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Abstract

At a time in the world of Education, there was a strange virus that tried to infect everybody that came into contact with it and that is the COVID-19 which for now has gained wide acceptance across the globe by Lecturers. In response to the emerging and ever solution to the COVID-19 outbreak, this study proposes a theoretical framework based on literature and model to determined Cloud HD Video Meeting (Zoom) success. Two research questions were answered and one hypothesis was tested at 0.05 level of significance. The population of the study consisted of 184 students and 20 lecturers in two Universities in Rivers State.   The entire population was used as sample. A five point scale questionnaire was used to provide answers for each questionnaire item. While t-test, was used in testing the hypothesis. The major findings was that teaching and learning was only done on face to face method but because of COVID-19 outbreak it was compulsory for teach/learn to be done through e-technologies. It was concluded that Cloud HD Video Meeting (Zoom)services adaptability should be taking seriously by all concerned in other to help to curb the spread of COVID-19 in our schools. It was recommended that students must start to unfailingly use Cloud HD Video Meeting (Zoom) and other E-learning tools in other to help in curbing COVID-19 spread in our Universities.

Keywords: Zoom, Learning /Teaching, E-learning, System, Information quality, University

1. INTRODUCTION

It is worthy to note that this COVID-19 pandemic, education had to addresses students' learning, social and emotional needs which was crucial, especially in times of crisis. During this period in question, Schools were closed down because of the current COVID-19 pandemic. This actually means that students from diverse backgrounds were those who are more at risk of less likely to receive the support and extra services they need, and the gap between students that experience additional barriers and that do not might widen. Closures can also have considerable effects on students' sense of belonging to schools and their feelings of self-worth I believe that these keys are enough reasons for inclusion in education.

Furthermore, the outbreak has changed the operating conditions all over the globe within a short period of time.   The consequences of this pandemic were actually unstoppable and uncontrollably for many industries of the world. According to Di Vaio et al. (2020), it is eminent to say that technologies have changed the traditional way of education to the modern way of learning, like artificial intelligence.   During the corona-virus crisis, many countries have been using digital pedagogical tools and virtual exchanges between students and their teachers, and among students, to deliver education as schools closed. Most students might however have little access to such tools and require further attention and support.

To respond to the challenges they face, countries have developed specific and sometimes innovative policy initiatives such as providing equitable and inclusive access to digital learning resources and good learning conditions, ensuring that socio-emotional needs are being met, offering equitable and inclusive access to extra services for vulnerable students' and ensuring support by and to teachers (Reimers and Schleicher, 2020).

While the most students might not have access to digital learning resources, some governments and civil society organizations therefore have provided teachers with online teacher training resources on how to teach online or they have organized teaching through television, phones or radio.   They also created online collaborative platforms that allow them to share their resources and give and receive peer feedback. Such platform includes cloud HD Video meeting (Zoom). Zoom provides the first unified meeting experience platform that bring HD video conferencing, mobility and web meetings together as a free cloud service. An almost universal response to school closures has been the creation of online learning platforms to support teachers, students and their families. However, not all students have the same access to information and communication technologies (ICTs), which also varies greatly across countries (OECD, 2020). Previously, they are using only the delivery through face-to-face teaching. However, the shift to online mode has raised many queries on the quality of education (Sahu 2020).
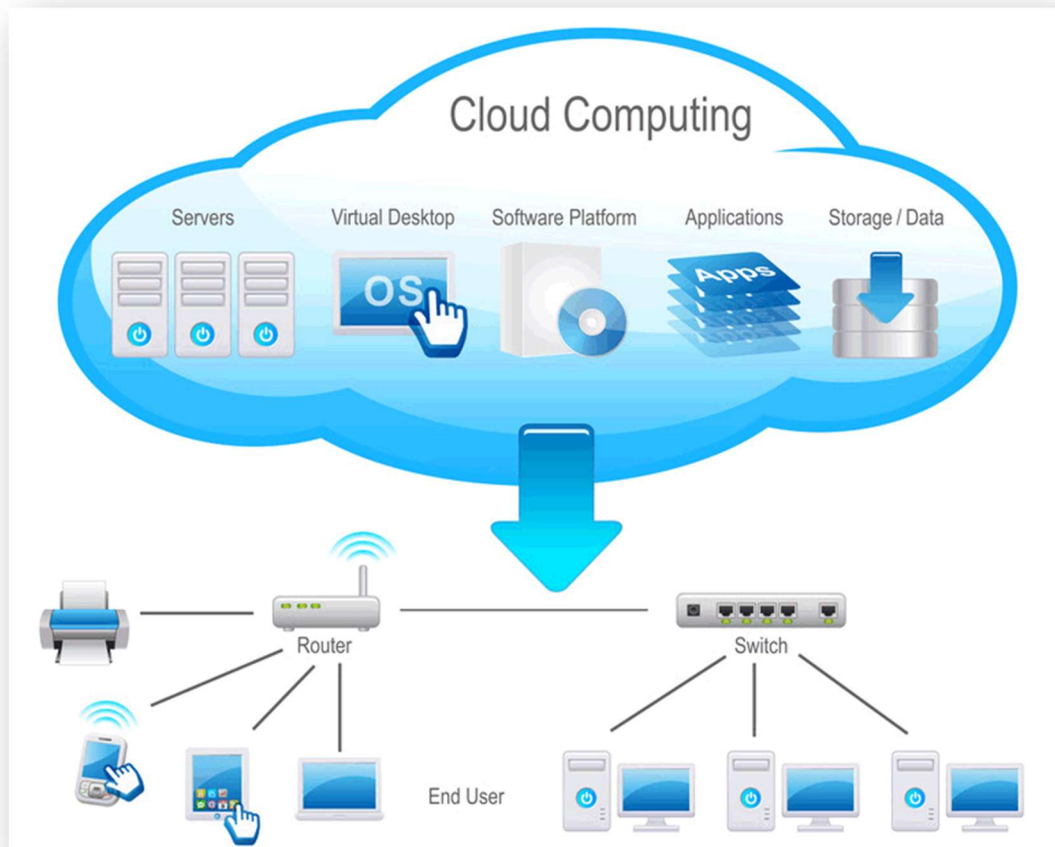

Fig 2: Cloud Computing Technology Framework
Source: https://www.ictlounge.com/html/recent_developments.htm

Also, Teachers' role and skills are irreplaceable and their daily contact with students places them among the most important agents of inclusion in education. Amid the COVID-19 crisis, they are core actors, guiding their students through the intensification of online distance learning. Furthermore, teachers, as well as school leaders, are the most likely individuals to be close to students' families and can have a major role in both reaching the most vulnerable students and keeping their family engaged in their education. Teachers can help these students to remain connected during school closures by providing Internet hotspots, hosting video chats, sharing videos with closed captioning, providing translated material and engaging with these students'. While nearly 63 million teachers were touched by the crisis at the end of March 2020, UNESCO (2020) ensuring support by and to teachers during such a crisis constitutes a great challenge and a key policy area to ensure equity and inclusion in education during school closures.

According to a brief published in May 2020 by the World Bank, three core principles must guide policies aimed to promote teachers' effectiveness and well-being: (1) support teacher resilience; (2) support teachers instructionally; and (3) support teachers technologically World Bank (2020) This section focuses on examples related to teacher networks and initiatives that have supported the most countries' initiatives to ensure accessible resources for teachers and teachers' socio-emotional well-being during the crisis.

Moreover, in today's mode of learning during this COVID-19 is not too palatable but in all we tried our best possible to give in our best during this period. The advancement in E-learning has been started through Massive Open Online Courses (MOOCs) for students, society, and the industry as well since 2012 (Calisir et al. 2014; Margaryan et al. 2015). MOOCs are recognized as a significant development in higher education causing millions of people and students taking the benefits and uplifting the existing skill (Gupta and Gupta 2020). This study will be conducted on the students who are enrolled with Nigerian Universities and using the cloud HD Video meeting (Zoom) for their learning. It is a convenient means of communicating with individuals and it helps in allowing people's contributions during the meeting. Based on the argument so far, there is still gap in literature on the cloud HD Video meeting (Zoom) system among the Universities after the spread of the Covid-19 outbreak on higher education closure.

1.1 Statement of problem

With the advent of the internet and World Wide Web in the 1990's, teachers including those in the USA embraced the use of several e-learning tools in teaching and learning. Such e-learning tools include the use of digital Video conferencing platforms like cloud HD Video meeting (Zoom), Microsoft platform, Webex Blackboard and Google Classroom (Gupta et al 2020) among others. Also, a nationwide study by Okeke, Ezenwanfor and Umoru (2012) indicated a general low extent of utilization of e-learning tools by students and teachers in Nigerian Tertiary Institutions. This study is therefore conducted to find out the importance of using cloud HD video meeting (zoom) for lecturing in curbing COVID-19 and also to find out if the user is satisfied with the quality of cloud HD Video meeting (Zoom).

Fig 1: Typical Video Conferencing Scenario During COVID-19 Pandemic
Source: https://its.ucsc.edu/zoom/index.html

1.2 Purpose of the study

The purpose of the present study is to investigate the effect of information quality, system quality, and service quality toward user satisfaction in other to curb COVID-19 spread in the schools and whether Cloud HD Video meeting (Zoom) learning system has impact on learning and lecturing process. Therefore, the study focuses on students from two Universities in Port Harcourt, Rivers State.

1.3 Research Questions

The following research questions will be used to guide the study:

1. How has integration of Cloud HD Video meeting (Zoom) and other E-learning tools impacted into the teaching/learning in the Universities during COVID-19 pandemic?
2. How did students perceive the use of Cloud HD Video meeting (Zoom) in addressing COVID-19 pandemic?
3.

1.4 Hypotheses

To guide the study, the under-listed null hypotheses were formulated:

H_0 There is no significant difference between the mean responses of undergraduate students on the impact of Cloud HD Video meeting(Zoom) in teaching/learning in Rivers State Universities.

2. METHOD

The research used a descriptive survey design approach which permitted the use of questionnaire to obtain relevant information from respondents to describe the existing conditions and other phenomena. According to Leary (2010) a survey uses questionnaire and interview to collect information about people's attitudes, beliefs, feelings, behaviours and lifestyles. The survey was conducted through the GOOGLE form; the links were shared with the students through the WhatsApp group of lecturers. All the students participated in the cloud HD Video Meeting (Zoom) survey. The convenience sampling technique was used. The study employed a cross-sectional survey method.

The study sought the opinion of students and lecturers in two Universities in Rivers State on the use of Cloud HD Video Meeting (Zoom) in teaching and learning. The population for the study consisted of 204. The break down goes thus 100 students from Rivers State University and 84 students from University of Port Harcourt while 20 lecturers were taken from both universities. No sample was taken for the study. The entire population was taken because the size was manageable. A structured questionnaire containing 28 items was used for gathering data for the study. Experts in Management validated the instrument. A reliability index of 0.86 was gotten when the reliability of the instrument was tested using Cronbach Alpha formula method.

The statistical tools used for answering the research questions were mean and standard deviation while, t-test was used for testing the hypothesis at 0.05 level of significance. If the calculated t-value is less than the critical table value of 1.96 for the required degree of freedom of 202, the null hypothesis is upheld but if the calculated t-value is greater than critical t-value then the null hypothesis is rejected. Any questionnaire item that scored up to 2.50 and above mean rating was accepted but any mean less than 2.49 and below was rejected.

The questionnaire has two sections relating to the two research questions for the study and was based on likert five rating scale of marks thus: Very Highly required – 5 points, Highly Required – 4 points, Moderately Required - 3 points, Slightly Required - 2 points and Not Required- 1 point.

3. RESULTS

Research Question 1
How has integration of Cloud HD Video Meeting (Zoom) and other E-learning tools impacted into the teaching/learning in the Universities during COVID-19 pandemic?

Table 1: Mean and Standard Deviation of responses on the integration of Cloud HD Video Meeting (Zoom)

N=20

S/N	ITEM DESCRIPTION	$\bar{X}$	SD	DECISION
1	Digital versatile Discs (DVDs)	3.57	0.64	Highly Required
2	Pod cast	3.37	0.93	Moderately Required
3	Mobile Technology	3.78	0.46	Highly Required
4	Computer Discs(CDs)	3.59	0.66	Highly Required
5	Video conferencing Devices	3.58	0.60	Highly required
6	Cloud HD Video Meeting (Zoom)	3.78	0.42	Highly Required
7	Cell Phone	3.94	0.31	Highly Required
8	Blogs	1.47	0.74	Not Required
9	Smart Phones	3.72	0.44	Highly Required
10	Teleconference Devices	2.53	0.74	Moderately Required
11	Smart/interactive white boards	3.45	0.64	Moderately Required
12	Television	3.64	0.48	Highly Required
13	Microsoft platform	2.53	0.74	Moderately Required
14	Webex blackboard	2.07	0.56	Slightly Required
15	Google classroom	3.05	0.76	Moderately Required
	Use of computer tutor in teaching Keyboarding	3.55	0.49	Highly Required
16	Virtual classroom	3.39	0.93	Moderately Required
17	Use of computers to score/assess students	2.48	0.43	Slightly Required
18	E-library	2.55	0.76	Moderately Required
19	Ipad	2.60	0.78	Moderately Required
	Grand Mean		3.13	0.67

Source: Field Survey (Agwatu, 2021)

Table 1 presents the findings on the integration of Cloud HD Video Meeting (Zoom) technologies into the teaching / learning in the Tertiary Institutions during the COVID-19 pandemic, shows that 9 of the items were considered to be Highly Required, 8 of the items were considered to be Moderately Required, 2 of the items were considered to be Slightly Required while 1 of the items were considered to be Not Required. The inference that can be drawn is that the items that are fundamental for integration of Cloud HD Video Meeting (Zoom) technologies for curbing COVID-19 pandemic are highly competitive and technology driven so it is highly required.

Research Question 2
How did students perceive the use of Cloud HD Video meeting (Zoom) in addressing COVID-19 pandemic?

Table 2: Mean and Standard Deviation of how students perceive the use of Cloud HD Video meeting (Zoom)

N=184

S/N	ITEM DESCRIPTION	$\overline{X}$	SD	DECISION
1	I have the ability to generate new idea to solve problems.	3.56	0.64	Highly Required
2	I have the ability to consider risks and choose the best alternatives .	3.39	0.93	Moderately Required
3	I have good inter-personal relationships.	3.46	0.74	Moderately Required
4	I have the ability to work in a variety of technologies to gather, process, record and transmit information.	3.79	0.46	Highly required
5	I have the ability to make use of educational resources available in the web .	3.55	0.63	Highly Required
6	I have the ability to blend in-class experiences with the on-line delivery course materials.	3.71	0.56	Highly Required
7	I have the ability to demonstrate, understanding, friendliness and politeness in group settings.	3.84	0.51	Highly Required
8	I have the ability of using efficient learning techniques acquired and applying new knowledge and skills	3.60	0.67	Highly Required
	Grand Mean	3.61	0.66	

Source: Field Survey (Agwatu, 2021)

Table 2 presents the findings on students' perception on the integration of Cloud HD Video Meeting (Zoom) technologies into the teaching / learning in the Tertiary Institutions during the COVID-19 pandemic, it shows that 6 of the items were considered to be Highly Required, 2 of the items were considered to be Moderately Required, while Slightly Required and Not Required had no points. The findings indicate the presence of seriousness in the part of the students in the integration of new technologies to make them relevant in their chosen careers/occupations on graduation even during this COVID-19 pandemic era.

Testing Hypothesis

Hypothesis 1: There is no significant difference between the mean responses of undergraduate students on the Impactof Cloud HD Video meeting(Zoom) in teaching/learning in Rivers State Universities.

Table 3: t-test Analysis of Hypothesis 1

Responses	N	$\overline{X}$	SD	DF	LEVEL	T-Cal	T-Crit	Decision
Lecturers	20	3.13	0.67					
				202	0.05	0.98	2.00	Accepted
Students	184	3.61	0.66					

According to Table 3, the t-cal value of 0.98 is less than the t-crit value of 2.00, indicating that there is nosignificant difference between the mean responses of the respondents on impact of Cloud HD VideoMeeting (Zoom) in teaching/learning in the Universities investigated. The null hypothesis is therefore accepted.

4. DISCUSSION OF FINDINGS

The findings in Research Question 1 revealed that Cloud HD video Meeting (Zoom) as an e-learning tool impacted on teaching/learning in the Universities. This agreed with the findings of Gupta et al (2020) that e-learning tools include the use of digital Video conferencing platforms like cloud HD Video meeting (Zoom), Microsoft platform, Webex Blackboard and Google Classroom among others.   Table 2 revealed that students found the e-learning tools like Zoom to be of a great importance during this COVID-19 pandemic period. This tries to be in tune with Ovuh (2014) who discovered that parent complain that the concentration of their wards on important issues, such as their studies have been tampered by the advent of the social media. But this was a good thing because during this period of COVID-19 students needed to be indoors to curb the spread of COVID-19 so they used their phones, lab tops and even desk tops to connect to the Zoom technology in other to receive their lectures which also permitted them to ask and answer questions.

5. CONCLUSION

Before now it was discovered that teaching and learning was only done on face to face method but because of COVID-19 outbreak it was compulsory for teach/learn to be done through e-technologies, then operational habits have changed around the globe within a short period, and mainly the education sector was affected worldwide though Universities now offer online courses to the students. The COVID-19 will create a long-term impact on higher education institutions. If the pandemic remains longer, it might change education from face to face to online. E-technologies' adaptability should be taking seriously by all concerned in other to help to curb the spread of COVID-19 in our schools. Based on that, the quality of the E-technologies system, quality of information that will create an impact on user satisfaction and system use that will lead toward the use of these technologies like Zoom. It will in turn decrease the education cost, and education will reach outside the border as well. Education will be borderless in a short period of time.

6. RECOMMENDATIONS

From the results of the study, the analysis of the study and the discussion of findings, the following recommendations are suggested:
1	Accessibility of the highly competitive and technology driven tools should compulsorily be made to give 24/7 service to users.
2	The operator should at all times give error-free information
3	Provision should be made for quality of information, content quality and there should be a robustness of the server from time to time.
4	There should be made available training module materials related to Zoom both for use of new users and old users.
5	Also updated information and well-organized data should always be provided.
6	The technological tools should be designed in a user-friendly way.
7	Also there should be a time to time feedback from the user which will increase the durability and acceptability of the Zoom technological tools.
8	Lastly, that both lecturers and students must start to unfailingly use these technological tools in other to help in curbing COVID-19 spread in our Universities.

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