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Handling Disrupted Learning During COVID-19 Pandemic: Learners' Experience in Nigeria

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ABSTRACT

Coronavirus has affected not only the human health but also the educational sector. As a result of this pandemic, schools were forced to suspend face-to-face learning and implement an alternative method of learning which is online learning. The focus of this paper is to investigate the accessibility and efficiency of learning during the lockdown period. The paper examined the effectiveness of vodcast (video and podcast) lessons as a strategy in online teaching by using learning management system (LMS) and to what extent the strategy met the needs of the learners during the challenging period of the covid-19pandemic. The study adopted mixed method research which consisted of three main phases of design. The questionnaire used in this study comprises 15 items and is divided into two sections and 50 participants participated in the study. The findings indicated that learners displayed positive perceptions towards the use of vodcast lessons during the pandemic period. Furthermore, they reported that online learning should be used to complement face-to-face teaching even after the pandemic period is over.

Keywords: *disrupted learning, vodcast, learning management system (LMS), coronavirus (covid-19)*

INTRODUCTION

COVID-19 is from the family of Coronavirus which is said to have originated from Wuhan China around November 2019, spreading rapidly around the world, which has caused the death of thousands of people (Nigeria Centre for Disease Control (NCDC), 2000). The virus was declared by the World Health Organization (WHO) as a pandemic situation. COVID-19 pandemic affected not only the human health but also the educational sector. To contain the COVID-19 virus from spreading, several countries closed their schools as the banned on face-to-face teaching were implemented as a means of curbing the disease. Among the nations that placed a restriction on face-to-face- teaching includes Nigeria. The index case was confirmed in Nigeria on February 27th 2020. As the first patient was confirmed with the virus, the country of over 20 million people was thrown into fear, anxiety and panic as they patiently wait for further directives from the government on the measures to apply in order to contain the deadly virus. At the same time, the government had set up a medical team to prepare the nation in facing the deadly virus. The index case eventually caused WHO to pronounce Nigeria among the 13 African nations listed with high-risk of the spread of coronavirus (NCDC, 2000).

With the pronouncement by WHO on the daily increasing numbers of cases, one of the drastic measures embarked by the Federal Government of Nigeria to prevent further spread of the virus, was to declare a total lockdown of the nation to prevent further transmission and allow contact tracing of those who might have had contacts with the index case. The lockdown led to the closure of schools resulting thousands of adults, youths, and children to be unable to attend schools.

In the same vein, UNESCO Education Response in Crises and Emergencies in the Education 2030 Incheon Declaration and Framework for Action raised concern and noted that an appreciable number of youths, adults, and children have their education disrupted due to reasons involving violence, disasters and pandemic to mention a few. UNESCO further stated

and reiterated hope of commitment, developing responsive and resilient education to meet the needs of the yarning children, youths, and adults. In line with the UNESCO Education Response in Crises and Emergencies in the Education 2030 Incheon Declaration and Framework for Action mandated that countries should provide alternative modes of learning for children and youths away from school, in order to accommodate learning flexibility in both formal and non-formal setting during any emergency period.

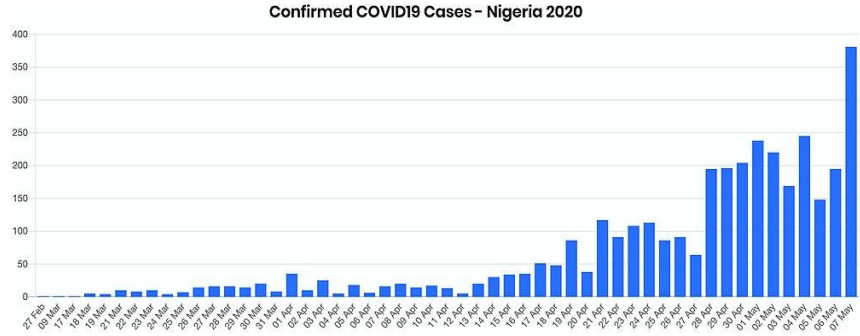

Figure1: Displayed the Daily Confirmed Cases of COVID-19 in Nigeria from the 27th February Index Case to 7th May 2020. Retrieved from: http://en.wikipedia.org/Nig_COVID-19_daily_case_profile.jpg. Copyright 2020 by NCDC

Figure 1 displays the daily confirmed cases of COVID-19 in Nigeria from the 27th February index case to 7th May 2020. The current situation with the spread of COVID-19 has made the Federal Ministry of Education and all stakeholders in education be worried and rethink of finding alternative for the potential of online technology to enhance teaching and learning during the pandemic period to maintain undisrupted learning. How could this be done and what are the challenges encountered by this strategy? What is the perspective of learners to this new strategy and finally how does this approach enhances their learning experiences during the period and the sustainability of the strategy after the pandemic period are some of the questions that will be answered in this study.

In order to ensure undisrupted learning among children and young adults, the researcher embarked on a digital learning for learners that are less privileged during the lockdown period. Digital learning has been used and preferred since the advent of information technology. This has been

used to share information, investigate, shop online, banking, and teaching and learning (Conole, 2013). The incorporation of the appropriate use of technology in the classroom for teaching and learning has improved a better understanding of basic concepts of subject matter (Saba & Shearer, 2018). It has been established that despite the advantages of technology-based instruction, it has not been able to replace the human mind though it has been able to enhance and increase the pace of learning (Saba, 2012). Implementing the use of digital technology especially videocast (video and podcast) as a tool for learning during the lockdown to help rather than hinder the learning due to face-to-face learning that has been put on hold due to COVID-19 Pandemic.

The skills and approach to facilitate online teaching and learning pose challenges to teachers during the lockdown period. The use of vodcasts might be a very good alternative to respond to learners' needs during this period (Saba & Shearer, 2018). In respond to learners' needs during this emergency period, this study will focus on senior secondary school students' perception in the use of vodcast (video and podcast) lessons used as learning resources instead of the face-to-face teaching of physics as a subject. Physics was chosen because of its importance to the scientific development of the nation. Despite the significance, efforts to improve teaching and learning of the subject at the senior secondary level, the performance of learners has been unsatisfactory (Erinosho, 2013). Several kinds of literature (Akanni, 2015; Obafemi & Onwioduokit, 2013) have shown that learners find physics difficult due to the abstract nature of the course hence, there is a need to stimulate learners' interest during the pandemic period through vodcast (video and podcast) lessons.

The vodcast is a computer-based technology that is made up of a combination of audio and visual images (Spies, 2011). Audio and video files are made available on the internets which are downloadable and could be used later at learners' convenient time and pace (Taylor & Clarks, 2010; Beamish & Brown, 2006). Podcast has been used in distance education since the increase in internet capability and advancement in software over some years (Spies, 2011). This has made learning appealing to learners and improve learners' achievement (Whelan, 2005). Podcast has been documented to be flexible, motivate, engaging, and accessible when used in teaching and learning (Spies, 2011).

Rowe (2006) discovered that the use of vodcast does not depend so much on the technology but rather on the way it is used to achieve learning experience because once it is downloaded, it can be used without the dependency on the internet. This is suitable during this pandemic period since most learners cannot afford to be on the internet for the whole day because of its financial implication. The ease of use for both learners and teachers results the researcher of this study to use the vodcast (video and podcast) lessons during the pandemic period.

The study is based on the constructivist learning theory of Jean Piaget (1896-1980) in which he stated that learners should construct new knowledge from their past experiences. He affirmed that this took place through the process of accommodation and assimilation. The process of assimilation occurs when learners incorporate new experiences into an already existing framework without changing the framework (Bhattacharjee, 2015). Accommodation is the process of reframing one's mental representation of the external world to fit new experiences. The theory of constructivist advocated that learners should construct knowledge out of their experiences (Sharma, 2006). In short, it is a way or process of adjusting mental models to accommodate new experiences. Thus, the following principles should be followed when constructing their meaning.

i. New learning should be built on prior knowledge
ii. Learning is enhanced by social interaction
iii. Meaningful learning should be developed through an authentic task.

The constructivist approach has been proposed as an alternative to face-to-face teaching where learners discovered learning by themselves. The constructivist teacher encourages students to constantly assess how the activity will help them in gaining their understanding (Wilson & Cole, 1991). On this premise, the research will examine how the interaction with video recorded lessons could actively engage learners by constructing their understanding during this critical pandemic period.

STATEMENT OF THE PROBLEM

To contain the spread of COVID-19 pandemic, schools have been shut

down resulting in the face-to-face teaching to be impossible and making thousands of children and youth out of schools. To maintain undisrupted learning during this period, online learning was introduced by making use of vodcast (video and podcast lessons). To this end, the researcher will examine the perceptions of learners on the effectiveness of video-recorded lessons as the strategy in online teaching through learning management system (LMS) and the extent to which the strategy has met the needs of learners during the challenging period of COVID-19.

The study aims to examine the perceptions of learners on the effectiveness of vodcast (video and podcast) lessons as a strategy in online teaching through LMS and to what extent the strategy met learners' needs during the period of lockdown. Specifically, the study will examine the followings:

i. Learners' perception of vodcast (video and podcast lessons) in online teaching using LMS
ii. The role and function of vodcast (video and podcast lessons) in enhancing the learning experiences and engagement of online learners.

RESEARCH QUESTIONS

The following three research questions are formulated at 0.05 level of significance

i. What are learners' perceptions towards vodcast (video and podcast lessons) in online teaching using the learning management system?
ii. To what extent is vodcast (video and podcast lessons) enhances learners learning experiences?
iii. How engaging is the interaction using LMS for learning?

RESEARCH METHODS

The study used a mixed-method research design which consisted of three main phases of design. Quantitative and qualitative approaches were applied in carrying out the study with the results of one phase influencing the process of another phase. In phase one, the researcher identified research assistants and areas of needs of learners taking physics as a subject at the senior secondary school level. The questionnaire comprises 21 items which were later reduced to 15 items based on expert advice used for data collection. The questionnaire has two sections. The first section consists of demographic data of participants while section B consists of 15 questions with a 4-point Likert scale (strongly agreed to strongly disagreed). The instrument used for this study was developed in consultation with experts to ascertain content-related validity. The reliability was checked by implementing a pilot survey. The reliability of the instrument was 0.89 using Cronbach Alpha. This made the instrument to be suitable for the study. 50 learners out of 85 that shown interest was randomly selected to participate in the intervention due to the availability of space and facilities. Most of the learners that participated were females (n=25) while males are (n=25) with an average age of (±20.8). However, participants must be from the science stream and indicate physics as one of the subjects taken in his/her schools at the senior secondary school level.

In the second phase, the report from the questionnaire in which learners identified difficult topics were extracted and lesson plans on the identified topics were drawn out. The contents were arranged by the researcher in line with the Nigerian Educational Research and Development Council (NERDC) approved school curriculum. Vodcast recordings were made by research assistants employed. Each recording lasted for a period of 30mins per each topic and where the topic was expanded for more than 30 mins it was broken further into subtopics to be taken for another 30 mins to take care of the listening span of learners. The topics treated include:

- Interaction of Matter, Space and Time
- Conservation principles
- Heat
- Energy Quantisation and Duality of Matter
- Radiation

- Physics in Technology
- Waves
- Motion
- Electromagnetism
- Electricity

Thereafter, the vodcast recordings were saved into memory sticks for learners that are not privileged to have access to the learning management system (LMS) set up for them an therefore could go through the materials on their laptops without having an internet connection. The programme lasted for four weeks for learners' interaction and one week for the administration of the questionnaire.

In the third phase, the questionnaires were administered online and hardcopies were sent to learners to assess their perceptions on the intervention and later returned either via online or in hard copy.

RESULTS AND DISCUSSIONS

The questionnaire on learners' perception of the use of vodcast lessons as online teaching was administered to 50 participants. Table 1 below represents the socio-demographic distribution of sampled participants. The tables indicate that most of the participants were female (52.0%) while 48.0% were males. The table also shows that the average age of the respondents was 20.8 years. All the participants took physics as a subject in their respective schools.

Table 1: Socio-Demographic Characteristics of Participants

Variable	Characteristics	Frequency	%
Sex	Male	24	48.0
	Female	26	52.0
Age Interval	16-20	22	44.0
Mean Age ± SD = 20.8 ± 2.5	21-25	28	56.0
	Total	50	100.0

Source: Field Survey 2020. Sample Size = 50 SD= Standard Deviation

ANALYSIS OF RESEARCH QUESTIONS

Research Question 1: What are the Learners' Perceptions of the Effectiveness of Vodcast (Video and Podcast Lessons) as Online Teaching During the Lockdown Period?

Table 2: Learners' Perception

Variable	Mean	SD	Category	Remark
The intervention fulfill the challenging needs of the present time	3.62	0.490	4	Strongly agree
I generally consider the instructors to be poor lecturers and the materials irrelevant	1.60	0.495	2	Disagree
The vodcast is not educative	1.50	0.505	2	Disagree
I do not satisfy with the overall experience	1.48	0.505	1	Strongly disagree
It is not a good alternative to face-to-face- learning	1.48	0.505	1	Strongly disagree
Pooled	1.94	0.212	2	Disagree

Source: Field Survey 2020. Sample Size = 50. SD (Standard Deviation). Category: 1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Agree (A), 4 = Strongly Agree (SA)

From Table 2, learners with a mean of 3.62 strongly agreed that the intervention vodcast (video and podcast) lessons via the LMS were able to fulfill the challenging needs of the present time. This is according to the findings of Francom, Thomas, & Mumbi (2011) that discovered vodcast was able to meet the needs of distance learners when administered on them. Learners disagreed (1.60) that instructors are poor lecturers and the materials irrelevant. This is in line with Saba (2005) that lecturers taking part in vodcast lessons should be more focused where they know that learners are

deficient in the content. Also, an appreciable number of learners disagree that the vodcast (videos and podcasts) are not educative (1.50). A mean of 1.48 learners strongly disagreed that they are not satisfied with the overall experiences and that it is a good alternative to face-to-face learning. The results implied that the participants disagreed on the ineffectiveness of the usefulness of (video and podcast lessons) in online teaching during the lockdown period (1.94). Therefore, it can be said that the vodcast (video and podcast recorded lessons) in online teaching during the lockdown period is effective for learners in their daily academic activities during the pandemic period.

Research Question 2: To What Extent Does the Vodcast (Video and Podcast Recorded Lessons) Enhance the Learning Experiences?

Table 3: Learning Experiences of Learners

Variable	Mean	SD	Category	Remark
I learn better using e-learning	3.62	0.490	4	Strongly agree
I understand materials better using LMS	3.60	0.495	4	Strongly agree
Prefers blended face-to-face with e-learning than e-learning alone	3.40	0.495	3	Agree
Difficulties experienced due to internet and Wi-Fi connection	3.40	0.495	3	Agree
The teaching was complex and I couldn't comprehend	1.62	0.490	2	Disagree
Pooled	3.13	0.224	3	Agree

Source: Field Survey 2020. Sample Size = 60. SD (Standard Deviation). Category: 1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Agree (A), 4 = Strongly Agree (SA)

Table 3 showed that participants with a mean of 3.62 strongly agreed that they learn better using vodcast lessons and understand materials better on the learning management system (LMS). Besides, the participants (3.40) agreed that they prefer blended face-to-face with e-learning that e-learning alone. More so, participants experience difficulties in learning due to bad or slow internet and Wi-Fi. This is in line with the findings of Scutter, Leva, Tim, and Sharron (2010) that teething problems were encountered by participants during the intervention with videocast which was later resolved and participants found the intervention interesting and educative. Also, Hussain (2007) stated that during the implementation of virtual learning, students faced some problems which include problem of password, computer vision syndrome, fingers' joint pain, electricity failure, among others. Finally, the participants with a mean score of 1.62 disagreed that teaching was complex and that they could not understand the vodcast.

Research Question 3: How Engaging is the Interaction in using LMS for Learning?

Table 4: Use of LMS among Learners

Variable	Mean	SD	Category	Remark
I find LMS user friendly	3.64	0.485	4	Strongly agree
I think the interaction is helpful	3.40	0.495	3	Agree
I feel more rewarding using LMS for learning	3.40	0.495	3	Agree
I rarely use computers to learn	1.58	0.499	2	Disagree
I have difficulties in navigating on the platforms	1.46	0.503	1	Strongly disagree
Pooled	2.70	0.186	3	Agree

Source: Field Survey 2020. Sample size = 60. SD (Standard Deviation). Category: 1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Agree (A), 4 = Strongly Agree (SA)

Table 4 showed that 3.64 of participants agreed that the LMS is user friendly. They agreed (3.40) that the interaction is helpful to them and feel more rewarding using LMS during the pandemic period to learn (3.40). The participants disagreed and strongly disagreed that they rarely use computers to learn (1.62) and that navigation on the platform is difficult. In line with the survey carried out by Aixia and Wang (2011) reported that learners viewed learning through internets, satellites, television as advantageous and students' attitude towards online learning was positive. Generally, participants agreed that the use of LMS for interaction and learning is quite engaging (2.70). The finding is supported by Buzzetto-More (2008) that discovered that students preferred hybrid courses as compared to traditional face-to-face delivery of courses.

After the administering of the questionnaire, the participants were requested to provide suggestions on the way and manner in which the intervention could be improved during and after the COVID-19 lockdown. Their suggestions are grouped according to the following headings; contents, technical and usability problems, facilitators, and Interactions. Participants' sampled responses are represented with P.

Content: Participants' perceptions of the content

P1: *"I enjoyed the vodcast lessons and the interaction with the LMS. However, the contents of the course should include more graphics and exercises."*

P2: *"Some of the topics were well taught by the lecturer while few topics were not taught in a logical order."*

P3: *"The teacher tried their best to make the lesson meaningful, they should solve more examples and the time frame for each lesson should be increased from 10 mins each."*

Interaction: Participants' perception of their interaction with LMS

Learners recommended that online interaction should be extended beyond the period of lockdown. Some suggested that the intervention should complement face-to-face interaction used.

Technicality and usability problem: Summary of issues encountered by the participants during the intervention

P5: *"This is my first time making use of the Learning Management System (LMS). I often forget my password."*
P6: *"I always have problems in navigating from one page to another though it is quite interesting."*
P7: *"Visual and the graphics cause distractions for me."*

Facilitators: An experience of participants with facilitators during the intervention

P8: *"Instructors perfumed wonderfully well. They should have engaged more with us using examples."*
P9: *"Time allotted for each topic should be increased."*
P10: *"Some facilitators taught in line with the syllabus while some went outside the scope, summary of the topics should be given at the end of each topic."*

IMPLICATIONS

The findings of this study have resulted in some educational implications for the government, curriculum planners, school teachers, school administrators, and policy makers. The findings of this study call for the attention of curriculum planners to incorporate the use of technology-based strategies as strategies to be used for teaching and learning most especially physics at the senior secondary schools.

The findings from the study also calls for the attention of teacher training colleges for more actions for the curriculum of teacher training colleges to be more grounded in the acquisition of online teaching skills.

The study calls for the attention of school administrators to organise a refresher course/ training for their teachers on teaching through online platforms.

The findings of the study indicates the needs for the attention of school teachers that technology-based online teachings should be combined with face-to-face even after the pandemic period has ended.

The findings call for the policy planners and the Federal Ministry of Education to provide adequate infrastructures for technology-based online teaching in various schools.

CONCLUSIONS

The study and its findings have identified that the use of videocast (video and podcast) lessons has significantly helped in improving learners' understanding of the subject matter.

The study also showed that the perception of learners towards the use of the videocast (video and podcast) lessons was overall positive. Therefore, its use should be continuously encouraged and implemented in all schools.

Learners also demanded that the videocast (video and podcast) lessons as online teaching should be used to complement face-to-face teaching after the pandemic has ended.

Nigerian Educational Research and Development Council (NERDC) should look for possible ways of introducing online learning skills into the curriculum.

RECOMMENDATIONS

This study aimed at examining the perceptions of learners on the usefulness of vodcast lessons as the strategy in online teaching and the extent to which strategy has met the needs of learners during the period of lockdown as a measure to contain COVID-19 from further spreading. However, based on the findings of the research, the following recommendations were made:

i. The use of online learning, LMS, videocast should be incorporated into classroom learning to complement the face-to-face mode of learning

as learners displayed positive perceptions towards the use of video-recorded lessons during the pandemic period and beyond.

ii. Appropriate skill training for teachers should be done to facilitate e-learning in schools

iii. Facilities like internets, adequate power supply, software, and computers should be made available in schools to facilitate e-learning not during this period alone but to be used effectively in the future.

iv. Research in education on optimising instructional designs and delivery should be embarked upon.

v. School administrators should allow in-service teachers to attend seminars, workshops, pieces of training in online teaching skills to improve and acquire new online skills for facilitation in online teaching.

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