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ONLINE LEARNING TOOLS FOR EFFECTIVE GEOGRAPHY CURRICULUM DELIVERY IN POST COVID ERA

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Abstract

Contemporary emergency situations derived from Covid-19 pandemic have necessitated urgent response mechanism to address unprecedented disruption of brick-and-mortar classroom settings by means of immediate transition to online learning amidst covid pandemic and beyond. Thus, the paper highlighted the contemporary issues in the teaching and learning of secondary Geography education, discussed the role of Community Of Inquiry (COI) framework in cultivating impactful pedagogy of Geography education in post Covid-19 pandemic, identified some learning tools/resources useful for Geography curriculum delivery and the challenges associated with online learning using these tools. Finally, the paper suggested among others the provision of adequate technology-enabled learning tools/resources by federal and state governments as well as private organisations to enable schools transit to online learning and deliver quality secondary Geography education in post covid-19 pandemic era.

Key words: Curriculum, Geography, Covid-19, Online Learning

Introduction

Geography is described as multidisciplinary subject with a very wide scope. It is now one of the optional subjects at senior secondary school level. The subject can be viewed as having four major areas/divisions, namely: physical Geography, human Geography, regional Geography and practical Geography/map reading. According to Ajibade and Raheem (2010), the first three divisions of Geography above could be wrapped up to mean the study of physical and human elements of different regions of the earth while Map work is a means of depicting the relationship between the three areas. The main reason of teaching Geography is to create geographic consciousness among

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the students as they interact with the natural and human spheres of the environment. The education system in Nigeria has undergone several reforms virtually at all levels as a response to rapidly changing world conditions. The changes are usually in forms of curriculum reforms that attempt to take cognisance of social, political, economic and environmental issues at local, national, regional and global scales. Emerging local and global emergencies/crises as well as technological advancement have affected the selection of curricular contents and how they are taught to students in Geography and several other subjects.

The Coronavirus (Covid-19) pandemic has tremendously influenced and shaped the education systems around the world with both up and down sides. The covid-19 pandemic resulted into total disruptions of school activities in many countries including Nigeria and restriction orders on social gatherings and movement of people. According to UNESCO (2020) Covid-19 pandemic resulted in the closure of schools in about 192 countries worldwide with over 91% of the total number of enrolled learners temporarily forced out of schools. In Nigeria schools at all levels of education were closed for nearly seven months or so as part of measures to contain the spread of the disease. This means that learners stayed at home for time longer than ever before. One important lesson from this crisis period is the preparedness of education system to adapt to changing time. This therefore calls for transformation of education landscape and teachers' pedagogical practices in line with present reality. The fast-paced move into the online learning and wide spread adoption of digital technologies for course designs and pedagogical transformation have engendered significant challenges for both students and academic communities (Peimani & Kamalipour, 2021).

Information Technology (IT) has received considerable attention in education and recognised as one of the most important modern innovation that transformed the teaching and learning process even before the onset of Covid-19 crisis. IT offers invaluable digital tools for teachers, students and materials to interact at distance and at the same time access and share learning materials. The closure of schools in Nigeria and other countries exposed the IT divides between individual countries for schools were moved to homes and the typical face-to-face classroom interaction would have to now take place through the *online learning environment*. With the quick turnaround into virtual learning, teachers were seeking support for communicating digitally, integrating technology tools, designing online instruction, assessing students' levels of understanding, and serving students equitably through the online environment (Stephanie, Melody & Green, 2020). Covid-19 demands new role from teachers, students and parents as key actors in delivering quality education during pandemic and beyound. Teachers were faced with task of

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communicating digitally to their students and virtually too amidst limited available technology between schools in urban and rural centres and between low and high socio-economic homes. To this end, Louise, Miri, Sarah and Mercè (2020) stated that the level of technology available and the educational context influenced the pedagogical practices as students learnt through pre-recorded instructional videos, interactive online lessons, educational television and printed resources.

The need to develop emergency response to crisis like Covid-19 pandemic exposes the Nigerian government unpreparedness to provide quality secondary Geography education through online environment. Challenges of technology availability, infrastructure decay, poor funding are amongst other factors reponsible for unprecedented and prolonged closure of schools in the country. Government seemed to have learnt little or no lesson from the first wave of the crisis as schools were reopened amidst fear and uncertainty as to what might happen to students since no provision was made of technology to minimize face-to-face interaction between teachers and students. The only measures to avert the spread of the virus in schools were the use of face mask and provision of hand washing facilities. Quality education during Covid-19 pandemic and beyond can be attained with the teachers' reflection of technological, pedagigical and content knowledge.

Contemporary Issues in Secondary Geography Education

Like any other school subject, Geography has witnessed changes in a number of ways. Such changes include among others: curriculum reform, introduction of modern and improved instructional strategies for Geography teaching, modern teaching facilities and application of Information and Communication Technologies among others. Geography education has traditionally emphasised memorisation of the names of places and their capitals, rivers and definitions of landforms among others. Change in knowledge and growing technological advancement in the world has affected the ways we do things in schools and places of work. New trends and unprecedented emergencies such as Covid-19 demand the application of technologies to mediate the role for both the teachers and learners in the learning environment.

The importance of ITs within educational institutions, particularly in improving teacher's pedagogies has been recognised by all stakeholders in education. Information and technologies, especially network and digital technologies have been found to encourage active learning, support innovative teaching, reduce the isolation of teachers, and encourage teachers and students to become active researchers and learners (Yusuf, 2011). Developments in information technologies have reshaped people's views towards themselves and their environments, as a result of which a parallel change and development at the same pace has become inevitable in the field of Geography

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education (Ozgen & Ufuk, 2009). Today, various information technologies such as internet, computers and software serve as learning tools for use by teachers to deliver quality instruction during and in post crisis era. The transitioning process to an online learning necessitated by Covid-19 pandemic presented serious challenge to schools and subject teachers on how to digitally design instruction, imbibe impactful pedagogy to deliver quality education. Realising this important issue, Wolfe and Mccarthy (2020) contended that since technology was not the focus of previous teacher professional development, many teachers were unsure how they would be able to deliver the same quality instruction to students in a virtual environment. Teaching Geography through online environment is different from usual application of ICTs such as projector or computer to present lesson in the classroom. Educators should push for radical transformation of every aspect of education if transition to online learning is imperative considering the new role they have to play to support students in attaining the learning goals.

Role of Community of Inquiry (COI) in Cultivating Impactful Pedagogy in Geography in Post Covid-19 Era

Geography is a multidisciplinary subject that cuts across a wide range of subject areas giving it unique contents that equip students with necessary knowledge to understand both natural and human processes within their immediate environment and beyond. Geography teachers need to develop new skills as they try to deliver lessons through online environment. The future of learning resides in the use of technology. Geography therefore deals with contents that appeal directly to technology. For instance, such aspects of Physical Geography (e.g. environmental resources, weather and climate etc) and Geographic Information System (GIS, e.g. GIS data, GIS Application etc) would have provided sound ground for the use of ITs for delivering quality Geography education even before the Covid-19 pandemic. Geoinformation technologies, which refer to computers, internet, GIS software and other hardware resources utilised as teaching tools in Geography can provide huge support Geography teachers require to achieve pedagogical transformation in post Covid-19 era. Geoinformation technologies also include the geographic information systems (GIS), remote sensing (RS) or global position systems (GPS).

The Covid-19 pandemic and its concomitant emergencies has shown that the education system in Nigeria is not prepared to take on the challenge of transformation needed to deliver quality education to students in post covid-19 era. The emergency situation emanated from the pandemic has made it very clear that there was little or no commitment by the governments at all levels in the provision of technologies that support online learning and teachers lack

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requisite skills and technological know-how to adjust their pedagogical practices for an online interaction and engagement. As Thakkar and Panchal (2022) succinctly put it, it is incumbent upon all educators to use crisis-driven opportunity to push for drastic transformation of almost every aspect of education: from curriculum to pedagogy, from teacher to learner, from learning to assessment and from location to time. Community Of Inquiry (COI) framework offers propitious opportunities for achieving this transformation.

Community of Inquiry (COI), propounded by Garrison, Anderson and Archer (2000), provides framework for supporting teachers to effectively cultivate impactful pedagogy and deliver quality instruction by means of online learning. As schools were forcefully compelled by Covid-19 crisis to transit to online teaching, COI was recognised as viable framework to describe and understand online interaction supporting teaching and learning (Maher, 2020). COI is a model which highlights the importance of interaction and sustained brainstorming for developing a cohesive and proactive learning community able to adapt to new events and challenges, as those presented by COVID (Gandolfi & Kratcoski, 2020).

Elements of Community of Inquiry

There are three elements that are crucial to the building and sustaining of an online learning via COI (Garrison, Anderson and Archer, 2000), namely:

a. Social presence

b. Cognitive presence and

c. Teaching presence

The three elements are key to understanding of this model of online learning and as Maher (2020) pointed out the interactions of all three elements of the model produces the educational experience for participants.

Social presence, in the view of Maher (2020), is the ability of participants to project their personal characteristics, thus presenting themselves as real people. This occurs as learners identify with the group, engage in meaningful conversations, and develop interpersonal relationships through the projection of their individual personalities (Gronseth et al., 2020). Collaborative activities and technologies can be used to encourage students to express their thinking and engage in course-related interactions. Effective teachers foster a caring, inclusive, cohesive and non-discriminatory environment where students feel accepted and enjoy positive relationships (Malik, 2016). Social presence promotes affective and open communication among community of learners.

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Oliver, Tatar and Houchins (2020) recommended the use of Zoom-based introductions and discussions, and FlipGrid boards for participants to project themselves to peers. Connective and communicative tools of audio and video types can enhanced social presence among students.

Cognitive presence is the extent to which the participants in any particular configuration … are able to construct meaning through sustained communication" (Garrison, Anderson & Archer, 2000). Cognitive presence refers to the construction of meaning and confirmation of understanding through problem-based activities. This involves identification of a problem, exploration of a problem through research, knowledge construction through critical reflection, and testing of solutions. Cognitive presence requires the learners to progressively play active role in online learning process.

Teaching presence consists of the design of the educational experience, as well as facilitation for the purpose of constructing meaningful and worthwhile knowledge (Garrison, Anderson & Archer, 2000). It is supported through an online environment that is perceived by students as both welcoming and collaborative. Instructors facilitate meaningful learning activities and provide timely instruction and feedback in a variety of ways, such as through leading mini-lessons, correcting misconceptions, posting updates, and synthesizing discussions (Gronseth et al., 2020). Teachers encourage this process by cultivating impactful pedagogical practices in which teacher and students work as learning community.

The three elements are critical in building an online Community of inquiry that support effective teaching and learning of secondary Geography. This framing approach to online teaching is very apt particularly in times of global emergencies when social distancing was adopted as the measure to prevent the spread of coronavirus globally. Several different learning tools/resources are available for use to deliver quality Geography education in post Covid pandemic era. This would be the focus of next section.

Online Learning Tools for Geography Curriculum Delivery in Post Covid Era

There are many online learning resources teachers can use to design instruction, create videos of his lesson, communicate and share to students as well as assess students' learning. It is pertinent to mention that the possibility of students and teachers to engage in online mode of course delivery is largely dependent upon accessibility of the internet and technological resources/tools. Some of the learning tools/resources available for use in online learning include but not limited to the following:

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Learning tools/resources	Activities
Google Classroom	Connect teachers with students and allow teachers to share study materials in different formats, students ask question too.
GroupMe, WhatsApp	Share images of ideas, response to question/assignment,
Zoom, Skype, MS teams	Team meetings, students' presentation, small group discussion etc.
Flipgrig & Facebook Live	Video-based discussion, reflection, demonstration etc.
Piktochart	Interactive syllabus, photo-based quizzes, visualization of concept, collaborative data maps etc.
Padlet, Nearpod	Peer review of assignment and communicating through video, voice and text commenting.
Thinglink, EdPuzzle	Allows teachers to create images, videos, audio contents i.e. multimedia contents of their

The learning resources if chosen and utilized effectively facilitate and support online learning of Geography education in post pandemic era. In choosing the tools teachers should consider ease of access and availability for charges are applied to some resources while others are free- (Google classroom). Some of the tools are accessible through smartphones which are common amongst the teachers and students. Choosing from the numerous technology tools for continuing instruction during a disruptive event can be challenging, given differing and changing dynamics of the context (Gronseth et al., 2020).

Challenges of Online Mode of Course Delivery

Online course delivery is associated with challenges which can be grouped into teacher/school and student/parent challenges.

Teacher/school Challenges

Covid-19 has presented a number of challenges including understanding that online mode of course delivery is very possible across different subjects and teachers can effect pedagogies changes while combining face-to-face mode of delivery with online choices in post covid era. School and their teachers are faced with challenges of transition to online learning to deliver instruction outside of brick and mortar settings they are more conversant with. Many schools lack adequate technological tools that support this transition. In most

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secondary schools, functional computers are not available let alone internet connectivity and electricity. Technological tools such as screen recording software, video conferencing applications, cloud services and other tools that are needed to communicate with students, design courses and upload or cast contents are lacking in most cases (Hassan, 2021). Teachers who are to work at home are facing a serious challenge of internet subscription and lack of supportive tools to connect to students. Similarly, teachers grappled with problem of lack of adequate training on how to function effectively using the new technologies.

It is pertinent to state that provision of online learning tools is imperative and for teachers to fully utilize them and deliver instruction online, schools must make professional development available to teachers. Funding is critical if the goal of transition to quality online teaching is to be attained.

Students/parent Challenges

School closure due to covid-19 pandemic sent students back to their numerous homes. Some live in far rural areas where internet services and connective technologies are not available while others are city dwellers with access to broadband internet services that allow for online communication, instruction and collaboration. The socio-economic status of parents/students appeared to have posed similar restraint as in urban-rural divides. This has resulted in to digital inequities with some students, by virtue of high socio-economic homes, being of high-tech homes and others, by virtue of low socio-economic homes, being of low-tech homes. To this end, Louise, Miri, Sarah and Mercè (2021) stated that technology used for learning at home varied from low to high tech homes.

Urban-rural and low-tech and high-tech divides appeared to be a major problem to inhibit students from rural and low-tech home from participation in online teaching during and after pandemic. Unless special intervention is made, by schools implementing online teaching, this transition will not be realistic and coherent owing to apparent digital divides. Students often suffer from distraction from domestic affairs, mental health challenges of anxiety, fear, techno-stress courtesy of sudden change (Oyedotum, 2020).

Conclusion

Coronavirus pandemic has created emergency situations that adversely affected all sectors globally. Responses differed across locations and sectors in Nigeria. Education system was completely shut down as the only available and possible measure to avert further spread of Covid-19. Schools were reopened after several months of standstill and disruption of activities amidst fear, anxiety and uncertainty as regard to what could happen to students, teachers and other personnel.

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Application of digital technologies appeared to be viable model for teaching and learning in post Covid era but schools were lacking in technological resources and other infrastructures needed to migrate to online learning. Delivering quality Geography education in post Covid era requires the country to rejig the education system with technology-enabled learning resources/tools that support online instruction as the end to this pandemic is not in sight and the country cannot afford a second wave of school lock down. Teachers that are mostly not trained to work with technology must have their training reimagined with technology to wipe out the fundamental issue of digital divide affecting online learning.

Suggestions

To ensure effective curriculum delivery in Geography, the following suggestions are made:

1. provision of adequate technology-enabled learning tools/resources by federal and state governments as well as private organisations to enable schools' transition to online learning and deliver quality secondary Geography education in post covid-19 era;

2. Both in-service and pre-service Geography teachers be provided with professional development to enable them access and use technologies that support and sustain online learning in times of crisis and beyond.

3. There should be intervention/measure to minimize digital inequities among students in order that all students can have equal opportunities to participate in an online learning.

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