among undergraduate students: Library philosophy and practice e-journal Retrieved from http://digitalcommons.unl.edu/li_bphilprac/1257
- Eze, P. I., & Aja, S. N. (2014). Availability and utilization of information and communication technology (ICT) in Ebonyi, Ebonyi state: Implications for effective teaching and learning. *Educational Research* 5(4) 116-121. Retrieved from <http://www.interesjournals.org/ER>
- Ezemenaka, E. (2013). The usage and impact of internet enabled phones on academic concentration among students of tertiary institutions: A Study at the University of Ibadan, Nigeria.



- Latifat, O. W. (2014). Social construction of smartphone among Fountain University Students: B.Sc. Project. Fountain University Osogbo, Nigeria.
- Liadi, O. F. (2016). College students and smartphone ownership: Symbolic meaning and smartphone consumption among Nigerian students *AUDC* 10(17-31).
- Lisa. (2012). Mobile learning support for new teaching. Retrieved from www.edutopia.org/blog/mobile-learning-support-new-teaching-lisa-dabbs
- Mafenya, N. P. (2011). Increasing Throughput and Success Rate in Open and Distance Learning Using Mobile Technology: A Case Study Johannesburg, South African Institute for Distance Education (SAIDE)
- Matimbwa, R., & Naano, V. R. (2016). Teachers' and students' perceptions of self-driven acceptance of mobile phone use as an ICT tools. *Journal of Emerging Trends in Educational Research and Policy Studies (JETERAPS)* 7(2):91-106
- Msuya, O. (2015). Using mobile phone in teaching and learning in secondary schools in Tanzania: *International Journal of Education and Research*, 3(207-218)
- Norabayah, M. S., & Norazah, M. S. (2006). Mobile phone usage form learning: comparing heavy and light mobile phone users. *Campus-Wide Information Systems* 24(5) 355-365
- Olufinniyi, O. E., Fashiku, C. O., Fashiku, B. C., & Owombo, P. T. (2012). Access to GSM and students' academic performance in secondary schools in Osun state, Nigeria. *Online Journal of Social Science Research* 1 (160-165). Retrieved from <http://www.onlineresearchjournals.org/JSS>
- Omeruo, K. (2009). The impact of GSM mobile phone on Nigerians: Retrieved from <http://techtrendsng.com/the-impact-of-gsm-mobile-phones-on-nigerians/>
- Sawar, M., & Soomro, T. R. (2013). Impact of smartphone on society: *European Journal of Scientific Research* 247.
- Seifert, T. (2014). Pedagogical applications of smartphone integration in teaching Students' & Pupils' Perspectives: Retrieved from <https://www.learntechlib.org/p/158086/>.
- Tosta, R. (2014). Smartphone and their impact on education: in Kibona, L. and Rugina, J, M. (2015), A review on the impact of smartphone on academic performance of students in higher learning institutions in Tanzania: *Journal of Multidisciplinary Engineering, Science and Technology*, (2)
- Verma, S. (2011). Smartphones to redraw the African mobile phone map: FT Tilt, 21 September 2011. Retrieved from <http://tilt.ft.com/#!posts/2011-09/30696/rise-of-smartphones-africa> in May 2017
- Woodcock, B. (2012). Considering the smartphone learning: an investigation in to students' interest in the use of personal technology to enhance their learning. *Journal of Students Engagement and Experience*, 1 (1) 1-15