Corpus Intellectual
ISSN PRINT 2811-3187 ONLINE 2811-3209 Volume 2 SPECIAL EDITION 2023

Challenges of undergraduates towards the adoption of e-learning methods during Covid-19 Pandemic in Redeemer's University, Ede.

Author:

Alo Folake Sekinot

Affiliation:

Centre for Gender, Humanitarian and Development Studies (CGHDS), Redeemer's University, Osun State. Nigeria.

Abstract

The emergence of COVID-19 pandemic led to the sudden lockdown of schools in March 2020 in Nigeria, this introduced the use of various e-learning platforms which was inevitable in enabling continuous educational activities. This study was conducted to investigate "Challenges of undergraduates towards the adoption of e-learning methods during COVID-19 pandemic in Redeemer's University, Ede". The descriptive survey research design was used with 354 respondents selected through multistage and accidental sampling methods. The respondents were selected from undergraduate students of Redeemer's University Ede, Osun State, Nigeria. The data were analyzed using the Statistical Package for Social Sciences (SPSS). Descriptive and inferential statistics were used to analyze the objectives of the study. The results were tested at a 0.05 level of significance. The ANOVA test showed that age was not a determinant of students' adoption towards e-learning ($F(2, 351) = 0.07$, $p > 0.05$). Some of the challenges faced by students were erratic power supply (66.4%), low connectivity (57.9%), network slowness (76.3%), the cost of internet charges (69.2%) and practical nature of some courses (67.6%).Based on the findings, it is conclusive that Redeemer's University students are interested in using e-learning systems because it makes them more productive in their learning tasks.

Keywords: Challenges, Undergraduates, Adoption, COVID-19 Pandemic, E-learning.

Introduction

Corona viruses are a group of hundreds of viruses according to Hu, Guo, Zhou, et al. (2021) infecting animals such as bats, chickens, camels, and cats. In 1965, scientists discovered a human corona virus. Later that decade, researchers discovered a group of human and animal viruses named after their crown-like appearance (Williams, 2020). A new type of corona virus known as novel corona virus (2019-nCoV, or COVID-19) was identified in Wuhan, China, December 2019 and has spread throughout China and the world.WHO identified the following as signs of infection of COVID-19 which includes fever, cough, and shortness of breath as well as breathing difficulties, it can also lead to pneumonia, failure of various organs and eventually death. The incubation period is usually from one to fourteen days which is the time between infection and the onset of symptoms. The symptoms are seen within five to six days of people who are infected. Some patients who are infected can be asymptomatic, that means they do not show any symptoms and yet they have the virus in their systems (Ajazeera, 2020).

In today's world, technology has played a greater role in the educational sector, in terms of knowledge acquisition, skills, values, beliefs and habits (Khanna and Prasad, 2020). The World Health Organization (WHO) declared COVID-19 as pandemic in March 2020 (WHO, 2020; Pelmin, 2020). Covid-19 pandemic brought a great disruption to the educational sector globally with the sudden shutdown of schools. The United Nations Educational, Scientific and Cultural Organization (UNESCO) saw that learners were affected globally by school closures (UNESCO, 2020). This is as a result of the suspension of face to face classes which made many institutions to migrate to online platforms (Kaisara and Bwalya, 2021). Record has it that about 600 million students were affected globally because of closure schools (Goyal, 2020).

E-learning is used to deliver instruction, information, and learning content (Bhuasiri, Xaymoungkhoun, Zo, Rho and Ciganek (2012). E-learning has different perspectives which can mean any teaching process that integrates various forms of technology. E-learning can also be used to teach in distance learning which also uses the Internet as a means of communication. According to The American Society for Education and Development, e-learning can be defined as the means of transforming information through electronic technologies to support the process of learning. Undergraduates on the other hand

views; e-learning as a form of education that includes involvement, motivation and efficiency in communication. Once there is a lack of human interaction it affects the performance of undergraduates.

E-learning deals with multimedia environments that support interactive communication which helps in accessing and sharing information. E-learning sees to it that there's an interactive information exchange between the learners and the servers. It also provides a cross platform environment in which e-learning systems are executed independently on different computer operating systems (Liaw and Huang, 2011). According to the American Society for Education and Development, e-learning is any form of information that is transmitted, or facilitated through electronic means in order to support the learning process. Undergraduates see e-learning as a form of education that includes involvement on their own part, their motivation as well as their efficiency in communication (Bertea, 2009). There must be interaction between human beings and the environment.

Africa, like other parts of the world, has also embraced e-learning, because of the potential it has to accommodate various learners in various situations (Zongozzi, 2020). It is believed that e-learning improves the quality of education, as well as students' performance and engagement in all levels of education (Shen and Ho, 2020). Despite the adoption towards e-learning, the way it is used still remains in an early stage (Barteit et al. 2019; Eke, 2010; Liu, Han and Li, 2010). The lockdown in the educational sector as a result of the outbreak of COVID-19 led to an unexpected effect on education. Teachers had no choice than to use e-learning methods to teach during the lockdown (Abidah, Hidaayatullaah, Simamora, Fehabutar, and Mutakinati, 2020).

Raju, (2020) saw the need to adopt new innovative ways of teaching so as to continue education, overcome mental stress and anxieties that undergraduates might have as a result of lack of face to face teaching which they are used to. COVID-19 pandemic brought a digital revolution in the educational system with the use of e-learning methods such as teleconferencing, digital open books, interaction within the virtual environment, online lectures as well as examination (Strielkowski, 2020; Kumar, 2020). Also e-learning was significant during COVID-19, it was reported to have learning efficiency and performance because of its adoption of online learning strategies (Gonzalez et al. 2020).

COVID-19 pandemic led to social restrictions which were implemented by governments around the world with profound social and psychological effects (The Academy of Medical Sciences, 2020). Schools and universities had no choice than to go online. All social gatherings were banned; Individuals were to stay at home so as to reduce the spread of the disease. COVID-19 pandemic altered the learning environment in schools which impacted learning between teachers and students. As a result of this, universities had no choice than to conduct most of their operations online with students (Sobaih, Hasanein, and Abu 2020). Students were expected to make meaningful progress in their learning activities using the e-learning system (Omar, Kalulu, and Alijani, 2011; Al-Rahmi, and Othman, 2020).This essentially necessitated a new way of thinking, learning, and an expected change in attitude of students during the lockdown. Nigeria also joined other countries of the world in the lockdown of schools at all levels, through its Federal Ministry of Education so as to reduce the spread of COVID-19.

Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975) thrives on behavioural intention of individuals. The theory that is used for this study is an adaptation from the Theory of Reasoned Action (TRA) which is called Technology Acceptance Model (TAM). The Technology Acceptance Model was developed by Davis in 1986. The model is used to predict and accept information systems. That means, the model predicts and accepts tools which will identify modifications into the system so that it will be accepted by users. Two factors are of paramount importance for this model to be accepted which are perceived usefulness and perceived ease of use. Perceived usefulness means the extent to which an individual believes in the use of the system to improve his performance while on the other hand; perceived ease of use is the belief that using the system will be effortless by the individual. These two factors can be seen from two different dimensions (Hauser et Shugan, 1980; Larcker et Lessig, 1980; Swanson, 1987).

This model was made to help users in the acceptance of information systems (Davis, Bagozzi, and Warshaw, 1989). This model is a theory of information systems which describes how users accept and use technology to their own benefits. This system helps people to interact better with technology and people use technology for various intentions based on their behaviour. TAM helps one to understand and manage the adoption of new technology (Chen, Chen, Lin and Yeh, 2007; Dillon & Morris, 1996; Park, 2009). TAM is so efficient that it

predicts the acceptance of information technology systems, as well as diagnosing the design problems before users come to use the system (Davis, 1989). This model looks at the ease of use of technology, the degree to which learners believed that e-learning methods were the other way out during COVID-19 pandemic. This perceived ease of use is the degree to which a person believes that technology will produce better outcomes for him. Therefore, if students' belief on e-learning methods it can help them improve their performance, with this they are more likely to use it in their learning process (Yee, Luan, Ayyub and Mahmud, 2009).

Methodological Approach

The descriptive survey research design was used with 354 respondents selected through multistage and accidental sampling methods. The respondents were undergraduate students from Redeemer's University, Ede, Osun State, Nigeria. Data for this study were analyzed using both descriptive and inferential statistics to analyze the objectives of this study.

Questionnaire was used in obtaining information for the study, the questionnaire had three sections which are A, B and C. Section A was about the socio- demographic variables of the respondents, section B was on adoption of e-learning methods while section C looked at the challenges of the undergraduates.

RESEARCH QUESTION ONE

What are the challenges of undergraduates towards the adoption of e-learning during COVID-19 pandemic?

Table 1: Challenges of Undergraduate Students

Items		Response					
		SD	D	N	A	SA	Total
Lack of devices to use for e-learning	F	57	95	44	112	46	354
	%	16.1	26.8	12.4	31.6	13.0	100.0
No internet connection	F	25	75	49	119	86	354
	%	7.1	21.2	13.8	33.6	24.3	100.0
Lack of interaction with my colleagues through the e-learning platform	F	33	97	72	109	43	354
	%	9.3	27.4	20.3	30.8	12.1	100.0
The slowness of network is an obstacle to my learning online	F	15	26	43	150	120	354
	%	4.2	7.3	12.1	42.4	33.9	100.0
The college does not provide technical support for using e-learning	F	17	59	75	114	89	354
	%	4.8	16.7	21.2	32.2	25.1	100.0
The cost of internet fees/charges from the private café impede e-learning	F	12	41	56	143	102	354
	%	3.4	11.6	15.8	40.4	28.8	100.0
Erratic power supply at home hinders my use of e-learning	F	20	47	52	151	84	354
	%	5.6	13.3	14.7	42.7	23.7	100.0
Difficult to access e-resources from home	F	27	95	87	97	48	354 26.8
	%	7.6	24.8	27.4	13.6	100.0	
Concerns about the practical nature of some courses are not offered electronically	F	18	38	59	145	94	354
	%	5.1	10.7	16.7	41.0	26.6	100.0
Difficulty contacting with academic staff when at home	F	39	77	83	90	65	354
	%	11.0	21.8	23.8	25.4	18.4	100.0

The table shows some of the challenges of undergraduates towards the adoption of e-learning. Some of the challenges are the following:
Erratic power supply (66.4%),
Low connectivity (57.9%),
Network slowness (76.3%),
The cost of internet charges (69.2%) and
Practical nature of some courses (67.6%).

RESEARCH QUESTION TWO

Will the age of undergraduates affect the adoption of e-learning during COVID-19 pandemic?

Table 2: Distribution of respondents by age

DEMOGRAPHIC CHARACTERISTICS	FREQUENCY DISTRIBUTION	PERCENTAGES (%)
Age		
15-19	151	42.7
20-24	193	54.5
25-29	10	2.8
Total	**354**	**100.0**

The ages of respondents were more among 20 - 24 years old, followed by 15 – 19 years and 25 – 29 was the least in the age barracks.

RESEARCH QUESTION THREE

Will the level of study of undergraduates affect the adoption towards e-learning?

Table 3: Distribution of respondents by level of study

DEMOGRAPHIC CHARACTERISTICS	FREQUENCY DISTRIBUTION	PERCENTAGES (%)
Level		
200	119	33.6
300	112	31.6
400	123	34.7
Total	**354**	**100.0**

In terms of level, the data shows that 400 level students were more in the study. Followed by 200 level then 300 level respectively.

HYPOTHESES
Hypothesis one

1. There will be no significant age difference among undergraduates towards the adoption of e-learning.

Table 3: Means and Standard deviation

AGE	N	MEAN	SD
15-19	147	34.50	8.145
20-24	196	34.53	7.148
25-29	11	35.36	7.59
TOTAL	**354**	**34.54**	**7.571**

N = number, Mean= Average, SD= Standard deviation

Table 2 shows that respondents within the age barrack of (20-24 years) with (Mean = 34.53 and SD = 7.148) had the highest adoption towards e-learning, followed by respondents within the age barrack of (15-19 years) with (Mean = 34.50 and SD = 8.145), and (25-29 years) with (Mean = 35.36 and SD = 7.571) had the lowest adoption towards e-learning.

Table 4: One way ANOVA

SOURCE	SS	Df	MS	F	P
Between groups	7.698	2	3.849	0.70	>.05
Within groups	20226.166	351	57.624		
TOTAL	202333.864	353			

SS= Sum of Squares
df= Degree of freedom
MS= Mean of Squares
F= Frequency of Distribution
P= P-value

The table shows that there was no significant age difference towards the adoption of e-learning among undergraduate students at the three age categories [F (2,351) = 0.70, p>.05]. It can be concluded that age was not a significant factor towards the adoption of e-learning among undergraduate students. Therefore hypothesis one was accepted.

Hypothesis two

2. There will be no significant level of study difference among undergraduates towards the adoption of e-learning.

Table 5: Means and Standard Deviation

LEVEL	**N**	**Mean**	**SD**
200	119	26.15	6.421
300	112	25.96	7.129
400	123	25.59	7.337
TOTAL	354	25.90	6.959

N = number, Mean = Average, SD = Standard deviation

The table shows that respondents in 200 level with (Mean = 26.15 and SD = 6.421) had the highest adoption towards e-learning, followed by 300 level with (Mean = 25.96 and SD = 7.129), and 400 level respondents with (Mean = 25.59 and SD = 7.337) had the lowest adoption towards e-learning.

Table 6: One way ANOVA

SOURCE	SS	df	MS	F	P
Between groups	19.40	2	9.70	20	>.05
Within groups	17073.73	351	48.64		
Total	**17093.13**	**353**			

SS= Sum of Squares
df= degree of freedom
MS= Mean of Squares
F= Frequency of Distribution
P= P-value

The table shows that there was no significant difference of level of study towards the adoption of e-learning among undergraduate students at the three levels [F (2,351) = 0.20, p > .05]. It can be concluded that the level of study was not a significant factor towards the adoption of e-learning among undergraduate students. Therefore, hypothesis two was accepted.

Discussion

This study is in line with the study carried out by Sung, Chang, and Liu (2016) that ascertains that e-learning methods make information gathering and sharing convenient among students for academic related purposes. The study agrees with Adeboye (2016), that the use of e-learning methods among students builds their confidence which makes e-learning easier.

Hypothesis one showed that age is not a significant factor towards the adoption of e-learning methods among undergraduates in Redeemer's University. This finding contradicts the study of Al-Mutairi (2011) which showed that in terms of age, the younger students did better than the older students which mean that older students face more e-learning challenges than younger students.

Hypothesis two showed that level of study has no significant factor towards the adoption of e-learning methods among undergraduates in Redeemer's University. This finding is in line with the study of Obeidat, Obeidat, and Al-Chalabi, 2020.

Recommendations and conclusion

From this study, TAM was a very useful model which was applicable in the adoption of e-learning context. It can be concluded that Redeemer's University undergraduates were able to adopt e-learning methods during COVID-19 pandemic. This study will recommend and conclude by helping the undergraduates to overcome the challenges of low connectivity by boosting internet connectivity to make the access to internet smooth and easy. For erratic power supply, there should be great improvement in terms of power supply by the sector saddled with the responsibility. Network slowness is another area to look into if e-learning will be used and enjoyed by undergraduates. The cost of internet charges should be something that should be affordable for all and sundry so as to ease e-learning methods. In conclusion, the adoption of e-learning methods into the educational sector of Nigerian tertiary institutions during COVID-19 period and beyond will increase the way undergraduates learn especially by using e-learning methods which will improve their study habit, and create a constructive effect on their academic performance.

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