Usage and Challenges of E-Learning during The Covid-19 Pandemic: A Study Of WhatsApp And Zoom

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USAGE AND CHALLENGES OF E-LEARNING DURING THE COVID-19 PANDEMIC: A STUDY OF WHATSAPP AND ZOOM

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Abstract

This study examined e-learning during the COVID-19 pandemic with focus on the use of Whatsapp and Zoom. The main objective of the study was to examine influence of the use of WhatsApp and Zoom for e-learning on postgraduate students' academic activities in Rivers State University, Port Harcourt. The study was guided by the technological determinism theory. The descriptive survey research design was adopted in the study, while purposive sampling technique was used to identify 351 postgraduate students of Rivers State University that utilised the e-learning method during the period of the 2020 COVID-19 pandemic. Questionnaire was used to elicit information from the respondents. Findings of the study showed that the use of WhatsApp and Zoom for e-learning did not generate better understanding of the lectures being taught when compared to the traditional classroom teaching method. Also, findings showed that some of the challenges faced by the students in utilising the WhatsApp and Zoom platforms for e-learning were distractions from the environment, Internet failure and the challenge of meeting up with data expenses. The study recommended that lecturers should ensure that class sessions are interactive and participatory. Also, the government should provide free Internet access to students in tertiary institutions. This would help them have access to more resource materials for their academic activities.

Keywords: WhatsApp, Zoom, E-learning, COVID-19 pandemic, undergraduate students

Introduction

The emergence of new technologies in recent times has enabled us to adopt information and communication technologies (ICTs) in almost every aspect of our lives. These technologies have become so relevant in our society that a wide variety of applications have arisen to attend to several purposes in areas like entertainment, administration, robotics, education, companies, etc. Using technology for e-learning has become beneficial today and a lot of institutions have adopted this system of learning. E-learning is a unifying term used to describe the areas of the Network and the technology directions. E-learning encompasses information and communications technology on websites, personal computers, mobile phones, learning management system, radio, and other forms of technologies that enhance teaching and reading. These systems require the application and usage of information and communications technology (Oye, Salleh & Iahad, 2010).

The COVID-19 pandemic which occurred in the year 2020 disrupted education in a lot of countries all over the world. During the early phase of the COVID-19 pandemic, institutions of higher education had to adopt the implementation of remote learning modalities as an emergency response. A lot of educational institutions in Nigeria adopted this alternative to the traditional learning method as a way to ensure that students were not left without a means of teaching them while efforts were made to prevent the spread of the coronavirus. This was necessary because social gatherings in educational institutions were considered an avenue for the virus to further spread. WhatsApp and Zoom which are popular social media platforms among Nigerians were adopted in Rivers State University, Port Harcourt for teaching, learning and sharing documents for postgraduate students. The switch to e-learning was a big challenge to most of the countries in developing countries, however, remote learning being an advancement in learning methods is a feat that had already been practiced by some institutions in the past and such institutions would not find much difficulties in using it. Before now, some programs and courses in some universities were already taught using several e-learning methods. However, during the pandemic all courses were switched to e-learning methods with the students of different ages spending long hours over their laptops, computers, and smart devices (Sundarasen, 2020).

E-learning recently became a significant priority with the advances in educational technologies, and many institutions of higher learning adopted its use for e-learning programs. This has also been rapidly emerging various higher education institutions in Nigeria. Shahbaz (2016) says that the immersive usage of ICT-based teaching and learning strengthens the desires of the student to learn and to use the information gained to solve social and economic problems in real life. Zameni (2011) says that the characteristics of ICT-based learning shifts the position of instructor and pupil, promotes learning and contribute to immersive learning and autonomy for learners and self-reliability. E-learning encourages multiple students in higher education to pursue related program simultaneously. Also, college education programs have now evolved to open systems for knowledge exchange. E-learning systems enable a method of education aimed at enhancing high quality in the teaching and higher education of students (Heeger, 2010).

The severity of the coronavirus was very catastrophic, so the closing of colleges and schools was one of the effects during the COVID-19 pandemic. There was also an inescapable need to use technology in education for educational purposes during the pandemic; after a number of reports raised the issue. The use of WhatsApp and Zoom for e-learning during the period of the COVID-19 pandemic therefore, served a beneficial purpose for the students to keep up with academic educational activities. Though there were resulting challenges in adopting e-learning as an emergency response, the continuity in academic activities despite that pandemic was worthwhile. For both students and educational institutions, utilizing and implementing new technologies in learning has achieved tremendous success in enhancing academic activities in today's increasingly globalized environment.

Statement of the Problem

The creation and development of new communication technologies has allowed educational institutions to make of use modern methods of teaching and learning, so as to avail themselves of barriers to space and time. With the unexpected closure of educational institutions in the year 2020 to cushion the spread of coronavirus, school authorities adopted alternatives to traditional classroom learning methods so that students would be able to continue with their academic activities. To this end, different educational institutions including Rivers State University adopted WhatsApp and Zoom, which are social media platforms, for e-learning. This enabled the postgraduate students to stay at home and learn until the effect of the COVID-19 crises subsided. This adoption was met with challenges for lecturers and learners, for some, especially for those who partook in the e-learning activities as their first experience.

Using Internet enabled applications such as WhatsApp and Zoom for learning for learning has several advantages, however, its use for e-learning has been linked with distraction. In fact distraction has become a big issue that interferes and even impairs students' attention, especially when they engage in e-learning. For instance students can be frequently distracted by calls and social media platforms like Facebook, Twitter, WhatsApp, etc. on their smartphones during e-learning. With a lack of instructor-student interaction, the efficacy of the e-learning process in question. But, one wonders about effectiveness of the use of WhatsApp and Zoom to impart knowledge. Also, it is also not known how the students perceived the process of e-learning during the period of the COVID-19 pandemic. It is for these reasons that the researcher embarked on this study.

Objective of the Study

The main objective of the study was to examine influence of the use of WhatsApp and Zoom for e-learning on postgraduate students' academic activities. The specific objectives are to:

1. find out the extent to which the use of WhatsApp and Zoom for e-learning influenced postgraduate students' academic activities;
2. find out whether the use of WhatsApp and Zoom for e-learning generated better understanding of the lectures being taught when compared to the traditional classroom teaching;
3. determine the challenges faced by the students in utilising WhatsApp and Zoom for e-learning during the COVID-19 pandemic.

Theoretical Foundation

Technological Determinism Theory

This theory was propounded by Marshal McLuhan in 1962. The theory purports that society is influenced and shaped by technological development. Society has to adjust and adapt to new technologies and innovation. Technological determinism states that technology shapes how individuals in a society thinks, feels, acts and how a society behaves as it moves from one technological age to the other (Macaulay et al., 2021).

This technological determinism theory explains that changes in communication modes largely determine the course of history. This goes to show that the explosion in information technology would be followed by change, both culturally, socially and economically. The theory argues that in each cultural era the medium in which information is recorded and transmitted is decisive in determining the character of that culture. Most interpretations of technological determinism share two general ideas: that the development of technology itself follows a predictable, traceable path largely beyond cultural or political influence, and that technology in turn has effects on societies that are inherent, rather than socially conditioned or produced because that society organizes itself to support and further develop a technology once it has been introduced (Ukonu, 2006).

The theory explains that the media determines the content of communication. The medium has the power to manipulate the perception of the world. Mass communication has become the dominant form of interaction. Messages are crafted to conform to the medium like films and television, tools and audio recording. Marshal said that invention in technology invariably causes cultural change as opposed to Karl Max's theory of economy determinism where production, makes changes in history. McLuhan sees every medium as an extension of the human being by affecting the way they perceive the world (Asemah, 2011).

The central believe of this theory lies in the inevitable power of technologies to cause widespread social change (Williams, 1990). The theory emphasizes the importance of the medium and subsequently, the influence which the medium can have on the audience. Elucidating on this, Nwodu (2004) opined that the theory shows not only that the medium, rather than the content of communication influence both audience and the operators and that, the communication technologies are turning the world into a global village.

The core essence of this theory is that technology is a major factor which influences social behaviour and changes the way people go about their lives in society. Griffins (2000) opined that theory "regards our present culture upheaval as a direct result of the information explosion fostered by television and the computers" (p. 289). McQuail (2005) calls it media – centric theory where he states that the theory sees mass media as a primary mover in social change, driven forward by irresistible developments in communication technologies. History shows several apparent trends but especially a shift over time in the direction of more speed, greater dispersion, wider reach and greater flexibility. They underline the capacity for communication more readily to cross barriers of time and spaces.

Conceptual Review

History of COVID-19 Pandemic

The coronavirus disease 2019 (COVID-19) was first reported in Wuhan, China, in 2019, and subsequently spread globally to become the fifth documented pandemic since the 1918 flu pandemic (Iheanacho et al., 2021). The first official cases of COVID-19 were recorded on the 31st of December, 2019, when the World Health Organization (WHO) was informed of cases of pneumonia in Wuhan, China, with no known cause. On the 7th of January, the Chinese authorities identified a novel coronavirus, temporally named 2019-nCoV, as the cause of these cases. Weeks later, the WHO declared the rapidly spreading COVID-19 outbreak as a Public Health Emergency of International Concern on the 30th of January 2020. It was not until the following month, however, on the 11th of February that the coronavirus got its official name - COVID-19. Nine days later, the US Centers for Disease Control and Prevention (CDC) confirmed the first person to die of COVID-19 in the country. The individual was a man in his fifties who lived in Washington State (Moore, 2022).

To tackle the pandemic, strict measures were put in place around the world. Social distancing and travel restrictions began to come into force in March, 2020, along with advice on proper hand-washing techniques. However, these measures were predicted to only slow the spread of the virus, scientists understood that to overcome the pandemic, a vaccine needed to be developed. On the 17th of March, 2020, the first COVID-19 human vaccine trials begin with the Moderna mRNA vaccine. It was clear that initial restrictions were not enough to stop the spread of COVID-19. Quickly, restrictions in most regions became harsher, with the UK enforcing a stay-at-home rule on the 26th of March. Many European countries implemented their own national lockdown around this time. By the 2nd of April, total global COVID-19 cases had shot up to 1 million. The coronavirus affected the world and stalled educational activities in various educational institutions. This also affected educational institutions in Nigeria that had to device was to carry on their academic activities through e-learning methods.

E-Learning during the COVID-19 Pandemic

E-learning refers to the use of new technologies in the service of learning and or learner support (Laurillard, 2006). It includes the delivery of content via the Internet, intranet, audio- and videotape, satellite broadcast, interactive TV and CD-ROM. Zameni (2011) says that e-learning is the use of interactive education platforms such as machines, the Internet, multimedia disks, electrical papers, simulated newscasts for the purposes of minimizing time and costs to develop, speed up and promote learning. Heeger (2010) says that e-learning entails the usage and use of a broad spectrum of resources and methods including e-mails, web pages, journals, social and business networking, and links to programs supplied exclusively electronically. The formal learning system with the help of electronic

resources is known as e-learning. Whereas teaching can be inside (or outside) the classrooms, the use of computer technology and the Internet is the main component of e-learning (Aboagye, et al., 2020). Education channels may be numerous, but colleges of higher education deliver education services that utilize the Internet or the Network to enhance the academic success of students. E-learning is essentially a form of guidance and learning through the internet, the device or the standalone personal computer, following (Oye, 2010). Through a different angle Heeger describes e-learning in an effectively teaching and learning format as a networking term. Web-based teaching, computer-based research, multimedia lessons and electronic enterprise are the basics of the E-learning programs (Heeger, 2010). The software offers channels for information material transmitted on web intranet or extranet, MP3s, satellite TVs and CD-ROMs for audio or even movie.

The unexpected closure of educational institutions as a result of the emergence of COVID-19 prompted the authorities to suggest adopting alternatives to traditional learning methods in emergencies to ensure that students are not left without studying and to prevent the epidemic from spreading. The traditional educational methods were replaced by e-learning when the COVID-19 virus appeared because social gatherings in educational institutions are considered an avenue for the virus to spread. Lizcano, et al. (2020) are of the view that e-learning became the best option available to ensure that virus do not spread so fast, as it guarantees spatial distancing despite the challenges and studied figures, which indicate that students are less likely to benefit from this type of education.

Methodology

This research adopted the descriptive survey design. This design is appropriate when the opinion of respondents want to be sampled (Onyebuchi et al. 2023). The population of study comprised 4000 postgraduate students of Rivers State University (Source: Postgraduate School Officer). The sample size of the study was determined using the Krejcie and Morgan table to be 351. The researcher used purposive sampling technique to identify postgraduate students that used WhatsApp and Zoom platform to learn during the period of the COVID-19 pandemic in 2020. The research instrument used for this study was questionnaire. Data were presented on frequency distribution tables, while simple percentage was used to analyse the data generated.

Data Presentation

Out of a total of 351 questionnaire copies that were administered to respondents, 330 were returned. The data is presented thus:

Table 1: Extent of influence of learning via WhatsApp and Zoom on researching skill

No.	Category	Frequency	Percentage
1	High	70	21.2
2	Moderate	153	46.3
3	Low	96	29
4	Can't say	11	3.3
	Total	**330**	**100**

Table 1 shows the extent of influence of learning via WhatsApp and Zoom on researching skill. The data indicates that 46.3% of the respondents are of the view that learning via WhatsApp and Zoom influenced

students' researching skills at a moderate extent, while 29% of the respondents are of the view that influenced students' researching skills at a low extent.

Table 2: Extent of influence of learning via WhatsApp and Zoom on study habit

No.	Category	Frequency	Percentage
1	High	55	16.6
2	Moderate	187	56.6
3	Low	72	21.8
4	Can't say	16	4.8
	Total	**330**	**100**

Table 2 shows the extent of influence of learning via WhatsApp and Zoom on students' study habit. The responses indicate that 56.6% believe that learning via WhatsApp and Zoom influenced students' study habit at a moderate extent, while 21.8% believe that learning via WhatsApp and Zoom influenced students' study habit at a low extent.

Table 3: Extent of influence of learning via WhatsApp and Zoom on grades

No.	Category	Frequency	Percentage
1	High	48	14.5
2	Moderate	178	53.9
3	Low	89	26.9
4	Can't say	15	4.5
	Total	**330**	**100**

Table 3 shows the extent of influence of learning via WhatsApp and Zoom on students' grades. The responses indicate that 53.9% are of the view that learning via WhatsApp and Zoom influenced students' grades at a moderate extent, while 26.9% believe that learning via WhatsApp and Zoom influenced students' grades at a low extent.

Table 4: Learning method that eases better understanding of lectures

	Category	Frequency	Percentage (%)
1	Teaching Via WhatsApp and Zoom	97	29.3
2	Traditional classroom teaching	229	69.3
3	Can't tell	4	1.2
	Total	**330**	**100**

Table 4 examines the learning method that eases better understanding of lectures. The data point that 69.3% of the respondents are of the view that the traditional classroom teaching method eases understanding of lectures, while 29.3% are of the view that teaching via WhatsApp and Zoom eases understanding of lectures. This means that majority of the respondents believe that traditional classroom teaching method eases understanding of lectures.

Table 5: Whether using WhatsApp and Zoom eased note taking during class sessions

	Category	Frequency	Percentage (%)
1	Yes	85	25.7
2	No	231	70
3	Can't tell	14	4.2
	Total	**330**	**100**

Table 5 examines whether using WhatsApp and Zoom eased note taking during class sessions. The data shows that 70% of the respondents are of the view that learning via WhatsApp and Zoom did not ease note taking during class sessions, while 25.7% of the respondents hold a contrary view. This implies that more than half of the respondents believe that that learning via WhatsApp and Zoom did not ease note taking during class sessions.

Table 6: Distractions from surroundings while using WhatsApp and Zoom for e-learning

	Category	Frequency	Percentage (%)
A	Yes	176	53.3
B	No	151	45.7
C	Can't tell	3	0.9
	Total	**330**	**100**

Table 6 examines whether distractions from surroundings while using WhatsApp and Zoom for e-learning. The data shows that 53.3% of the respondents are of the view that there were distractions from surroundings while using WhatsApp and Zoom for e- learning, while 45.7% of the respondents hold a contrary view. This implies that distraction was a notable factor in using WhatsApp and Zoom for e-learning.

Table 7: **Internet failure while using WhatsApp and Zoom for e-learning**

	Category	Frequency	Percentage (%)
A	Yes	230	69.6
B	No	91	27.5
C	Can't tell	9	2.7
	Total	**330**	**100**

Table 7 examines whether there was Internet failure while using WhatsApp and Zoom for e-learning. The data shows that 69.6% of the respondents are of the view that Internet failure while using WhatsApp and Zoom for e-learning, while 27.5% of the respondents hold a contrary view. This implies that Internet failure was a notable factor in using WhatsApp and Zoom for e-learning.

Table 8: Respondents' view on whether data expenses were challenging to meet up with when using WhatsApp and Zoom for e-learning

	Category	Frequency	Percentage (%)
A	Yes	232	70.3
B	No	84	25.4
C	Can't tell	14	4.2
	Total	**330**	**100**

Table 8 examines whether data expenses were challenging to meet up with when using WhatsApp and Zoom for e-learning. The data shows that 70.3% of the respondents acknowledged the challenge of meeting up with data expenses, while 25.4% of the respondents did not consider it challenging. The implication here is that for more than half of the respondents, the data expenses of using WhatsApp and Zoom for e-learning was challenging to meet up with.

Discussion of Findings

Objective 1: Find out the extent to which the use of WhatsApp and Zoom for e-learning influenced postgraduate students' academic activities

With the impact of the COVID-19 pandemic in the year 2020, it became necessary for different institutions to adopt measures to check its spread (Moore, 2022). However, with the COVID-19 pandemic, it was inevitable to adopt the technology (Williams, 1990) which has become very useful in the present time for learning purposes. In Rivers State University, there seem to be a moderate impact of a switch in learning system necessitated by the COVID-19 pandemic. This is shown on Table 1 where 46.3% believe that learning via WhatsApp and Zoom influenced students' researching skills at a moderate extent. In the same vein influence of learning via WhatsApp and Zoom on students' study habit on Table 2 and students' grades on Table 3 was at a moderate extent with 56.6% and 53.9% respectively.

During the COVID-19 pandemic, e-learning for the students was done by using social media application like WhatsApp and Zoom, while voicenotes, video clips and documents were also shared to enhance learning. The lecture is brought to them in their comfort zones and all they need to do is connect to the class session with their electronic devices and log out when the class session is over. This saves them the time and reduces the burden of moving to classrooms to learn. Therefore, it is expected that the students should take advantage of that ease which the WhatsApp and Zoom technology offers them, and use their time for more academic productive purposes. The use of WhatsApp and Zoom technology for classroom teaching during the period of the COVID-19 pandemic, however, reflects the tenets of the technological determinism theory in the sense that it became necessary to adopt a technology that has been introduced to the society (Ukonu, 2006) to supplement for the traditional classroom teaching method. This enabled distance learning so that academic activities would still go on while enforcing the stay-at-home order to check the spread of the coronavirus. The application of e-learning using Zoom for virtual classes and WhatsApp to share documents and engage in chat and discussion sessions was important to keep the students busy with their academic activities despite the pandemic. The study found that the use of WhatsApp and Zoom for e-learning influenced postgraduate students' researching skills, grades and study habit at a moderate extent.

Objective 2: Find out whether the use of WhatsApp and Zoom for e-learning generated better understanding of the lectures being taught when compared to the traditional classroom teaching method

On Table 4, 69.3% of the respondents which are the majority are of the view that the traditional classroom teaching method eases understanding of lectures, while 29.3% are of the view that teaching via WhatsApp and Zoom eases understanding of lectures. The COVID-19 pandemic necessitated the adoption of e-learning to ensure that virus do not spread so fast (Lizcano, Lara & White, 2020), however, this does not mean that adopted platforms were the most convenient to use for teaching as they had their disadvantages.

As seen on Table 5, majority of the students are of the view that learning via WhatsApp and Zoom did not ease note taking during class sessions. This is contrary to the situation in the traditional classroom learning which provides a better avenue for better communication, observation and interaction, which also can be reflected in both verbal and non-verbal communication. This shows that there are obvious advantages of having a physical presence of classroom learning of which the simulated e-learning does not guarantee. This study found that the use of WhatsApp and Zoom for e-learning did not generate

better understanding of the lectures being taught when compared to the traditional classroom teaching method.

Objective 3: Determine the challenges faced by the students in utilising WhatsApp and Zoom for e-learning during the COVID-19 pandemic

E-learning during the period of the COVID-19 pandemic did not come without its challenges. Table 6 shows that majority the respondents were of the view that there were distractions from the surroundings while using WhatsApp and Zoom for e-learning. Learning at home can be challenging as one may not be able to stop people in the comfort of their homes from going about their daily activities.

Table 7 shows that majority the respondents were of the view that there was the challenge of Internet failure. There is an epileptic supply of Internet network reception in Nigeria and this is bound to affect the students' e-learning activities. This created a challenge for the students while learning as they could be in the middle of the lectures, and suddenly loose Internet reception. This way they cannot take record of the things that would have been said at the period of network disruption from their end.

Table 8 shows that majority of the respondents were of the view that data expenses were challenging to meet up with when using WhatsApp and Zoom for e-learning. In Nigeria, access to the Internet is not cheap and one would need to subscribe to a certain network according to their charges usually for a short duration of time. It becomes the burden of the students to seek for ways to have access to Internet subscription so that they do not miss out on their lectures, since the institutions or the government do not provide for that. Therefore the study found that some of the challenges faced by the students in utilising the WhatsApp and Zoom platforms for e-learning were distractions from the environment, Internet failure and the challenge of meeting up with data expenses.

Conclusion

In examining the use of WhatsApp and Zoom for e-learning during the period of the COVID-19 pandemic, this work concludes that e-learning had its usefulness in replacing traditional classroom teaching which became important at the time due to the stay at order to control the spread of the coronavirus, however, the use of WhatsApp and Zoom for e-learning does not has little impact in influencing the academic performance of the students. Even though e-learning provided an avenue for people to learn during the period of the pandemic, the traditional classroom teaching method seems to hold more advantages for imparting knowledge over learning via WhatsApp and Zoom.

Recommendations

1. Students should ensure that they are conversant with the usage of recent technologies and learning platforms that can make positive impact on their academic grades, performance and research.
2. Lecturers and instructors should adopt the use of Internet tools and applications designed specifically e-learning so that the students can better harness the benefits of e-learning.
3. The government should put structures in place that would enable free Internet access to students in tertiary institutions in Nigeria.

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