

Availability and Use of Mobile Phone Technology Facilities for Learning by Undergraduates in Adeyemi Federal University of Education, Ondo, Nigeria

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Abstract: *The study is on Availability and Use of Mobile Phone Technology Facilities for Learning by Undergraduates in Adeyemi Federal University of Education, Ondo, Nigeria. The population comprises all the undergraduate students in Adeyemi Federal University of Education, Ondo. Simple Random sampling technique was used for the study. The sample size of the study was one hundred (100) degree students. The research design for the study is descriptive survey research design. The research instrument used for the study was adapted by the researcher. Section A comprises information on Biodata; Section B was on Likert type scales which asked questions on Availability and Use of Mobile Phone Technology for Learning Activities by Undergraduates in Adeyemi College of Education, Ondo, Nigeria. The responses of the respondents were collected, aggregated, and presented in a tabular form. Based on this, frequencies of occurrence were established and used for the analysis using percentages, mean and standard deviation. Based on the result from this table and mean score acceptance by the decision rule, the available mobile phones services among students of AFUED, Ondo are: mobile phone, 3G services, 4G service, MMS service, Video call service, Internet access, and Memory card. The levels of Users' skills on the use of mobile phone among AFUED students is high and the levels of experience on the use of mobile phone among AFUED students is high. The benefits of the use of mobile phone for learning among AFUED students are: easy to use smartphone for reading, does not require any special computer literacy skills, easy to use smartphone for retrieval of course materials from lecturers Slack, smartphone interfaces is user-friendly and flexible for learning, they do not encounter technical problem when using smartphone for learning, and their interaction with the smartphone for learning is clear and understandable. the challenges inhibiting the use of mobile phone for learning among AFUED students are: unstable internet connectivity, high cost of data bundle, the phone can freeze during important learning moments, intruding calls may come*

in during learning, difficult to get access to use smartphone during constant power cut, and without internet bundle or Wi-Fi connection, they cannot access course information online.

Keywords: mobile phone technology facilities, learning, undergraduates, Adeyemi, Federal University of Education, Ondo, Nigeria

INTRODUCTION

According to Borth (2022), Mobile telephone also called mobile phone are portable device for connecting to a telecommunications network in order to transmit and receive voice, video, or other data. Mobile phones typically connect to the public switched telephone network (PSTN) through one of two categories: cellular telephone systems or global satellite-based telephony. Cellular telephones, or simply cell phones, are portable devices that may be used at home or in school. Communicating by radio waves, they permit a significant degree of mobility within a defined serving region that may range in area from a few city blocks to hundreds of square kilometres. The first mobile and portable subscriber units for cellular systems were large and heavy. With significant advances in component technology, though, the weight and size of portable transceivers have been significantly reduced. Thus, Borth, (2022) noted that all mobile telephone systems exhibit several fundamental characteristics, as summarized in the following:

- The geographic area served by a cellular system is broken up into smaller geographic areas, or cells. Uniform hexagons most frequently are employed to represent these cells on maps and diagrams; in practice, though, radio waves do not confine themselves to hexagonal areas, so the actual cells have irregular shapes.
- All communication with a mobile or portable instrument within a given cell is made to a base station that serves the cell.
- Because of the low transmitting power of battery-operated portable instruments, specific sending and receiving frequencies assigned to a cell may be reused in other cells within the larger geographic area. Thus, the spectral efficiency of a cellular system (that is, the uses to which it can put its portion of the radio spectrum) is increased by a factor equal to the number of times a frequency may be reused within its service area (Borth, 2022).

In the United States, interconnection of mobile transmitters and receivers with the public switched telephone network (PSTN) began in 1946, with the introduction of mobile telephone service (MTS) by the American Telephone & Telegraph Company (AT&T). In the U.S. MTS system, a user who wished to place a call from a mobile phone had to search manually for an unused channel before placing the call. The user then spoke with a mobile operator, who actually dialed the call over the PSTN. The radio connection was simplex—i.e., only one party could speak at a time, the call direction being controlled by a push-to-talk switch in the mobile handset. In 1964 AT&T

introduced the improved mobile telephone service (IMTS). This provided full duplex operation, automatic dialing, and automatic channel searching. Initially 11 channels were provided, but in 1969 an additional 12 channels were made available (Borth, 2022).

Since only 11 (or 12) channels were available for all users of the system within a given geographic area (such as the metropolitan area around a large city), the IMTS system faced a high demand for a very limited channel resource. Moreover, each base-station antenna had to be located on a tall structure and had to transmit at high power in order to provide coverage throughout the entire service area. Because of these high-power requirements, all subscriber units in the IMTS system were motor-vehicle-based instruments that carried large storage batteries. During this time a truly cellular system, known as the advanced mobile phone system, or AMPS, was developed primarily by AT&T and Motorola, Inc. AMPS was based on paired voice channels, spaced every 30 kilohertz in the 800-megahertz region. The system employed an analog modulation approach, frequency modulation, or FM, and was designed from the outset to support subscriber units for use both in automobiles and by pedestrians. It was publicly introduced in Chicago in 1983 and was a success from the beginning (Borth, 2022).

The emergence and advancements in Information and Communication Technologies (ICTs) have changed the way teaching and learning processes are being conducted. ICTs facilitate immediate access to information resources needed for teaching and learning (Mtega, Bernard, Msungu and Sanare, 2012). According to Sife et al. (2007) in Mtega, Bernard, Msungu and Sanare (2012), ICTs have capabilities of improving information accessibility; facilitating communication via electronic facilities; enhancing synchronous learning and; increasing cooperation and collaboration. In the learning process, ICTs are known to be more cost effective as they facilitate collaborations among learners and tutors and enhance pedagogical improvement through simulations, virtual experiences, and graphic representations.

Tinio, (2003); Wijekumar, (2005) as cited in Mtega, Bernard, Msungu and Sanare (2012) expressed that Information and Communication Technology (ICT) applications enhance an exchange of information between learner-tutor or learner-learner. This takes place through the use of different ICT tools including computers, radio, television, mobile phones and some other devices. These tools provide suitable platform for the learning process. Current developments in ICTs have increased the level of interactivity and collaborations among learners and tutors. Advancements in web technology have brought about another opportunity for learning. Web based learning platforms are known to limit problems caused by distance between learners and tutors. Web-based learning is a form of e-learning supported by an internet browser. It occurs through electronic mails, chats, web-based conferencing, message boards and web pages for sharing information resources. It also provides a suitable instructional media, facilitates interactive and collaborative learning, and enhances assessment during the teaching-learning process. Thus, among the ICT tools mostly owned and used among learners are the mobile phones. These tools can provide suitable learning platforms as they have a lot of applications tutors and learners may

use in their academic activities. Learning through mobile phones is termed as mobile learning (m-learning).

Guy (2009) cited in Mtega, Bernard, Msungu and Sanare (2012) defines mobile learning as electronic learning (e-learning) through mobile computational devices. Mobile phones have a potential of improving the teaching and learning processes as the tools are cheap compared to other ICTs which can be used for teaching and learning. Jacob and Isaac (2008); Alfawareh & Jusoh, (2014) in Aba and Makinde (2020) described Smartphone as one the most popular communication devices in the world. It is a mobile phone running on a complete operating system in a manner similar to a traditional computer, which offer advanced computing abilities and connectivity options. These features enable new kinds of mobile services that in turn shape the usage habits of learners. University library users are among the highest contributors to the increasing number of smartphone sales. The factor that most influences the increase in smartphone usage is the functionality that helps users in their daily life especially learners, business people and university library users.

Statement of the Problem

Mobile Phone came in to Nigeria in the year 2001 with the arrival of Zimbabwean telecommunications company, Econet (now Airtel), and MTN from South Africa. A lot of advantages are attached to the use of Mobile Phone. Call can be made; information can be retrieved and downloaded; business can be done; partners could be contacted; and of a recent teaching and learning activities can be carried out with the aid of mobile phone. Of course, 21st century learning should not only include prints and pen but electronic devices that are ICT functioning. Based on the preposition, the researchers align to investigate the availability and use of Mobile Phone in learning activities among undergraduates of Adeyemi College of Education, Ondo.

Purpose of the Study:

The main purpose of the study is to investigate the availability and use of mobile phone among undergraduates of Adeyemi College of Education Ondo, while the specific purpose of the research is to:

1. examine the availability of mobile phone and its facilities among undergraduate students of Adeyemi Federal University of Education (AFUED), Ondo.
2. investigate the level of skills of students in the use of mobile phone among undergraduates of Adeyemi Federal University of Education (AFUED), Ondo.
3. Examine the level of experience in the use of mobile phone for learning activities among undergraduate students of Adeyemi Federal University of Education (AFUED), Ondo.
4. To measure the extent of benefits of the use of Mobile Phone for learning among undergraduate students of Adeyemi Federal University of Education (AFUED), Ondo.
5. To investigate the challenges inhibiting the use of mobile phone for learning activities among undergraduate students of Adeyemi Federal University of Education (AFUED), Ondo.

6. To proffer solution to the challenges inhibiting the use of mobile phone for learning activities among the students.

Research Questions

1. What is the availability of mobile phone among undergraduate students of Adeyemi Federal University of Education (AFUED), Ondo?
2. What is the level of skills in the use of mobile phone among undergraduate students of Adeyemi Federal University of Education (AFUED), Ondo?
3. What is the level of experience of in the use of mobile phone for learning activities among undergraduate students of Adeyemi Federal University of Education (AFUED), Ondo?
4. What are the extents of the benefits of the use of Mobile Phone on learning among undergraduate students of Adeyemi Federal University of Education (AFUED), Ondo?
5. What are the challenges inhibiting the use of mobile phone for learning activities among undergraduate students of Adeyemi Federal University of Education (AFUED), Ondo?
6. What are the suggested solutions to the challenges inhibiting the use of mobile phone for learning activities among undergraduate students of Adeyemi Federal University of Education (AFUED), Ondo?

REVIEW OF RELATED LITERATURE

The evolution of the mobile technology has seen dramatic changes in recent years. The use of mobile devices in learning is referred to as mobile learning (m-learning). This is the delivery of electronic learning (e-learning) materials on mobile devices such as personal digital assistants (PDAs), mobile phones, Tablet PCs, Pocket PCs, palmtop computers, etc. (Suresh and Al-Khafaji,2009). Quinn, (2000) in Corbeil and Valdes-Corbeil (2017), a computer-based educationalist, described mobile learning as the intersection of mobile computing (the application of small, portable, and wireless computing and communication devices) and e-learning (learning facilitated and supported through the use of information and communications technology). In the research, it was predicted that mobile learning would one day provide learning that was truly independent of time and place and facilitated by portable computers capable of providing rich interactivity, total connectivity, and powerful processing.

In Corbeil and Valdes-Corbeil (2017) it was asserted that a smart phone combines telephone capability with a PDA, camera, video, mass storage, MP3 player, internet access, and networking features in one compact system. Students can download audio and video lectures and podcasts to their smart phones. They can play audio, video, and Flash movies; display and edit text documents; access e-mail and Web content; send Instant Messages and text messages; and use the phone for mass storage. Smart phones also enable global collaboration and scientific experimentation and research. Users also can access information globally. Smart phones thus support interactive learning. A smart phone combines a multitude of communication and computing features in one compact system. However, the small screen makes Web browsing and reading text difficult. Small

keys or a virtual keyboard make text entry inefficient for longer e-mails or texts. Finally, some smart phones cost as much as entry-level PCs while having a fraction of their functionality.

According to Cui and Wang (2008), Ferry, (2009), Liaw (2009) as cited in Mtega, Bernard, Msungu and Sanare (2012) modern mobile phones can be used to help students to access web-based contents, remix it, share it, collaborate with others and create media rich deliverable for the classroom teachers as well as global audience. Lecturers have made the use of mobile phones to store and retrieve information such as e-books, instructional materials, reviewing students' marks thus making teaching and learning practices more effective. Moreover, it was reported that in higher education mobile phones can provide course materials to students including due dates for assignments, and information about time table and room changes. Furthermore, it was noted that in China students can view their teachers' web page or access some other online English learning resources via mobile phones and they can also take online tests.

Most mobile phones have a feature that allows them to take notes. Students can use this function to take notes on the English both what they learn in class and what they read or hear outside class. The teacher can ask students to hunt for specific language forms and collect them in the phone. It can break the boundary between class time and daily activities and lead students to learn continuously even when a classroom lesson is over. What's more, nearly all phones have memory for graphics, photos and audios that you can use to download listening and reading materials for students who can in turn transfer them to their phones or other media. Many books are now published in mobile-friendly formats. Students can use the voice recorder to take notes about the book while they are reading. The books, along with students' reflections, can then be discussed during the class. One of the easiest ways to use a mobile phone for learning is to record samples of the target language by photographing and recording (Zhang, 2013).

Students can take pictures of English text by using the camera feature on their mobile phones. They can also collect language samples from TV or radio and make the voice memo. Then they can make a language data base, upload the pictures or audios and share with classmates while practicing the language in groups. One excellent activity in this respect is producing video drama projects with mobile phones. Students are asked to design a project-based video task which combines drama, technology and communicative language teaching, motivates students because they enjoy recording with their mobile phones, and breaks the monotony of traditional class teaching and is enjoyable and stimulating. In the drama project, students need to write English scripts, engage in peer correction and design and produce the video in English, so it is an excellent way to get students to use different communicative functions in English and reinforce their language skills (Zhang, 2013).

Furthermore, the study conducted by Utulu (2012) in Mtega, Bernard, Msungu and Sanare (2012) in Nigeria revealed that mobiles phones were used by students for communicating with lecturer in charge of the course, collect data (recordings), sending emails to lecturers, access Online Public

Access Catalogue and share knowledge. Also, Valk, Rashid, and Elder (2010) in Kim, Rueckert, Kim and Seo (2013) demonstrated how mobile phone-facilitated learning and give students in developing countries increased access to educational materials and services.

With help of mobile phone technology, students can give control over their own learning. During the wide range of daily social activities where mobile phones are most likely to be used, students control the medium, and teachers, by elaborating how to use the medium for the best, provide a blueprint for self-regulated learning. Mobile phone serves as supportive evidence for autonomous learning theory. It proves quite feasible to use mobile phone technology in classes. These days it seems mobile phones are used everywhere by everyone. Mobile phones are relatively cheap and increasingly powerful, especially when more and more smart mobile phones become popular. They are so portable, convenient and smart that learners are used to working with them, often more so than with computers. (Zhang, 2013).

Thus, Evans and Nation (2000) in Suresh and Al-Khafaji, (2009) expressed that learning is about facilitation of understanding through critical reflection and discourse. It is the effectiveness with which information is transmitted. Deep learning uses reflective and collaborative teaching strategies to externalise meaning, provide alternative explanations, diagnose misconceptions and confirm meaning within a context that provides choice and respect. The use of mobile phones makes instructional materials to be readily available and accessible at ease. Students can easily surf the internet download or search information regarding a given course or assignments. In short, mobile phones can be used by teachers or educators to share course materials during classes through wireless technologies like Bluetooth, Xender, Wifi or social media groups like the whatsapp for easier access to students. This eliminates the problem of copying notes manually on the chalk board or running around to make photocopies of course materials (Edeh, 2019).

Also a study by Kajumbula (2006) in Mtega, Bernard, Msungu and Sanare (2012) Makerere University found that mobiles phones were used by students for learning and teaching; for example students can know whether their marks are missing, dates for tutorials, venues and meeting times with research supervisors. Also, browsing with cell phones is one convenient way for students to surf online. Most of the modern mobile phones are incorporated with browsing applications such as Opera Mini, Internet explorer, Mozilla fire fox, Opera and Google chrome. Mobile phones can be used for sharing information resources through Infrared, Bluetooth and WiFi. Other applications including emails, Google drive and social media can equally be used for sharing academic information resources (Mtega, Bernard, Msungu and Sanare, 2012).

Despite the massive advantages that mobile phones do have in the teaching and learning process, there are some challenges of m-learning among tutors and students. Some of the mobile phones do not have programs that have direct compatibility with the academic programs such as pdf, words, excel and PowerPoint. Screen size is another limiting factor for m-learning (Mtega, Bernard, Msungu and Sanare, 2012). Smart phones were sold with some applications already installed in

them; however, a number of important applications needed to be downloaded from the mobile application stores both freely and commercially. Among the 21-teaching staff who owned smart phones, only 30% of them mentioned to have downloaded some applications. Others just used the applications incorporated when the phones were manufactured; this limited them from using some of the applications suitable for teaching and learning purposes. Also, it was identified that some of the students used their mobile phones for storing files, however; mobile phones owned had limited storage space. This limited many from installing e-learning software which could occupy more space as it decreased the storage space for lecture notes and text books. Others mentioned that they were not able to share stored files. This limited them from using their mobile phones for sharing lecture notes (Mtega, Bernard, Msungu and Sanare, 2012).

Thus, Lucille and Harry, (2012) in Edeh (2019) expressed that Society is rapidly moving from desktop and laptop computing to mobile devices, such as smartphones. The penetration of mobile phone technology is unimaginable to the extent that it has provoked series of researches on how it can be integrated into the teaching and learning process. Studies have shown that mobile phones could be an effective tool for learning enhancement.

RESEARCH METHODOLOGY

Population of the Study

The population comprises all the undergraduate students in Adeyemi Federal University of Education, Ondo.

Sampling Technique and Sample Size

Simple Random sampling technique was used for the study. Therefore the sample size of the study was one hundred (100) degree students.

Procedure for Data Collection

The researchers and research assistants collected the data through face-to-face administration of questionnaire. This involves going to the various sections of the college library to administer the questionnaire and collecting them back at the same time because library is a venue where virtually all students are present to study.

Research Design

The research design for the study is descriptive survey research design. It is a design that allows a population to be studied by collecting and analyzing data from only a sample considered to be representing the entire population. This is suitable for this research because none of the variables was manipulated but explained the way they occurred in the field of study.

Research Instrument

The research instrument used for the study was adapted by the researcher. Section A comprises information on Biodata; Section B was on Likert type scales which asked questions on Availability and Use of Mobile Phone Technology for Learning Activities by Undergraduates in Adeyemi College of Education, Ondo, Nigeria

Procedure for Data Analysis

The responses of the respondents were collected, aggregated, and presented in a tabular form. Based on this, frequencies of occurrence were established and used for the analysis using percentages, mean and standard deviation.

DATA ANALYSIS AND DISCUSSION

Answers to Research Question

Research Question 1: What are the available mobile phones services among students of Adeyemi Federal University of Education (AFUED), Ondo?

Table 1
Availability of Mobile Phone Services

Mobile Phone Services	YES		NO		Remark
	Freq.	(%)	Freq.	(%)	
Mobile phone	88	88.0	12	12.0	Available
3G services	78	78.0	22	22.0	Available
4G service	62	62.0	38	38.0	Available
MMS service	67	67.0	33	33.0	Available
Video call service	82	82.0	18	18.0	Available
Internet access	76	76.0	24	24.0	Available
Memory card	84	84.0	16	16.0	Available
TOTAL		43.1%		56.9%	

Key: 1 = No, 2 = Yes

Decision Value: 0-49% = Not Available, 50-100% = Available

Table 1 shows the available mobile phones services among students of Adeyemi Federal University of Education (AFUED), Ondo. The table shows that the students indicated that all mobile phone services are *available* with: mobile phone (88%), 3G services (78%), 4G service (62%), MMS service (67%), Video call service (82%), Internet access (76%), and Memory card (84%). Based on the result from this table and mean score acceptance by the decision rule, the available mobile phones services among students of AFUED, Ondo are: mobile phone, 3G services, 4G service, MMS service, Video call service, Internet access, and Memory card. In

support, Suresh and Al-Khafaji,(2009) expressed that the evolution of the mobile technology has seen dramatic changes in recent years and various mobile phones are available. The use of mobile devices in learning is referred to as mobile learning (m-learning). This is the delivery of electronic learning (e-learning) materials on mobile devices such as personal digital assistants (PDAs), mobile phones, Tablet PCs, Pocket PCs, palmtop computers, etc.

Research Question 2: What are the levels of users' skills on the use of mobile phone among AFUED students?

Table 2

Levels of Users' Skills on the Use of Mobile Phone among AFUED Students.

Item	SA	A	D	SD	Mean	Std. D	Remark
Sending/ Receiving E-mail via your mobile phone	54	42	2	2	3.48	.64	High
Downloading files from the internet using your mobile phone	32	55	7	6	3.13	.79	High
Sending 3G/4G files to other people	52	38	6	4	3.38	.78	High
Receiving 3G/4G from others	44	42	12	2	3.28	.75	High
Opening up your 3G/4G files	51	37	7	5	3.34	.82	High
Accessing social networking sites like Facebook, Twitter, Instagram	39	50	9	2	3.26	.71	High
Sending message via WhatsApp, Telegram	52	32	11	5	3.31	.86	High

Key; SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree

Decision Value for Remark: Low = 0.00-2.44, High = 2.45-4.00

Table 2 shows the levels of users' skills on the use of mobile phone among AFUED students. The table indicates that the level of users' skills on the use of mobile phone among AFUED students are very high, as shown by the mean score of each of the users' skills: sending/receiving e-mail via your mobile phone not available ($\bar{x} = 3.48$), downloading files from the internet using your mobile phone ($\bar{x} = 3.13$), sending 3G/4G files to other people ($\bar{x} = 3.38$), receiving 3G/4G from others ($\bar{x} = 3.28$), opening up your 3G/4G files ($\bar{x} = 3.34$), accessing social networking sites like Facebook, Twitter, Instagram ($\bar{x} = 3.26$), and sending message via WhatsApp, Telegram ($\bar{x} = 3.31$). Based on the result from this table and mean score acceptance by the decision rule, the levels of Users' skills on the use of mobile phone among AFUED students is high.

Research Question 3: What are the levels of experience on the use of mobile phone for learning among AFUED students?

Table 3

Levels of Experience on the Use of Mobile Phone for Learning among AFUED Students

Item	SA	A	D	SD	Mean	Std. D	Remark
Reading scholarly articles on mobile phone	34	41	13	12	2.97	.97	High
Collecting data through mobile phone	56	32	10	2	3.42	.76	High
Reading e-book on mobile phone	42	41	15	2	3.23	.78	High
Using online Dictionaries on mobile phone	45	40	10	5	3.25	.83	High
Searching online library catalogues on mobile phone	32	45	13	10	2.99	.93	High
Sharing information resources with course mates through mobile phone	47	41	10	2	3.33	.74	High
Surfing and downloading scholarly materials on mobile phone	49	40	7	4	3.34	.78	High
Reading online news in my subject area on mobile phone	32	52	14	2	3.14	.73	High
Doing tasks/assignment using online platform on mobile phone	61	31	6	2	3.51	.70	High
Smartphone enable me to record lectures delivered by my tutors	32	47	17	4	3.07	.81	High
It enables me to take a snapshot of illustration which cannot be memorize at instance for later date	39	35	22	4	3.09	.87	High
The use of the smartphone in online group discussion	35	46	17	2	3.14	.77	High
Smartphone enable me to use social media platform for class activities	53	28	15	4	3.30	.87	High

Key; SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree

Decision Value for Remark: Low = 0.00-2.44, High = 2.45-4.00

Table 3 shows the levels of experience on the use of mobile phone for learning among AFUED students. The table indicates that the levels of experience on the use of mobile phone for learning among AFUED students are high, as shown by the mean score of each of the students experience: reading scholarly articles on mobile phone ($\bar{x} = 2.97$), collecting data through mobile phone ($\bar{x} = 3.42$), reading e-book on mobile phone ($\bar{x} = 3.23$), using online dictionaries on mobile phone ($\bar{x} = 3.25$), searching online library catalogues on mobile phone ($\bar{x} = 2.99$), sharing information resources with course mates through mobile phone ($\bar{x} = 3.33$), surfing and downloading scholarly materials on mobile phone ($\bar{x} = 3.34$), reading online news in my subject area on mobile phone ($\bar{x} = 3.14$), doing tasks/assignment using online platform on mobile phone ($\bar{x} = 3.51$), smartphone

enable me to record lectures delivered by my tutors ($\bar{x} = 3.07$), it enables me to take a snapshot of illustration which cannot be memorize at instance for later date ($\bar{x} = 3.09$), using of the smartphone in online group discussion ($\bar{x} = 3.14$), and smartphone enable me to use social media platform for class activities ($\bar{x} = 3.30$). Based on the result from this table and mean score acceptance by the decision rule, the levels of experience on the use of mobile phone among AFUED students is high.

Research Question 4: What are the benefits of the use of mobile phone for learning among AFUED students?

Table 4

Benefits of the Use of Mobile Phone Services among Students

Item	SA	A	D	SD	Mean	Std. D	Remark
I find it easy to use smartphone for reading	50	25	19	6	3.11	.98	Accepted
Using smartphone for learning does not require any special computer literacy skills	23	64	11	2	3.11	.68	Accepted
I find it easy to use the smartphone for retrieval course materials from lecturers	29	40	29	2	2.98	.83	Accepted
Smartphone interfaces is user-friendly and flexible to use for learning	30	49	14	7	3.04	.85	Accepted
I do not encounter technical problem when using smartphone for learning	37	42	15	6	2.98	.86	Accepted
My interaction with the smartphone for learning is clear and understandable	26	46	23	5	2.97	.83	Accepted

Key; SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree

Decision Value for Remark: *Not Accepted* = 0.00-2.44, *Accepted* = 2.45-4.00

Table 4 shows the benefits of the use of mobile phone for learning among ACE students. The table indicates that the students agreed to all the items as follows: they find it easy to use smartphone for reading ($\bar{x} = 3.11$), using smartphone for learning does not require any special computer literacy skills ($\bar{x} = 3.11$), find it easy to use the smartphone for retrieval course materials from lecturers Slack ($\bar{x} = 2.98$), smartphone interfaces is user-friendly and flexible to use for learning ($\bar{x} = 3.04$), they do not encounter technical problem when using smartphone for learning ($\bar{x} = 2.98$), and their interaction with the smartphone for learning is clear and understandable ($\bar{x} = 2.97$). Based on the results from this table and the mean score acceptance by the decision rule, the benefits of the use of mobile phone for learning among AFUED students are: easy to use smartphone for reading, does not require any special computer literacy skills, easy to use smartphone for retrieval of course materials from lecturers Slack, smartphone interfaces is user-friendly and flexible for learning, they do not encounter technical problem when using smartphone for learning, and their interaction

with the smartphone for learning is clear and understandable. In support, Evans and Nation (2000) in Suresh and Al-Khafaji,(2009) expressed that learning is about facilitation of understanding through critical reflection and discourse. It is the effectiveness with which information is transmitted. Deep learning uses reflective and collaborative teaching strategies to externalise meaning, provide alternative explanations, diagnose misconceptions and confirm meaning within a context that provides choice and respect. The use of mobile phones makes instructional materials to be readily available and accessible at ease. Students can easily surf the internet download or search information regarding a given course or assignments. In short, mobile phones can be used by teachers or educators to share course materials during classes through wireless technologies like Bluetooth, Xender, Wifi or social media groups like the whatsapp for easier access to students. This eliminates the problem of copying notes manually on the chalk board or running around to make photocopies of course materials (Edeh, 2019).

Research Question 5: What are the challenges inhibiting the use of mobile phone for learning among AFUED students?

Table 5

Challenges of the Use of Mobile Phone Services among Students

Item	SA	A	D	SD	Mean	Std. D	Remark
Unstable internet connectivity	56	30	7	7	3.35	.89	Accepted
The screen and key sizes make smartphone uncomfortable for learning	7	29	39	25	2.18	.89	Not Accepted
File formats of contents sometimes do not support smartphone facility	6	10	56	28	1.94	.79	Not Accepted
High cost of data bundle	60	34	2	4	3.50	.73	Accepted
The phone can freeze during important learning moments	24	40	32	4	2.84	.84	Accepted
Intruding calls may come in during learning	46	42	8	4	3.30	.78	Accepted
Difficult to get access to use smartphone during constant power cut	31	50	12	7	3.05	.85	Accepted
Without internet bundle or Wi-Fi connection, I cannot access course information online	54	37	3	6	3.39	.82	Accepted

Key; SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree

Decision Value for Remark: *Not Accepted* = 0.00-2.44, *Accepted* = 2.45-4.00

Table 5 shows the challenges inhibiting the use of mobile phone for learning among AFUED students. The table indicates that the students agreed to the following: unstable internet connectivity ($\bar{x} = 3.35$), high cost of data bundle ($\bar{x} = 3.50$), the phone can freeze during important learning moments ($\bar{x} = 2.84$), intruding calls may come in during learning ($\bar{x} = 3.30$), difficult to

get access to use smartphone during constant power cut ($\bar{x} = 3.05$), and without internet bundle or Wi-Fi connection, I cannot access course information online ($\bar{x} = 3.39$). Also, the table shows that the students disagreed to the following: screen and key sizes make smartphone uncomfortable for learning ($\bar{x} = 2.18$), and file formats of contents sometimes do not support smartphone facility ($\bar{x} = 1.94$). Based on the results from this table and the mean score acceptance by the decision rule, the challenges inhibiting the use of mobile phone for learning among AFUED students are: unstable internet connectivity, high cost of data bundle, the phone can freeze during important learning moments, intruding calls may come in during learning, difficult to get access to use smartphone during constant power cut, and without internet bundle or Wi-Fi connection, they cannot access course information online.

Research Question 6: What are the suggested solutions to the challenges inhibiting the use of mobile phone for learning among AFUED students?

Table 6

Solutions to the Challenges of the Use of Mobile Phone Services among Students

Item	SA	A	D	SD	Mean	Std. D	Remark
Internet service providers should make concerted efforts to build strong internet connectivity for the nation	58	23	17	2	3.37	.84	Accepted
Phones with bigger screen and key sizes should be made	30	51	15	4	3.07	.78	Accepted
The right file formats of contents should be built along side with the phone	41	35	20	4	3.13	.87	Accepted
Faster network should be selected by students	57	30	11	2	3.42	.76	Accepted
Intruding call should be left till after lecture/learning	32	47	19	2	3.09	.77	Accepted
Better power supply should be built by government	49	30	17	4	3.24	.88	Accepted
Access to internet should be made cheaper	54	30	14	2	3.36	.79	Accepted
Data cost should be made low	51	21	26	2	3.21	.90	Accepted

Key; SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree

Decision Value for Remark: *Not Accepted* = 0.00-2.44, *Accepted* = 2.45-4.00

Table 6 shows the suggested solutions to the challenges inhibiting the use of mobile phone for learning among AFUED students. The table indicates that the students agreed to all the items following: internet service providers should make concerted efforts to build strong internet connectivity for the nation ($\bar{x} = 3.37$), phones with bigger screen and key sizes should be made (\bar{x}

= 3.07), right file formats of contents should be built along side with the phone ($\bar{x} = 3.13$), faster network should be selected by students ($\bar{x} = 3.42$), intruding call should be left till after lecture/learning ($\bar{x} = 3.09$), better power supply should be built by government ($\bar{x} = 3.24$), access to internet should be made cheaper ($\bar{x} = 3.36$) and data cost should be made low ($\bar{x} = 3.21$). Based on the results from this table and the mean score acceptance by the decision rule, the suggested solutions to the challenges inhibiting the use of mobile phone for learning among AFUED students are: strong internet connectivity should be built by internet service providers, phones with bigger screen and key sizes should be made, right file formats of contents should be built along side with the phone, faster network should be selected by students, intruding call should be left till after lecture/learning, better power supply should be built by government, access to internet should be made cheaper and data cost should be made low.

CONCLUSION

It can be concluded that Smart Phone facilities are used for learning and other various academic activities among Undergraduates in Adeyemi Federal University of Education, Ondo. Although, there is the Problems of high cost of data and unstable network among other issues, students still make use of Smart Phones for intellectual work and assignment. Thus, it shows that Smart phones are being use for learning among AFUED undergraduate students. However, the following are the recommendations

Recommendations

It is recommended that:

- Internet service providers should make concerted efforts to build strong internet connectivity for the nation
- Phones with bigger screen and key sizes should be made
- The right file formats of contents should be built along side with the phone
- Faster network should be selected by students
- Intruding call should be left till after lecture/learning for students to concentrate
- Better power supply should be built by government for all
- Access to internet should be made cheaper
- Data cost should be made low for students to be able to purchase them.

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