DEVELOPING ALTERNATIVE TEACHING CONTINUITY PLANS TO MOVE CLASSROOMS ONLINE AT COVID-19 ERA IN NIGERIA

CHAPTER FOUR

TOOLS FOR CREATING DIGITAL LEARNING CONTENT DURING COVID-19

OPIGO MARTIN WILLIAMS
Department of Industrial Technology Education,
University of Uyo, Uyo.
&
GIAMI, DORATHY KADUBALAP
Department of Business Education,
University of Uyo, Uyo.

Abstract
Corona virus Pandemic (COVID-19) is a health crisis that has caused a global lockdown of educational institutions which has led to the interruption in students 'learning; disruption in internal assessments; and the cancellation of public assessments for qualifications or their replacement by an inferior alternative. This study is aimed at using tools for creating digital learning content during COVID-19 to mitigate the increase inequality in the educational institutions. The paper therefore outlines eight tools for creating digital learning content during COVID-19. The paper recommends among others that Federal Government should provide computers to students from low-income households and offer mobile data packages and telecommunication subsidies.

Keywords: Coronavirus Pandemic (COVID-19), Digital Learning content, Tools for Digital Learning

Introduction
The outbreak of the novel Coronavirus Disease (COVID-19) in China has rapidly permeated and profoundly change the world. It is a public health issue that has at the month of June 2020 claimed the lives of over 123,600 people worldwide and has affected all aspects of lives (UNESCO,2020). this has no doubt adversely affected global educational system and students are bearing the brunt of it. Many countries have decided to close schools, colleges, and universities. the severe short-term is felt by many families around the world, also to children social life and learning. Teaching and students' assessments are moving online. These interruptions will not just be a short-term issue, but can also have long-term consequences for the affected cohorts and are likely to increase inequality. According to United Nation Education and Cultural Organization (UNESCO) (2020), an estimated 1.725 billion learners have been affected as a result of schools' closures,

representing about 99.9% of the world's student population. To mitigate the effect of the pandemic, the world is embracing technological innovations. virtual interactions are increasingly adopted to replace face-to-face engagements and limit the total disruption to education sectors. UNESCO (2020) has recommended the use of distance learning programmes, open educational applications, and platforms by schools and teachers to reach learners remotely.

Digital Learning Content

Digital Learning content is "learning facilitated by technology that gives students some element of control over time, place path and or pace. Digital learning is more than just providing students with laptop. It requires combination of technology, digital content and instruction. Digital learning is the high-quality academic material which is delivered through technology. It is what students learn, it ranges from new engaging, interactive and adaptive software to classic literature to video lecturers to games. It isn't simply PDF of text or PowerPoint presentation, but uses various technologies and tools to support learning and teaching in different contexts, it facilitates how students receive content. This includes digital technology, internet access and hardware, which can be any internet access device from desktop to a laptop to an I Pad to a Smartphone, network digital device, associated software and course were with learning scenarios, worksheets and interactive exercise that facilitate learning (European University association Publications, 2014).

According to (Joint Information System Committee Development Group 2004), Digital learning enhances learning to take place when it is most needed (just in time s distinct from just in case) and when it is most convenient. Learning can be provided with specific learning objectives. It is learners-centric' in that it can be customizes to suit an individual needs-learners can choose different learning objects within an overall packed (Armstrong, 2012). Pollard and Hillage cited in Armstrong (2012) saw digital learning is the administration of learning opportunities and support via computer, network and web-based technology to help individual performance and development. Digital learning is to take a course online using a modern, wireless or cable connection to access academic courses material from a computer, phone or hand-held devices.

Digital learning provides educators to design the courses, curriculum based on the pace and ability of each individual student. In the conventional model of teaching, one-on-one tutoring is not only tedious and inefficient; it becomes almost impossible to impact in classroom of 50 students. The teachers have an obligation to complete the course within stipulated time, under this circumstance, catering to individual needs of the students is often not humanly possible for the teacher. This creates gap in overall learning and often leads

Prof. A. O. Ekong, Dr. Stella M. Usen & Dr. Etop N. Essien

2

to lack of interest among the students when they are unable to catch up with the rest of the class (Huang, Liu, Tlili, Yang, & Wang, 2020). In digital format, the teachers could customize the curriculum based on individual learning speed and capability. Ease of providing feedback will help the students and teachers to communicate clearly about learning difficulties and come up with solution together during Covid 19 Pandemic. The Covid 19 Coronavirus global Pandemic is creating global health crisis 82% of the world's learners are no longer in traditional schooling or education programs and UNESCO is recommending online learning and education technology to reach learners remotely. All Children: A Grand challenge for development developed list of nine ACR GCD-funded solutions to respond to education needs during the global COVID-19 digital response.

Tools for Creating Digital Learning Content During COVID-19 (UNESCO, 2020)
1. MOODLE
MOODLE is a free software package designed to help lecturers and students in the creation of quality teaching and learning. Modular Object-Oriented Dynamic Learning Environment (MOODLE) was built by Martin Douglas at Curtin University, Australia. MOODLE has a number of advantages in education. It is easy to install, upgrade and use. It can be installed on as many servers as involved without an additional cost. MOODLE requires no modification on Unix, Linux, Windows, Mac OS and any other systems. It is implemented for educational purpose which some other e-learning platform lack.

MOODLE supports user name authentication. Each user is given an account and password to access the MOODLE portal site. Once logged in, users have access to the courses they are registered in. Lecturers are registered as users that can edit the course's site, including modifying the activities and marking students. The contents of course and activities almost are in the middle of the page. The types of resources are: text files, (X) HTML files, links to Webpages, images, multimedia files and links to uploaded files; while the activities commonly used are quiz, chat, forum, choice and assignment. MOODLE has a module to conduct survey on the users and it supports built-in template for the questionnaires, however it does not have facility to generate or insert a new questionnaire. An online survey using different tools was built then uploaded to the survey website on the course page in MOODLE. Students participate in the online survey in their free time (any time) (Cárdenas & Sanchez, 2005).

MOODLE is a learning management system (LMS) that can be used to stabilize the increase inequality in educational sector at a very low cost. It does not seek to create a more democratic and participatory learning process and synergies of cultural transformation; it just to solve specific problems: massive classes, lack of lecturers, excessive teaching hours

Prof. A. O. Ekong, Dr. Stella M. Usen & Dr. Etop N. Essien

3

for lecturers, coordination difficulties, lags in studies for lack of teachers, Jordi and Michel (2020).

Jordi and Michel (2020), outline the uses and benefits of Moodle as a learning management system (LMS) that can be used to stabilize the increase inequality in educational sector.

i. Students

Quantity of Contents

The main problem with teaching material is the accessibility to it. Having all the information online (even locally in the campus internal network) would be an important timesaver for all, and will provide students with a wealth of contents that they could not have access before.

Quality of contents

The digitalization of all the teaching resources into the LMS will drive a quality control process that will greatly benefit students. A lot of the teaching material used have remained stagnant for a number of years due to different reasons. We believe that the process of content digitalization, coupled with the wealth of material freely available for most LMS on the Internet, will help increase the quality of the offered courses.

Easy of access

Majority of students are from low-income households who faces important connectivity limitations to access the Internet. Having an LMS complete with courses and teaching material at the school's campuses would provide all the necessary resources needed by the students and

would facilitate access to a much more important amount of information.

Practical activities

LMS provide a wide array of practical activities such as quizzes, workshops, assignments and forums that can be incorporated in courses. Also, LMS will allow the performance of new and more dynamic activities, including group work and cooperation. Students will be able to share and discuss exercises, experiences, works, and so on.

Novelty

Finally, the novelty of the digital teaching process will be in itself a strong incentive for the students to dedicate time to their studies, navigating the LMS and accessing all available content. For this reason, it is important to strive for a complete implementation of the LMS taking advantage of as many features as possible, capturing their interest and helping them to take advantage of everything that is offered.

ii. Lecturers

Prof. A. O. Ekong, Dr. Stella M. Usen & Dr. Etop N. Essien

4

Reduced effort
 The time and attention required by lecturers are greatly reduced. Quizzes and tests can be automatically generated from a pool of questions, activities can be carried out by the learners with minimal supervision and in many cases the existence of an LMS would enable the lecturers to engage in distance learning if they are unable to attend the class personally. This saved time can be invested in other activities like research, or further self-education.

Quality improvement
The digitalization of all the teaching resources will drive a quality control process in course documentations. In addition, the existence of an important number of courses available freely from many institutions online, along with the ease of organization an LMS inherently provides, will help the lecturers raise the quality of their courses by using new teaching material that would otherwise be complicated for them to get their hands on. Having more sources on which to base their courses, as well as a point of quality reference, will help them build their courses at a level that will be on par with the courses taught in any other educational institutions.

iii. Management and Organization
The existence of an LMS guarantees some level of organization for the courses taught at a school or institution. The course format can be easily defined and controlled, courses end up being better formatted and most importantly, the course is always there available for teaching, even when the lecturers are unable to attend. It is also important to stress that an LMS is not only a platform for having digitized courses on a server accessible over a network. LMSs are potent management tools that can be used to take care of human resources management, wages, curriculum organization and other management task that could greatly benefit any learning
institution.

2.Blackboard
Blackboard is a learning management system (LMS) that has revolutionised the conventional teaching system, resulting in the effective educational information management. It helps in converting the implicit knowledge to explicit or codified knowledge that eliminates the factors of loss of knowledge owing to memory limitations. Also, it reduces the costs of knowledge reproduction, leading to effective knowledge management. Blackboard can deliver modified, learner-focused contents and activities. It also facilitates interactivity, and engaged learning with immediate feedback. Blackboard is used by more than 70% of the U.S. colleges and universities (Jamilah, 2018).

DEVELOPING ALTERNATIVE TEACHING CONTINUITY PLANS TO MOVE CLASSROOMS ONLINE AT COVID-19 ERA IN NIGERIA

In a conventional classroom setting, a common disadvantage to face-to-face instruction is the cultural differences between the instructors and the students. These differences can crop up as there are individuals speaking different languages. However, in blended learning the Blackboard environment offers a number of online educational opportunities and advantages for students. One of the advantages is when students gets online feedback to their queries from the instructors through emails, and it encourages a deeper level of thinking where emphasis is on the written word. Also, in a Blackboard learning environment "students are:

1. Able to write while discuss;
2. Able to revise the class discussions note at any time;
3. Able to retrieve discussions softcopy at any time;
4. Able to add on or delete any part of the discussion at any time;
5. Able to cut and paste any materials from other resources;
6. Able to edit and re-organise teaching materials at any time;
7. Not constrained by study location"
(Jamilah ,2018).

According to Bradford, Porciello, Balkon, and Backus (2006), Blackboard Learning System meets the student learning needs in a positive way in terms of retrieving their course materials including assignments, lecture notes, slides, Internet hyperlinks, and audio/visual aid. Blackboard is a flexible "all-in-one" system, which has been selected as appropriate for student learning for the following reasons.

1. It is a good medium for communication and exchange of information.
2. It provides good peer support and peer coaching – contributes to enhancing peer learning.
3. It is used as a tool that facilitates student - centred and student – led learning.
4. It promotes lifelong learning and active engagement concepts.
5. It exposes students to modern technology and
6. It provides additional resources to teaching and learning.
(Bradford et al. 2006, Watson & Watson, 2007).

The blackboard is seen as a hybrid teaching tool. It can be used by lecturers throughout the lecture to discuss ideas or identify main points. It is suggested that only main points or ideas can be written instead of long drawn out pieces of information. The blackboard can be a useful tool to help students in visualizing key aspects of the lesson but may make things hard if lecturers attempt to teach a large group. According to Faisal, Eslam, Shadi, Zahraa, and Ayman (2020), Blackboard assessment tools include:
  i.   Tests
  ii.   Surveys

iii. Assignments
iv. Grading can be automatic and/or manual
v. Control over quiz/test features and functionality
vi. Availability, grading, reporting, and others
vii. Important technical/software considerations
viii. Alternative forms of assessment

Blackboard has a number of advantages:
i. Integrate assessment with teaching materials
ii. Available on demand
iii. Randomised question selection
iv. Automatic grading with immediate feedback
v. Reporting and analysis

However, blackboard has a number of disadvantages:
i. Not suitable for testing of all skills and activities
ii. Needs to IT skills
iii. Time required to design and input questions
iv. Security
v. Plagiarism

3. World Reader

World reader provides people in the developing world with free access to a library of digital books via e-readers and mobile phones. Since 2010, over 13 million people across 47 countries have read from world reader's digital library of thousands of e-books and they have special COVID 19 effort. World reader is used to support students to read different books at a time through digital library with the use of mobile phone. It is used to inspire students reading habit. It is use to provide reading solutions that support readers around the world with high quality cultural relevant books that inspire and educate students.

4. Sema

It is a finalist of ACR GCD's EduApp4 syria prize, the same package of Apps enables children to teach themselves how to read, write and do basic numeracy. The curriculum was designed in collaboration with pedagogy experts and teachers in Africa. Sema can be apply by the teacher when he/she wants the children to learn on their own device at their own time and pace.

5. World Around You

Funded through ACR GCD sign on for literacy prize, WAY Enables communities to create content in local and National sign Languages and share it in WAY's open content digital library of folktales. The digital libraries are viewable of folktales. The digital libraries are viewable from any web browser and can be remixed by anyone, including children with simple text and video editing tools. World around you can be applying by the teacher to create scenes filled with imaginative objects in the process of teaching and learning. it motivates students learning habit positively. The teacher can apply this tool to create authentic learning opportunities that will build empathy and broaden student's perspectives (Wayan, 2020).

6. Feed the Monster

A winner of ACR GCD and Norad's EduApp4syriA prize to support the education needs of out – of school Syrian refugee children, feed the monster is an early literacy digital gaming App that teaches children reading and writing fundamentals while collecting and growing their pet monsters. Available in more than 50 languages on Google play, and Arabic on the App store, research shows the pp improved children's early literacy skills and psychosocial wellbeing.

7. Global Digital Library

This open source digital library offers free accessible e-books in more than 40 languages readable on the web, mobile, or for downloading and printing. The books can also be translated or localized directly on the platform.

8. Electronic Communication Tools, including emails, discussion boards chart facilities and Video conferencing. Discussion board chart facilities are used by the teacher to stimulate critical thinking as the teacher establish a rapport with the students in the cause of teaching and learning. it can be use by the teacher to enhance student's motivation, fostering intellectual agility, and encourage democratic habits in students. It is use to create opportunities for students to practice and sharpen a number of skills, including the ability to articulate and defend positions, consider different points of view and enlist and evaluate evidence. While Video Conferencing are tool used to conduct live lectures. It is supported by audio, chart and white board. Learners can record the lecture which later can be used for on demands lectures.

Prof. A. O. Ekong, Dr. Stella M. Usen & Dr. Etop N. Essien

8

DEVELOPING ALTERNATIVE TEACHING CONTINUITY PLANS TO MOVE CLASSROOMS ONLINE AT COVID-19 ERA IN NIGERIA

Reasons to Embrace Digital Learning During COVID-I9. (Edwin, 20I5)

a) **Learn on your own device:** if your organization is against its employees bringing in their own device to work, you can access your learning when you are not at work.

b) **Learn at your own Pace:** Digital learning recognizes that your needs are unique and lets you learn in your own time in your own way, at your own pace.

c) **Get Access to information as soon as you need it:** Courses are well structured so that you can find the information you need easily.

d) **The industries best practice is at your fingertips:** because the digital learning contents can be easily updated you can be sure that you are accessing the most recent information.

e) **Self-evaluate:** Self-Assessment after every course let you know where you stand and give you opportunity to retry course until you get it right.

Digital learning is economically friendly and drastically reduces carbon foot print. In addition to these reasons, (Murha 2011) added these reason that digital learning enables students to learn not rely on teacher but be accountable themselves and becomes independent. Students learn more on the use of digital technology and electronic gadgets.

Students learn valuable employable skills in digital world such as appropriate online behaviour good digital citizenship, cyber safety, plagiarism, working with virtual teams'self-discipline in a virtual world, digital and global entrepreneurship, globalization etc.

Conclusion

The effective implementation of digital learning will mitigate the increase inequality in educational sector. Digital learning can capture students' performance data in real-time across the school allowing teachers more time to help students. In Addition to the more personalized learner centric Academic pathway, students and parents express interest on digital learning and blended learning environment due to the opportunities to offer expanded courses option. Today, five times as many parents even go to the extent of acquiring technological facilities at home.

Suggestions

The following recommendations will aid digital learning content during COVID-19.

2. Federal Government should provide computers to students from low-income households and offer mobile data packages and telecommunication subsidies.

3. Federal Government should provide solar-powered educational devices, pre-loaded with offline academic resources to students from low-income households.

4. Federal Government should mobilize all major telecom service providers to boost internet connectivity service for online education, especially for the under-served regions.
5. Federal Government should strengthen online security through collaboration with the telecom sector and online platform service providers

References

Jamilah A. A. (2018). The Effectiveness of Blackboard System, Uses and Limitations in Information Management. Intelligent Information Management. Retrieved 10th July, https://doi.org/10.4236/iim.2018.106012

Armstrong, M. (2012). Armstrong's Handbook of Human Resources Management Practice UK: Ashford Colour Press.

Bradford, P., Porciello, M., Balkon, N. & Backus, D. (2006) The Blackboard Learning System: The Be All and End All in Educational Instruction? *Journal of Educational Technology Systems*. Retrieved 15th July, https://doi.org /10.2190 /X137-X73L-5261-5656.

Cárdenas, R., & Sanchez, E. (2005). Security Challenges of Distributed E-Learning Systems. Retrieved 5th June, 2020http://dblp.unitrier.

Faisal, A., Eslam, A., Shadi, A, Zahraa,,M., & Ayman, N.(2020).E-learning Tools and Technologies in Education: A Perspective. *IT Faculty, Yarmouk University, Jordan.*

Heera, E. (2015). Corporate e-Learning and development. E-learning industry. Com E dey miss Publisher.

Huang, R.H., Liu, D.J., Tlili, A., Yang, J.F, & Wang, H. H. (2020). *Handbook on facilitating flexible learning during educational disruption:* the Chinese experience in maintaining undisrupted learning in COVID-19 Outbreak. Beijing: Smart Learning Institute of Beijing Normal University.

Jordi, G. & Michel, S. (2020). IT or not to be: The impact of Moodle in the education of developing countries. *Universitat Politècnica de Catalunya – Barcelona Tech (UPC).*

Prof. A. O. Ekong, Dr. Stella M. Usen & Dr. Etop N. Essien

10

Joint Information System Committee Development Group (2004). Introduction to Effective Practice with E-learning. www.jose.ac.UK/ex learning made goby.HTML.

Murcha (2016). On an e-journey with generation/https//murcha work press.com Panworl Education (2016). Jabree Building, All Nahoa, Sharjah-Uae N0.214, Al United Nation Education and Cultural Organization (UNESCO) (2020). Retrieved 8th June, 2020. http://*www.knowcovid19.ng*

Watson, W. R & Watson, S. L., (2007). An argument for clarity: What are Learning Management Systems, what are they not, and what should they become? *TechTrends*.

Wayan V. (2020). *Educational Technology Solutions for Covid- 19 Out- of School Children*: Co-founded ICT works and Director Intra Health International.

Prof. A. O. Ekong, Dr. Stella M. Usen & Dr. Etop N. Essien

11