

COVID-19 PANDEMIC: THE PENDULUM FOR RECONSTRUCTION OF INSTRUCTIONAL SYSTEM IN NIGERIA

CHAPTER ONE

Application of Digital Learning Tools for Creating Teaching and Learning Contents at COVID-19 Pandemic

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Abstract

This paper focuses on the tools for creating digital learning content during COVID-19. Digital learning empowers students by getting them to be more interested in learning and expanding their cognitive reasoning. Learning tools and technology enable students to develop effective self-directed learning skills. Digital learning tools and technology enable educators to rapidly share information with other educators in real-time. Digital learning tools considered in this paper include class dojo, edmodo, Google classroom, moodle, schoology, seesaw, thinglink among others. It was recommended among others that education sector in Nigeria has to provide training for teachers on how to use various tools in creating digital learning

Keywords: Digital Learning Content, Dojo, Edmodo, Moodle, Schoology, Seesaw, Thinglink.

Introduction

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COVID–19 is an infectious disease caused by a newly discovered coronavirus. The virus has affected nearly the entire world thereby causing the shift from traditional method of teaching to digital teaching done on the internet. Several people have lost their lives as a result of this virus which made fear to creep into the educational sector. Schools are locked down; teachers and students are at home waiting for school resumption. During this period there is need to transform teaching and learning and this requires the use of certain tools by the teacher in creating digital learning.

Digital learning is replacing traditional education methods whereby the teachers and students interact in the classroom and have physical contact with each other. COVID-19 has brought about a drastic change in classroom and it is best for education sector to think about newer teaching and learning techniques based on digital learning tools and technologies. The inclusion of digital learning in the classroom can vary from simply using tablets instead of paper to using elaborate software programs and equipment. Irrespective of how technology is integrated into the classroom, digital learning has come to play a crucial role in education. Digital learning empowers students by getting them to be more interested in learning and expanding their cognitive reasoning. Learning tools and technology enable students to develop effective self-directed learning skills. They are able to identify what they need to learn, find and use online resources, apply the information on the problem at hand, and evaluate resultant feedback (Panworld, 2017)

Digital learning tools refer to any program, app or technology that can be accessed through an internet connection and enhance teacher’s ability to present information and a student ability to access that information (Jennifer, 2020). Digital learning tools and technology sharpen critical thinking skills, which are the basis for the development of analytic reasoning. Digital learning tools and technology enable educators to rapidly share information with other educators in real-time. The explosion of free and open content and tools has created an environment of sharing economy. Embracing digital devices and connected learning, classrooms around the country and around the globe cannot only coordinate with one another to share insights but also boost learning, experience and communication skills. Traditional lectures may still exist along with the new-age learning tools and technology, but the lecture materials should be provided as a supplement to classroom activities and moved online for students to reference outside the classroom. Students often have the option to pace their learning and study ahead with a digital learning tool if they wish to do so. Through helping students think outside their typical

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learning modes, digital learning inspires creativity and lets children feel a sense of accomplishment that encourages further learning (Panworld, 2017). The aim of this paper was to bring out those tools used in creating digital learning content.

Tools for Teachers to Create Digital Learning Content

For successful transformation of traditional classroom to online teaching/learning environment, certain tools need to be put in place which the teacher would use which include but not limited to:

Class Dojo: This is a tool that connects school teachers, students and families through communication features, such as a feed for photos and videos from the school day, and messaging that can be translated into more than 35 languages and has been used in 180 countries (Bharti 2014). It also enables teachers to note feedback on students' skills and creates a portfolio for students so that families can be aware of school activities outside of meeting with teachers. Class Dojo allows students, teachers and families to communicate. To use class dojo, teachers register for a free account and create "classes" with their students (Pierce and Seibel 2012). They can give students feedback for various skills in class. These are customized and teachers can change the skills to adapt to the needs of the class or of the school (Rubin 2013). Teachers have the option to post pictures and videos in their class story, or to their school story. They can also message with families, receiving "read receipt" to know when their message has been read (Bharti 2014). However, families can also access class Dojo when they are invited by their child's teacher, and receive updates on what is happening in school, view their whole class story and see a timeline of their own child's experience in the classroom through pictures and videos (Sawers 2012).

Application of Classdojo Digital Learning Tool

Using this tool requires account creation of which the steps are shown below for clarification. Also, to create a classdojo account the teacher would have to download the application online. After that follow this step:

Step I: Open the app and select "I'm a teacher"

Step II: Click on "create teacher account"

Step III: Enter your email and create a login password, then tap "create account"

Step IV: Enter your title, first name, and last name, then tap "Next"

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Step V: Enter your school's name in the search field, tap on your school's listing, then on "join this school". Tap "I do not teach in a school" if you don't want to join a school or don't work in a school.

After this step you will receive a congratulatory message. The teacher would be given a class code which he/she will give to students to join the class.

For Students to join the class

Students will have to download the clasdojo app as well after that get the **class code** from their teacher.

Edmodo: Is a tool for communicating and sharing classroom content. Tools and resources to manage classrooms and engage students remotely, offering a variety of languages. This is an educational technology company offering a communication, collaboration and coaching platforms to students, school and teachers (Empson, 2013). The Edmodo network enables teachers to share content, distribute quizzes, assignment and manage communication with students, colleagues and parents. It is teacher-centric in their design and philosophy; students can only join if they are invited by the teacher.

Application of Edmodo Digital Learning Tool

Step I: Go to www.edmodo.com and click sign up

Step II: Select the top panel that reads Teacher Account

Step III: Enter your email in the top panel, and create a password. You also have the option of signing up with a Google or Office 365 account

Step IV: Enter your name

Step V: After you have filled in these, you will be brought to your home page

Setting up Classroom

The following are steps the teacher should follow to set up and start conversation in the classroom.

Step I: Set up your classes, there are plenty of ways teachers set up their schedule on Edmodo either by period which has to do with each class for each period you teach, by subject i.e. for each subject you teach and main class with small groups.

Step II: Invite your students to join your classroom by sharing your class code, or send email invitation

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Step III: Now that your classes are set up and students have joined, the teacher can start conversation, post updates, activities and resources.

Google Classroom: Helps classes connect remotely, communicate and stay organized. It is a free web service developed by Google for schools that aims to simplify creating, distributing and grading assignments. Google classroom integrates docs, sheets, slides, gmail and calendar into a cohesive platform to manage student and teacher communication. When using Google classroom students can be invited to join a class through a private code, or automatically imported from a school domain. Teachers can create, distribute and mark assignments all within the Google ecosystem. Teachers can monitor the progress for each student by receiving revision history of a document, and after being graded, teachers can return work along with comments. Google classroom ties Google Drive, Google docs, sheets and slides, and gmail together to help educational institutions go to paperless system (Kerr, 2014). Assignments are stored and graded on Google's suite of productivity applications that allow collaboration between the teacher and the student or student to student. To avoid sharing documents that reside on the student's Google drive with the teacher, files are hosted on the students drive and then submitted for grading. Google classroom supports many different grading schemes. Teachers have the option to attach files to the assignment which students can view, edit or get an individual copy. Once, graded, assignments can only be edited by the teacher unless the teacher turns the assignment back in. Announcements can be posted by teachers to the class stream which can be commented on by students allowing for two-way communication between the teacher and students (Steele, 2014).

Application of Google Classroom Digital Learning Tool: The following are steps in creating and using Google classroom

- i. Open a web browser and go to classroom.google.com. The teacher will have to sign in with Google Application for education account.
- ii. On the welcome screen, click the plus (+) sign at the top and choose create class
- iii. In the create a class dialogue box, type in the class name and section.
- iv. Click create.

After these procedures a class has been successfully created.

Thereafter the teacher will be given a code which he/she will use to invite students to join the class.

Note: The classroom has three main tabs. Here is what the tab means;

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1. **Stream:** This is where a teacher manages class assignments and make announcements to the class. The teacher can add new assignments, on due dates and attached materials. Upcoming assignments are shown at the left.
2. **Students:** This is where you manage your students. You can invite students to your classroom from here and manage their permission level. To invite students to your class, you have to set them up as Google contacts in your Google Apps for Education account or they have to be in the school's directory.
3. This is where you can add the course title and description, add a location for the class, and add materials to your class's Google Drive folder.

Moodle: Community-driven and globally-supported open learning platform. It is used for blended learning, distance education, flipped classroom and other e-learning projects in schools, universities, workplace and other sectors (Costello, 2013). With customizable management features it is used to create private websites with online courses for educators and trainers to achieve learning goals (Gavin, 2013). Moodle allows for extending and tailoring learning environments using community-sourced plugins. Moodle as a learning platform can enhance existing learning environments (Adam, 2015). As an e-learning tool moodle has a wide range of standard and innovative features such as a calendar and a grade book (Jordan, 2013). Moodle is a leading virtual learning environment and can be used in many types of environment such as education, training and development and in business settings.

Application of Moodle Digital Learning Tool

According to (Chris, 2018) to use moodle, it requires setting up a site. The teacher will go to <https://download.moodle.org/> and download the app. Then follow these tips:

- a. Install the "Moodle additional features plugin"
- b. Enable push notification
- c. Upload a detailed guide of how to use moodle mobile
- d. Create a custom theme for your site
- e. Enroll all the users in that course via the plugin

Adding Teacher and Students to Moodle

Before teachers and students are added to moodle they must first have an account on moodle site. Then follow these steps to add them:

Step I: Log in with administrator account.

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Step II: Go to the course where you want to add teachers and students

Step III: From the left panel (navigate drawer) click participants

Step IV: Click enroll users

Step V: From the drop down select the users you want and the role you want to give them

Step VI: Click enroll users

After this process a fellow teacher and students will be successfully added to a moodle account.

Schoology: Is a tool to support instruction, learning, grading, collaboration and assessment. Schoology is a social networking service and virtual learning environment for higher education institutions that allows users to create, manage and share academic content. Also, known as a Learning Management System (LMS) or Course Management System (CMS), the cloud-based platform provides tools needed to manage an online classroom. Schoology can help teachers contact students with homework and more. Teachers can manage students, manage the assignments calendar and add new assignments (Conte, 2011). The service of schoology include attendance records, online grade books, tests and quizzes and homework drop boxes. The social media features facilitate collaboration among a class, group or school (Moran, 2010). The system can be integrated with existing school reporting an information system and also provides the security filters and support that schools require.

Application of Schoology Digital Learning Tool

Step I: Go to www.schoology.com

Step II: Hover over sign up in the top right corner and select instructor from the drop-down menu

Step III: Fill out each required field

Step IV: Click the I'm not a robot box and follow the instructions to confirm your identity

Step V: Click register

Step VI: Type your school name or school zip/postal code into the designated field, then click the search icon

Step VII: Select your school from the results. If your school is not listed, click request to add your school at the bottom of the list then your school will be added.

After following these steps, it indicates that you have successfully created a schoology account as a teacher. Upon completion of registration the teacher would be given a ten-digit access code which he/she will give to students to join the class through the code.

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For Students

Students who sign up for an account using an access code are automatically associated with the instructor's school.

For student who do not have a schoology account, they would go to <https://schoology.com/register.php> and click student. Enter access code. This is a 10-digit code that will be given to them by their instructor/teacher.

The student will be asked to fill out the form with his/her information, click register to complete. After registration the student will be automatically enrolled in the course.

Seesaw: Enables the creation of collaborative and sharable digital learning portfolio and learning resources. Seesaw creates a powerful learning loop between students, teachers and families. Students use built-in annotation tools to capture what they know in seesaw's digital portfolio (Ashley, 2020). Teachers deeply understand student thinking and progress enabling them to teach better. Families gain a window into their student's learning and engage with school happenings. Students explore a variety of powerful and intuitive tools to show what they know in the way that works best for them.

Application of Seesaw Digital Learning Tool

According to (Ashley, 2020) seesaw account could be created following the steps below:

Step I: Create a teacher account at app.seesaw.com or download the seesaw class app. Select "I'm a teacher" to get started.

Step II: Create your class and give it a name and grade level.

Step III: Help students sign in to seesaw by giving them class code.

Thinglink: It is a tool used in creating interactive images, videos and other multimedia resources. Thinglink is used for creating interactive images by tagging content to a photo or drawing. Tags can link to websites, facebook or twitter pages, videos, maps, other images, audio or Google resources. Users of thinglink can also create interactive videos with a professional or premium account. It could be useful for science, geography, history, language and visual arts. In science, students could create an interactive image to develop or demonstrate their knowledge about a scientific concept or topic (Conte, 2011). English/Language students could make their own vocabulary mind map and tag related words and images. Geography students can pinpoint names of places and landmark using thinglink. Arts students could create virtual tour by tagging paintings to artist, times and

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movements. Thinglink offers an easy way to create audio-visual learning materials that are accessible in an integrated reading tool. All text descriptions in image or video hotspots could be read with immersive reader-in over 60 languages. Thinglink helps students become fluent in using multiple forms of media to express themselves in and out of the classroom.

Application of Thinglink Digital Learning Tool

Step I: Go to <https://www.thinglink.com>

Step II: Sign up by creating an account using an email or sign up using your facebook, twitter or Google account.

Step III: Explore or follow popular users or topics

Step IV: Upload an image from your hard drive, the internet or facebook

Step V: Select a position on the image and tag it to a website, video or map.

After this the teacher invites the students by sending a link to them or create a classroom and add the students. Students who wish to join the class on their own has to register on thinglink.

Buncee: Supports the creation and sharing visual representations of learning content, including media-rich lessons, reports, newsletters and presentations. It is a creational presentation tool for students and educators to create interactive classroom content, allowing learners of all ages to visualize concepts and communicate creatively. Individuals, teachers, students or schools can sign up for a free account. A teacher can also get a 30-day free trial for his/her teaching and the students with the full educator dashboard. Buncee offers free weekly webinars for regular audiences and for schools and district as well. Through a virtual “Buncee” or canvas constituted of a single or multiple slide, one can integrate animation, audio, pictures and “stickers”.

Application of Buncee Digital Learning Tool

Go to www.buncee.com

Click “sign up” and register for an account

Click on “Get started”, create your first ‘Buncee’ by choosing how to customize it.

To Create Classes and Student Account

Step I: Log in to your account, after logging in, click on the “Classes” tab at the top left corner to open your classroom dashboard.

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Step II: In this classroom dashboard, you will see a list of cases that are currently in your account, as well as the “Add New Class” option for creating a new class.

Step III: Click on it, and type in the “class name” and subject. You can also select a grade level from the drop-down menu when you click on “Grade”. Then click ‘create’.

Step IV: Now your new class will appear in your classroom dashboard. You will be able to see the class name, the number of students in the class, as well as the class code.

Adding Students to a class

While students can create accounts and add themselves to your class by entering your class code. As the teacher, you can add students to your class through manual upload, adding from an existing student list or by uploading a CSV file.

Nearpod: Software to create lessons with informative and interactive assessment activities. it is an instructional platform that merges formative assessment and dynamic media for collaborative learning experiences. With nearpod students complete assignments independently while the teacher gain insights into students’ understanding with post-session reports. It has easy synchronization and control live lessons across all student devices. Using this tool for digital learning classroom communities stay connected with collaborative activities and formative assessments like virtual reality, polls, collaborate boards, and game-based quizzes delivered through learning experience.

Application of Nearpod Digital Learning Tool

Before a teacher start using nearpod he/she has to create an account in order to have easy access to it. The steps are as follows;

Step I: Provide your first name

Step II: last name

Step III: Phone number

Step IV: Email

Step V: School/District name

Step VI: Your role

Step VII: State

After providing this information you have successfully created a nearpod account. Start inviting students through the link that will be given to you.

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Pear Deck: Facilitates the design of engaging instructional content with various integration features. It is an educational technology company offering a web-based application to K-12 schools and teachers. With pear deck a teacher can design a new presentation or open an existing one in slides. Library templates are created to support learning objectives typically found at the beginning, middle and end of a class. Through pear deck one can always create own custom activity or question from scratch. Use text, number response, multiple choice, and web slide questions to engage students. With pear deck Add-on, the teacher can leave audio instructions descriptions, or examples for students to hear while they read the prompts and respond to interactive questions from the teacher's pear deck slide presentations (Root, 2014). The teacher can make a new recording instantly or upload one from the computer. The recording inserted will play in the student view of the teacher's live presentation sessions. Pear deck is perfect for any remote learning lesson. As an instructor, using pear deck you can quickly see what each individual think on the teacher's dashboard. Noticing a lot of wrong answers? Adapt, take a pause, back up, re-explain your lesson and do not forget to help the learners help each other. This will make learning easier for them.

Creating a Pear Deck Account

In creating an account. The teacher can choose one of these options:

- i. The peardeck website
- ii. Google slides
- iii. Powerpoint online

To create and present using peardeck, the teacher will need a Google or Microsoft office 365 account.

A teacher that has created Google classroom, can invite a class to join with Google classroom in the Dashboard, and post takeaways link to their classroom feed.

However, teachers logging in with a Microsoft office 365 account can invite students to join their presentation session in Microsoft Teams following these steps:

Step I: Go to peardeck.com and click teacher login

Step II: Choose the type of account with which you want to log in

Step III: You will be asked to grant peardeck access to your Google Drive or One Drive.

According to Abby (2016) answer a few accounts set up questions.

- a. Select your role

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- b. Click authorize to connect peardeck to your Google Drive or One Drive. The teacher will be prompted to sign in with email and password and will be asked to grant peardeck permissions.
- c. Enter your postal code and school. If you do not have a US postal code or your school does not appear on the drop-down list, type in the name of your school or any five (5) numbers in place of a postal code.
- d. Click get started to start a new presentation with interactive questions. Your free 30-day trial of peardeck premium will begin automatically.
- e. Open any Google slides (if you used a Google account) or power point online presentation (if you use a Microsoft office 365 account) and get the peardeck add-on.

After this process the teacher invite the students to register on peardeck to join the online presentation.

Trello: A visual collaboration tool used by teachers and professors for easier course work planning, faculty collaboration and classroom organization. With trello users can create their task boards with several columns and move the tasks between them. Typically, columns include statuses: To Do, In Progress, Done. The tool can be used for personal and business use. Trello has a variety of work and personal uses including real estate management, software project management, school bulletin boards, lesson planning, accounting, web design, gaming, and law office case management (Root, 2014).

Application of Trello Digital Learning Tool

To create a new Trello account, the teacher will need to use a unique email address not already used in Trello. After that follow these steps;

Step I: Go to <https://trello.com/signup> and enter your information to complete the sign up

Step II: Check your email to confirm your new trello account.

After this process you are set to use trello.

For Students: The teacher can add students to boards even if the students are not already using trello. Enter the student's name and email address and click "send invitation". The user's permission level will be considered "virtual" until they join trello, but you can add the user to cards. The teacher can also invite students to his/her boards by sharing a special link with them

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Mind Meister: This is an online mind mapping application that allows it users to visualize, share and present their thoughts through the cloud (Gina, 2008). Mindmeister provides a way to visualize information in mind maps utilizing user modeling, while also providing tools to facilitate real-time collaboration, coordinate task management and create presentation (Rhys, 2013). The aim of Mindmeister is to enable individuals to collaborate on a mind map, where everyone can share ideas, comments and plans as well as vote on ideas in real-time. MindMeister allows users to share and edit mind maps, leave comments and feedbacks, attach files, images, videos and link to external as well as internal sources through embedded Uniform Resource Locations (URLs). Mind maps can be shared with colleagues internally or externally through an email invitation to collaborate, or via a hyperlink (Nikos, 2014). Instead of writing out linear notes, students can draw a mind map to help them include more information. This is important because most lectures are not given in a truly linear manner. Many lectures will include references to previous lectures as well as references to future lectures or outside topics. When a student uses a mind map instead of traditional notes, they can demonstrate the connection between different topics. Mind maps also help students capture the most important information instead of struggling to write down every detail. Teachers can use Mindmeister to help them put together a lesson plan for a quarter, semester or even a year. Teachers can share the map with students who can use it as a basic study guide.

Application of Mindmeister Digital Learning Tool

Step I: Go to <http://www.mindmeister.com>

Step II: Click on sign up for free

Step III: Click on sign up at the very bottom of the page under basic (free)

Step IV: Either create an account (option 1) or sign in using facebook or Google account (option 2)

Step V: Click on my first mind map to view a tutorial about getting started. Click on next step to progress through the tutorial.

Step VI: Click on my maps to return to your account page and click on new mind map to create your masterpiece.

Step VII: Add nodes (new ideas/topics) by clicking on the plus sign. delete items you do not want by clicking on the No icon. Change the way your node looks or add an image using properties box.

Step VIII: When you are done creating your mind map, click on the map options icon at the bottom of the page, and then choose publish

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Step IX: When the publish map dialog box opens click publish. Copy the URL from the dialog box and paste it in your blog.

After successful creation of account, the teacher would invite the students by typing their email addresses or get a link to share with them, or share it on social media.

Conclusion

Digital learning platform has come to stay especially during COVID-19 pandemic which the entire world is affected in one way or the other. Education sector in Nigeria has to provide training for teachers on how to use various tools in creating digital learning. The teachers will not just wake up to start using these tools without prior training or knowledge. As such, there is need for teacher training. The teachers on their part seeing the trends in teaching which has shifted from traditional to digital method of teaching should utilize various learning tools that could make teaching and learning possible amidst any pandemic.

Suggestions

The following recommendations were made;

1. Teachers should acquire knowledge on how to use various tools for digital learning.
2. Government through its agencies should focus on how to create avenue for teachers and students to interact and learn outside the traditional classroom.
3. Parents should provide students with necessary items that would encourage them to learn online such item include but not limited to laptop, smart phone among others.
4. Government through its agencies should make provision for constant electricity supply to avoid disruption during teaching and learning online.
5. Education planners in Nigeria should provide training for teachers on how to use various tools in creating digital learning.

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