

## **Students' Attitude Towards the Use of WhatsApp Group as a Mobile Teaching and Learning Platform in Emmanuel Alayande College of Education, Oyo, Oyo State, Nigeria**

<sup>1</sup>Esther Temitope Olaniyi, <sup>2</sup>Oladoyin Grace Akinyoola, <sup>3</sup>Fisayo Oyeyemi Adeniji  
*University Library, Emmanuel Alayande University of Education, Oyo*  
*[olaniyitope91@yahoo.com](mailto:olaniyitope91@yahoo.com), [akinyoolaoladoyin@yahoo.com](mailto:akinyoolaoladoyin@yahoo.com),  
[fishayovictor01@gmail.com](mailto:fishayovictor01@gmail.com)*

### **Abstract**

*This study examined students' attitude towards the use of WhatsApp group as a mobile teaching and learning platform in Emmanuel Alayande College of Education, Oyo (EACOED). Descriptive survey design was adopted. The population for the study was 400 which was selected from 200 level student of the college. Simple random sampling technique was used in selecting 400 students (188 male and 212 female). Three research questions were raised in the study. The researchers developed questionnaire on students' attitude towards WhatsApp group for teaching and learning platform (SATWGTLTP). The reliability coefficient of the instrument yielded  $r = 0.82$ . The data collected from the administration of the research instrument were analysed using simple percentage and mean to answer the research questions. To ensure the content validity of the instrument, 30 copies were pre-tested using the NCE students of the Federal College of Education (Special), Oyo. The findings of the study revealed that students have positive attitudes towards the use of WhatsApp group as a mobile teaching and learning platform in the college. Poor network connection can affect communication in teaching and learning and erratic power supply which affects participation were some of the challenges encountered in the use of WhatsApp for teaching and learning. Based on the findings of this study, it was recommended that WhatsApp group should be adopted as a mobile teaching and learning platform in the college.*

**Keywords:** *Mobile platform, Students' attitude, Teaching and Learning, WhatsApp group*

### **Introduction**

The rapid advancement of mobile technology and increasing internet penetration has transformed the education landscape. Mobile learning has emerged as a viable complement to traditional teaching methods, offering flexibility, accessibility, and convenience. It has gained widespread acceptance among students due to its ease of use, affordability, and ubiquity. WhatsApp presents an attractive platform for educators to leverage its potential for teaching and learning. The world is continually changing due to scientific and technological advancements. The proliferation of technology has made it increasingly challenging to disconnect from its influence. Today, the Internet has firmly established itself in people's life and has become one of the most important means for both teachers and students to share and receive information (Richard & Haya, 2009). It may be impossible to fathom a young man who doesn't check social media for updates and read the news every day. According to Johnson and George (2014), social networking sites (SNSs) have become extremely popular among students in higher education. Notably, continual progress in mobile phone technology has contributed to improved communication. With the increased use of mobile technology such as

tablets, pads, iPhones, and personal computers among youths, particularly those in higher education, as well as the availability of Internet services and low-cost data, students have not only adopted this technology for communication, but also for learning (Oshionebo & Udenze, 2020).

Previous studies have researched into the use of WhatsApp, for example MI & Meerasa (2016) found that WhatsApp is perceived positively by learners as a mobile learning medium. This platform reportedly has a considerable impact on improving learners' writing skills (Fattah, 2015). According to Bouhnik and Deshen (2014), WhatsApp allows one to communicate with anyone who owns a smartphone, has an active internet connection, and has downloaded the software. WhatsApp has been deemed important by educators for use in classroom instruction and learning. According to research, students can track their activity off campus via WhatsApp, SMS, Facebook, Twitter, LinkedIn, Zoom, Skype, Telegram, Cisco Web-Ex, Wechat, Mikogo, Screenleap, Discord, Messenger, JitsiMeeting, Google Classroom, and Blogs (Dashti and Aldashti, 2015; Evans, 2014; Ajayi, 2020b).

Considering the popularity and widespread usage of the WhatsApp platform among Nigerian teenagers, it might be transformed into a mobile classroom in which all students are enrolled to engage in educational activities. WhatsApp, in particular, may be great for students because it is low-cost and allows students and teachers to communicate, talk, share ideas, and send audio and video messages as much as they want and at any time of day. Thus, this device allows instructors to provide audio feedback, which facilitates communication. As a result, it assisted students in developing knowledge and remaining engaged in their own study. WhatsApp boosted collaboration and communication between lecturers and students, allowing for lecture updates, assignment instructions, and conversations regarding course content. Lecturers can use WhatsApp to communicate with their students more quickly and efficiently. It can also help pupils communicate more effectively in any given setting (Muhammed & Umar, 2021). The group chat features can be used to organise teaching and learning both inside and outside of the school grounds, resulting in lessons that students can listen to at their leisure, as well as to maintain constant communication with students outside of class. When students are encouraged to participate in teaching and learning via social media networks, it may provide opportunities for them to improve cooperation and communication skills while also creating a learning environment in which they can be self-directed learners (Orji & Anikpo, 2019). Using WhatsApp groups, lecturers may easily and successfully manage enormous class sizes and from the researchers experience it was discovered that WhatsApp platform could be used to manage large class as it enable collaborative learning, discussions, peer-to-peer interaction and sharing of educational resources. It also enhances voice and video calls and facilitates real time communication between students, teachers and peers.

The frequency and manner of WhatsApp usage among students significantly influences their attitude towards utilising WhatsApp groups as a mobile teaching learning platform. Attitude is a person's behaviour, feelings, or predisposition towards a specific thing or object, whether good or bad, positive or negative, and it can also be a favourable or unfavourable evaluative reaction towards something or someone expressed in one belief, feelings, or intended behaviour (Donnie, Bambang, Ahmed & Nur, 2018). According to Norazah (2011), attitude is a

favourable or unfavourable evaluative reaction to something, events, and programs expressed in an individual's beliefs, feelings, emotions, or intended behaviours, whereas the teaching and learning process can be defined as the transfer of knowledge from teachers to students. It is defined as a process in which an educator identifies and establishes learning objectives, creates teaching resources, and implements a teaching and learning method. On the other hand, learning is a critical component that a teacher must consider when instructing students.

### **Statement of the Problem**

Despite the growing popularity of mobile learning, there is a significant gap in understanding students' attitudes towards utilising WhatsApp groups as a teaching and learning platform. The increasing penetration of smartphones and internet connectivity among students presents an opportunity for educators to leverage WhatsApp ubiquity and user-friendly interface to enhance learning outcomes. However, several concerns and challenges such as lack of engagement, distractions, information overload, technical issues (poor internet connectivity, device compatibility and WhatsApp limitations) and privacy concerns hinder the effective utilisation of WhatsApp groups for educational purposes.

WhatsApp has recently been a popular communication tool, particularly among students, for conversing with partners and families. Its similarity may stem from the manner it is installed in a device that students can carry about. Researchers have begun to investigate the possibilities for using it to assist students in their studies and to assess their attitudes regarding the usage of WhatsApp at college. According to the researchers' personal observations, many students have a negative attitude towards using WhatsApp groups. Against this backdrop, this study looks into students' attitudes about using WhatsApp groups as a mobile teaching and learning platform in the college.

### **Objectives of the Study**

The general objective of the study is to investigate students' attitudes towards the use of WhatsApp group as a mobile teaching and learning platform in Emmanuel Alayande College of Education (EACOED), Oyo.

The specific objectives are to:

1. investigate factors influencing students' attitudes towards the use of class WhatsApp group for teaching and learning;
2. ascertain the implications of using class WhatsApp group on teaching and learning and
3. examine the challenges faced by students while using WhatsApp group platform as mobile teaching learning.

### **Research Questions**

The following research questions were raised for the study:

1. What are the factors influencing students' attitudes towards the use of class WhatsApp group for teaching and learning?
2. What are the implications of using class WhatsApp group on teaching and learning?
3. What are the challenges faced by students while using WhatsApp group platform as mobile teaching learning?

## **Literature Review**

As a mobile teaching and learning platform, the WhatsApp group is ideal for discussing a wide range of problems. To get students thinking and accumulating knowledge about any issue, the lecturers can present different themes or problems. One can both initiate the conversation in the classroom and continue it on WhatsApp with the entire class or in small groups after class, or one can initiate the conversation on WhatsApp and continue it in the classroom. From the observation of the researchers WhatsApp can be used to provide feedback on tasks and activities, as well as for academic coaching. WhatsApp makes it much easier and faster for teachers to provide feedback on work since it allows them to send audio messages and mark all parts of the correction; it also allows lecturers to communicate with students at any time and from any location without having to wait for the next session. WhatsApp allows for both synchronous and asynchronous conversation. Podcasts and movies for educational reasons can be generated and shared over WhatsApp.

The authors also observed that the students can watch video or listen to the audio as many times as needed. Additionally, WhatsApp is perfect for inspiring and stimulating students, involving students in the teaching-learning process is crucial for ensuring that they meet both the curriculum's and their personal goals. Even when discussing situations with large classes (+/- 50 students), it is much easier for the teacher to evaluate the participation of students and reward them throughout the process than limit this to a test / examination grade. Through WhatsApp, students can feel more comfortable than during face-to-face classes to ask questions or share interests. WhatsApp provides greater levels of inclusivity as a mobile learning tool because students are all unique, some are more extroverted than others, and some have visual and other hearing impairments.

Ferreira-Meyers and Martins (2020) examined students' attitude towards the use of Whatsapp group as a mobile teaching and learning platform using descriptive design and found that students have positive attitude towards the use of WhatsApp for effective teaching and learning. It was concluded that WhatsApp is a valuable environment to ensure that teaching and learning continues beyond the classroom and can be an important motivator for lifelong learning. In another similar study conducted by Mulyono, Suryoputro & Jamil (2021) investigated the application of WhatsApp to support online learning during the COVID-19 pandemic in Indonesia using Rasch modelling technique were conducted to evaluate the survey. A total of 202 students from three different departments at an Indonesian private university participated in an online survey. Result revealed that most students accepted social media use to support learning and felt connected to the learning. The findings also identified several drivers that promoted the high level of acceptance and connectedness to learning, such as students' perceived usefulness, availability of learning support, motivation, and connectedness with their friends.

Ajayi and Olajide (2022) examined the effects of WhatsApp group learning platform on senior secondary schools students' learning outcomes in Science, Technology, and Mathematics (STM) in Ekiti State, Nigeria. The sample comprised 100 SS II students from two public secondary schools in Ekiti State who were randomly selected from their classrooms. A multistage sampling technique was used to pick the sample. Result revealed that WhatsApp had

significant effect on learning outcome of secondary school students. It was recommended that the WhatsApp Group Learning Platform should be used to improve students' performance in STM. Ahmad (2020) examined students' attitude towards using WhatsApp for educational activities at federal university Dutsinma, Katsina state, Nigeria using descriptive survey design. The sample size comprised of 101 undergraduate and postgraduate students who were randomly selected from the different stratified levels of clustered departments. Results revealed that there was positive and high level of attitude towards WhatsApp among the students. It also showed how the students use the application in various modes. The general findings confirmed that WhatsApp is being used as an academic tool for both teaching and learning in Federal University Dutsinma.

Irmayanti (2021) examined students' perceptions and attitude on the use of WhatsApp as a mobile learning platform in learning English. Result shows that there were three challenges faced by students in using WhatsApp as a mobile learning platform namely, students did not understand the material, bad network and internet data. Based on the data obtained, the researcher concludes that students gave negative perceptions on the use of WhatsApp as a mobile learning platform in learning English. Alabi, Falode, Ilobeneke (2019) investigated the effect of technology supported instructional platforms on undergraduate students' attitude towards educational technology in public universities in Nigeria using a quasi-experimental research design. Result showed that students have positive attitude towards the use of WhatsApp for teaching and learning. It was also revealed that the frequency of use of WhatsApp by students was on a daily basis. It was recommended that for effective teaching and teacher-learner interaction WhatsApp should be used by lecturers and students to provide and supplement their teaching and learning materials respectively.

The platform shows a variance on balancing online activities (WhatsApp) and academic preparation, and distracts students from completing their assignments and adhering to their private studies time table. However, students enjoy using WhatsApp as a tool for learning and calls for institutions to offer internet amenities as a top urgency in contemporary instruction. Sari (2018) examined undergraduate students' attitudes to the implementation of WhatsApp group as their learning media in the EFL classroom in Indonesia using descriptive survey and result showed that the students significantly had a very positive attitude towards the implementation of WhatsApp Group. It was also found that that messages overloading; erratic power supply, mistyping, and slow internet connection were the most problems occurred.

### **Research Methodology**

The study investigated students' attitude towards the use of WhatsApp group as a mobile learning platform in Emmanuel Alayande College of Education, Oyo. The study adopted descriptive survey design was adopted. The population for the study is 400 which was selected from the 200 level students of EACOED, Oyo. Simple random sampling technique was used in selecting 400 students (188 males and 212 female). The research was guided with three research questions. The researchers developed questionnaire on students' attitude towards whatsapp group for teaching and learning platform (SATWGTLP). The questionnaire contains 30 items. The reliability coefficient of the instrument yielded  $r = 0.82$ . To ensure the content validity of the instrument, 30 copies was pre-tested using the

NCE students of the Federal College of Education (Special), Oyo. The data collected from the administration of the research instrument were analysed using simple percentage and mean to answer the research questions.

### Data Analysis and Results

**Table 1: Demographic Distribution of the Respondents**

Variables		Frequency	Percentage
<b>Gender</b>	Male	188	47.0
	Female	212	53.0
<b>Age</b>	15-20 years	185	46.2
	21-25 years	153	38.3
	26-30 years	62	15.5
<b>School</b>	Arts & Social Sciences	82	20.5
	ECCPED	57	14.3
	Education	141	35.3
	Languages	55	13.8
	Sciences	38	9.5
	VTE	27	6.8

Table 1 reveals that 188 (47.0%) were males and the rest 212 (53.0%) were females. This means that females participated more in the study than their male counterparts. Also, 185 (46.2%) of the respondents were between the age range of 15-25 years, 153 (38.3%) were between 21-25 years, and the rest 62 (15.5%) were between 25-30 years. It could be inferred that the respondents whose age fell between 15-20 years were the majority. However, 84.5% of the respondents were below 26 years implying that more than half of the students were below 26 years old. 82 (20.5%) were in Arts & Social Sciences, 57 (14.3%) were in ECCPED, 141 (35.3%) were in Education, 55 (13.8%) were in Languages while 38 (9.5%) were in Sciences and the remaining 27 (6.8%) were in VTE. This means that respondents who were from Education participated more in the study.

Are you computer literate	Frequency	Percentage
Yes	395	98.8
No	5	1.2

It was revealed that 98.8% of the respondents were computer literate while 1.2% were not literate.

**Research question 1:** What are the factors influencing NCE II students attitudes towards the use of class WhatsApp group for teaching and learning?

**Table 2: Respondents attitudes towards the use of class WhatsApp group for teaching and learning**

S/N	Items	Yes	No
1.	WhatsApp Group is simple and easy to use.	398 (99.5%)	2 (0.5%)
2.	WhatsApp Group usage is free	400 (100%)	0 (0.0%)
3.	WhatsApp Group is down-loadable.	400 (100%)	0 (0.0%)
4.	WhatsApp Group usage is end - to- end encrypted.	397 (99.3%)	3 (0.7%)
5.	WhatsApp Group is interesting and motivating	360 (90%)	40 (10%)
6.	WhatsApp group brings sense of belongingness.	373 (93.3%)	27 (6.7%)
7.	Are you aware your class has a WhatsApp group platform	382 (95.5%)	18 (4.5%)
8.	Are you aware of the rules and regulations of the of the platform	325 (81.2%)	75 (18.8%)
9.	In your WhatsApp group platform, do you have administrators monitoring the activities of the platform	400 (100%)	0 (0.0%)
10.	Do the administrators perform their duties as expected	392 (98.0%)	8 (2.0%)
11.	Do you always abide with the laid down rules and regulations.	381 (95.2%)	19 (4.8%)

Table 2 showed the attitudes towards the use of class WhatsApp group for teaching and learning. It could be revealed that all the respondents 400 (100%) affirmed that WhatsApp group usage is free, 400 (100%) affirmed that in their WhatsApp group platform they do have administrators monitoring the activities of the platform.

It could be concluded from the table that the attitude of students towards the use of class WhatsApp group for teaching and learning is positive. This means that students are very active in the use of WhatsApp for their academic activities.

**Research question 2:** What are the implications of using Class WhatsApp group on teaching and learning?

**Table 3: Implications of using class WhatsApp group on teaching and learning**

S/N	Item	S A	A	SD	D
1.	I enjoy the use of WhatsApp group platform as a mobile teaching and learning	231 (57.8%)	110 (27.5%)	50 (12.5%)	9 (2.2%)
2.	It is difficult to access and use notes, messages and other materials used in mobile teaching and learning from WhatsApp group platform	244 (61.0%)	122 (30.5%)	31 (7.7%)	3 (0.7%)
3.	WhatsApp group platform for mobile teaching and learning is not helping and useful in sharing educational activities and materials	87 (21.7%)	90 (22.5%)	198 (49.5%)	25 (6.3%)
4.	Using WhatsApp group platform for mobile teaching and learning destroys social relationships and academic achievement	34 (8.5%)	41 (10.2%)	212 (53.0%)	113 (28.2%)
5.	Mobile teaching and learning with WhatsApp group platform destroys students manners	62 (15.5%)	96 (24.0%)	229 (57.2%)	13 (3.2%)
6.	Mobile teaching and learning with WhatsApp group platform	112 (28.0%)	216 (54.0%)	50 (12.5%)	22 (5.5%)



	encourages truancy on the part of the lecturers and students				
7.	Mobile teaching and learning with WhatsApp group platform is a waste of time and efforts if not careful	67 (16.7%)	167 (41.7%)	142 (35.5%)	24 (6.0%)
8.	Mobile teaching and learning with WhatsApp group platform enhances reading and writing	99 (24.7%)	146 (36.5%)	123 (30.7%)	32 (8.0%)
9.	Mobile teaching and learning with WhatsApp group platform is helpful in achieving educational goals	118 (29.5%)	196 (49.0%)	70 (17.5%)	8 (2.0%)
10.	Mobile teaching and learning with WhatsApp group platform is an appropriate platform for creation of interaction between the lecturer and the students	55 (13.7%)	119 (29.7%)	217 (54.2%)	9 (2.2%)
11.	Mobile teaching and learning with WhatsApp group platform provides secured environment for both the lecturers and students	84 (21.0%)	127 (31.7%)	198 (49.5%)	13 (3.2%)

Table 3 showed the implications of using class WhatsApp group on teaching and learning. It is revealed that 341(85.3%) agreed that they enjoy the use of WhatsApp group platform as mobile for teaching and learning. While 59 (14.7) disagree. It is revealed that 366 (91.5%) agreed that it is difficult to access and use

notes, messages and other materials used in mobile teaching and learning from WhatsApp group platform while 34 (8.4%) disagreed. 328 (82.0%) agreed that mobile teaching and learning with WhatsApp group platform encourages truancy on the part of the lecturers' and students while 72 (18.0%) disagreed. Also, 314 (78.5%) agreed that mobile teaching and learning with WhatsApp group platform is helpful in achieving educational goals while 78 (19.5%) disagree.

It could be inferred that the implication of using WhatsApp for teaching and learning are, it could breed truancy from the part of the students and lecturers and it is difficult to access and use notes, messages and other materials used in mobile teaching and learning from WhatsApp group platform.

**Research question 3:** Challenges faced by students while using WhatsApp group platform as mobile teaching learning?

**Table 4: Challenges** faced by students while using WhatsApp group platform as mobile teaching learning?

S/N	Item	SA	A	SD	D
1.	WhatsApp group leads to message flooding in teaching and learning.	134 (33.5%)	191 (47.8%)	50 (12.5%)	7 (1.8%)
2.	WhatsApp group wastes and consumes time in teaching and learning.	101 (25.2%)	187 (46.7%)	81 (20.3%)	5 (1.3%)
3.	Using WhatsApp group for teaching and learning can lead to eyes defect.	47 (11.7%)	85 (21.2%)	240 (60.0%)	28 (7.0%)
4.	Using WhatsApp group is stressful for teaching and learning.	114 (28.5%)	195 (48.7%)	12 (3.0%)	69 (17.2%)
5.	I am always scared of contributing to teaching and learning using whatsApp group because I might make errors.	87 (21.0%)	161 (40.2%)	48 (12.0%)	104 (26.0%)
6.	WhatsApp group platform allows posting of unrelated and irrelevant contents.	121 (30.2%)	185 (46.2%)	31 (7.7%)	63 (15.7%)

7.	Poor network connection can affect communication in teaching and learning.	130 (32.5%)	217 (54.2%)	12 (3.0%)	41 (10.2%)
8.	Erratic power supply affects participation.	112 (30.5%)	242 (60.5%)	6 (1.5%)	40 (10.0%)
9.	WhatsApp group can be disrupted by hackers.	93 (23.2%)	224 (56.0%)	42 (10.5%)	41 (10.2%)

Result from Table 4 showed the challenges encountered by students towards the use of WhatsApp group platform as a mobile teaching and learning. It is revealed that some of the challenges encountered by students in the use of WhatsApp group are: WhatsApp group leads to message flooding in teaching and learning, poor network connection can affect communication in teaching and learning, erratic power supply affects participation, WhatsApp Group platform allows posting of unrelated and irrelevant contents.

### **Discussion of the Findings**

Result from research question one revealed that the attitude of students towards the use of class WhatsApp group for teaching and learning is positive. The finding lends credence with that of Ajayi and Olajide (2022) who examined the effects of WhatsApp group learning platform on senior secondary schools students' learning outcomes in Science, Technology, and Mathematics (STM) in Ekiti State, Nigeria and the results revealed that there was positive and high level of attitude towards WhatsApp group among the students. It also showed how the students use the application in various modes. The general findings confirmed that WhatsApp is being used as an academic tool for both teaching and learning in EACOED, Oyo. The finding also supports that of Alabi, Falode, Ilobeneke (2019) who investigated the effect of technology supported instructional platforms on undergraduate students' attitude towards educational technology in public universities in Nigeria using a quasi-experimental research design and reported that students have positive attitude towards the use of WhatsApp for teaching and learning.

Result from research question two showed that implication of using WhatsApp for teaching and learning are, it could breed truancy from the part of the students and lecturers and it is difficult to access and use notes, messages and other materials used in mobile teaching and learning from WhatsApp group platform. The finding corroborates that of Mbukusa (2018) who examined the perceptions of students' on the use of WhatsApp in teaching methods of English as second language at the University of Namibia using descriptive survey and reported that WhatsApp can impact negatively on the performance of tertiary students, especially those who do not own smartphones. The platform shows a variance on balancing online activities (WhatsApp) and academic preparation, and distracts

students from completing their assignments and adhering to their private studies time table. However, students enjoy using WhatsApp as a tool for learning and calls for institutions to offer internet amenities as a top urgency in contemporary instruction.

Result from research question three showed that WhatsApp group leads to message flooding in teaching and learning, poor network connection can affect communication in teaching and learning, erratic power supply affects participation, WhatsApp group platform allows posting of unrelated and irrelevant contents were some of the challenges encountered by students using WhatsApp for teaching and learning. The finding validates that of Irmayanti (2021) who examined students' perceptions and attitude on the use of WhatsApp as a mobile learning platform in learning English and reported that there were three challenges faced by students in using WhatsApp as a mobile learning platform namely, students did not understand the material, bad network and internet data. The finding also supports that of Sari (2018) who examined undergraduate students' attitudes to the implementation of WhatsApp group as their learning media in the EFL classroom in Indonesia using descriptive survey and reported that messages overloading, erratic power supply, mistyping, and slow internet connection were the most problems occurred.

### **Conclusion**

It could be concluded that WhatsApp is a beneficial free programme for instant chatting. Text messaging on mobile devices enables synchronous and asynchronous message sending and receiving. The WhatsApp instant messaging platform is straightforward, user-friendly, and incredibly simple to use. Learning is becoming more personal and is becoming increasingly based on online social interactions that enable collaborative, networked and portable processes with the use of WhatsApp.

### **Recommendations**

It is therefore recommended that:

1. Lecturers in colleges of education should be encouraged to explore other ways of regular meeting and interaction with the students, using WhatsApp application in this technological area which could enhance teaching and learning.
2. Lecturers should supplement their classroom teaching with newer technologies such as WhatsApp group discussion and post materials on the platform for students to read and prepare for their test and examination.
3. Students are encouraged to improve understanding in the use of WhatsApp in their learning activities as this would bring the classroom closer to them by asking questions as they receive quick answers.
4. The use of mobile phones should be controlled in lecture rooms to restrict students chat during lectures.
5. Internet facilities should be provided and the bandwidth should be very strong for effective teaching and learning.

### **References**

Adams, D., Sumintono, B., Mohammed, A. and Mohamad Noor, N.S. (2018). E-Learnig readiness among students of diverse backgrounds in a leading

- Malaysian higher education institution. *Malaysian Journal of Learning and Instruction*, 15(2), 227– 256.
- Ahmad, S. A. (2020). Students' attitude towards using whatsapp for educational activities at federal university Dutsin-ma, Katsina state, Nigeria. *FUDMA Journal of Sciences*, 4 (2), 749 – 757
- Ajayi, L. F., & Olajide, O. I. (2022). Effects of Whatsapp group learning platform on senior secondary schools students' learning outcomes in Science, Technology, and Mathematics (stm) in Ekiti State, Nigeria. *Educational Research and Reviews*, 17(8), 213-218.
- Ajayi, P. O. (2020). Influence of Whatsapp group learning platform on senior undergraduates' study habit in basic science education in, Nigerian universities. *EKSU Journal of Education*, 9(2), 70 – 75.
- Alabi, T. O., Falode, O. C. & Ilobeneke, S. C. (2019). Effect of technology supported instructional platforms on undergraduate Students' attitude towards educational technology in public Universities in Nigeria. *African Research Journal of Education and Social Sciences*, 6(2), 53-62.
- Bouhnik, D. and Deshen, M. (2014). WhatsApp goes to school: Mobile instant messaging between teachers and students. *Journal of Information Technology Education (JITE)*, 13, 217 – 231
- Dashti, F. and Aldashti, A.A. (2015). EFL college students' attitudes towards mobile learning. *Journal of Education International Studies*, 8(8), 13 – 20
- Davis, F.D., 1989. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 319 –340
- Evans, C. (2014). Twitter for teaching: Can social media be used to enhance the process of learning? *British Journal of Educational Technology*, 45(5), 902 – 915.
- Fattah, S. F. E. S. A. (2015). The effectiveness of using a whatsapp messenger as one of mobile learning technique to develop students' writing skills. *Journal of Education and Practice*, 6(32), 115 –127
- Ferreira-Meyers, K. & Martins, J. (2020). The use of Whatsapp in today's mobile language teaching and learning. *ITM Web of Conferences*, 33, 03007.
- Irmayanti, E. (2021). Students' perceptions on the use of whatsapp as a mobile learning platform in learning English. Unpublished master's thesis. Makassar Muhammadiyah University.
- Johnson, Y. and George, D.E. (2014). The impact of WhatsApp messenger usage on students' performance in tertiary institutions in Ghana. *Journal of Education and Practice*, 5 (6), 78–89
- Mbukusa, N. R. (2018). Perceptions of students' on the Use of WhatsApp in Teaching 'Methods of English as Second Language at the University of Namibia. *Journal of Curriculum and Teaching*, 7 (2), 112-119
- Mi, G. M. and Meerasa, S. S. (2016). Perception on M-Learning through WhatsApp application. *Journal of Educational Technology in Health Science*, 3(2), 57 – 60
- Muhammed, W. and Umar, F. (2021). Use of whatsapp for educational purposes. Online.
- Mulyono, H. Suryoputro, G., & Jamil, S. R. (2021). The application of WhatsApp to support online learning during the COVID-19 pandemic in Indonesia. *Heliyon* 7 (07)1-8.
- Munna, S.A and Kalam, M. A (2021). Teaching and learning process to enhance teaching effectiveness: a literature review. *International Journal of Humanities and Innovation*, 4 (1) 2021 pp. 1-4

- Norazah, M. S. (2011). Subscribers' intention towards using 3G mobile services. *Journal of Economics and Behavioural Studies*, 2(2), 67 – 75.
- Orji, A. and Anikpo, F. (2019). Social media in teaching-learning process: Investigation of the use of whatsapp in teaching and learning in university of Port Harcourt. *European Scientific Journal*, 15(4), 15 – 39.
- Richard, H. and Haya, A. (2009). Examining student decision to adopt web 2.0 technologies: theory and empirical tests. *Journal of Computing in Higher Education*, 21(3), 183 – 198.
- Sari, F. M. (2018). Undergraduate students' attitudes to the implementation of whatsapp group as their learning media in the efl classroom. *International Conference on English Language Teaching and Learning*, 1-8.
- Udenze, S and Oshionebo, B. (2020). Investigating whatsapp for collaborative learning among undergraduates. *Etikilesim*, 5, 24 – 50