CHAPTER TWELVE

COVID-19 and the Establishment of Open and Flexible Education for the Future

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Abstract
This paper examines COVID- 19 and establishment of open and flexible education for the future. COVID-19 is an infectious disease caused by newly discovered Coronavirus. Most people infected with the COVID-19 Virus experience mild to moderate respiratory illness that can lead to death if care is not taken, devastating social, economic and political crises that will leave deep scars on people, leading to the near-total global closure of institutions of learning. Establishment of open and flexible education for the future become imperative, and providing support services for students and teachers can promote effective learning and personality development, diversifying support for online teaching and learning. Empowering collaboration between Governments, enterprises, and schools together to ensure high-quality learning content, diverse learning activities, and effective learning outcomes. Some possible challenges were outlined in this paper. And conclusion was made that effective teaching and learning through open and flexible education requires the use of appropriate approach and adequate online learning facilities for teachers and student's preparation. Based on the conclusion, the paper recommends among others that Federal Government should provide suitable interactive digital learning resources for teachers and students.

Keywords: Coronavirus Pandemic (COVID-19), Open and flexible education.

Introduction
The Coronavirus disease (COVID-19) has affected educational systems worldwide, leading to the near-total global closure of institutions of learning. Countries across the world are returning to the drawing board to develop strategies to rescue their education sector which is being damaged by the deadly virus. Virtually all institutions of learning have been ordered to be temporarily shut as part of plans to curtail the spread of COVID19 pandemic. According to statistics from UNICEF, approximately 1.725 billion learners are currently affected by schools' closures in response to the pandemic. Statistics further

reveal that one hundred and eighty-six countries are currently implementing nationwide closures, impacting about ninety-eight percent of the world's student's population (UNESCO, 2020). The statistics is scary and the consequences are severe, the numbers are enormous. Never before have so many children and youths been out of school at the same time. As COVID-19 continue spreading in many countries of the world, how to keep learning undisruption has become necessary to the global education community as stated by UNESCO (2020). At present, according to the development of the emergency situation of Coronavirus pandemic (COVID-19), several countries have established various online learning strategies for teaching and learning in their education systems, of which open and flexible education is one of the main approaches. Open and flexible education, is a subset of distance education. It has always been concerned with providing access to educational experiences that are at least more flexible in time and in space than campus-based education by utilizing different types of technologies. Open and flexible learning and teaching has a long history (Huang, Liu, Tlili, Yang, & Wang, 2020). First, "flexibility" refers to offering choices in the educational environment, as well as customizing a given course to meet the needs of individual learners.

Therefore, providing the possibility of making learning choices to learners are crucial. These learning choices can cover class times, course content, instructional approach, learning resources and location, technology use, the requirements for entry/completion dates, and communication medium (Collis, Vingerhoets, & Moonen, 1997; Goode, Willis, Wolf, & Harris, 2007). With the development of information and communication technologies, new learning modes have appeared that can open more opportunities for flexible learning, such as open learning. Open learning aims to make learners more self-determined and independent, while teachers are more or less learning facilitators (Wiki, 2019). Learner-centered philosophy serves as an underpinning theory for this flexibility-dominated educational practices (Lewis & Spenser, 1986; Huang, Liu, Tlili, Yang, & Wang, 2020). In flexible learning environments, barriers that might prevent students from attending a given educational context (e.g., classrooms) are removed. With the further development of technologies, flexible delivery is considered a critical component (Lundin, 1999), which usually empowers learners and instructors to exchange information in a two-way manner. Later, the scope of flexible learning has been further extended beyond the dimension of delivery to cover flexible pedagogy (Ryan & Tilbury, 2013; Ryan & Tilbury 2013; Gardon, 2014). and believed that flexibility is not only an attribute of students, but also a feature of educational strategies at the institution level.

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

Establishment of open and flexible education system for the future would allow students to determine the sections and the sequence of content according to their desire, pathways of learning, forms of course orientation, size and scope of the course through modulization of the content (Collis et al., 1997; Collis, 2004; Casey & Wilson, 2005; Gordon, 2014). During the period of Coronavirus pandemic (COVID-19), the self-inquiry course offered by Guangzhou International Middle School Huangpu ZWIE encouraged students to select the topics based on their personal interests and strength. Students can then create products in the formats they prefer, such as a regular letter, posters, brochures, videos, songs or dances to salute the front-fine heroes who fight against the novel Coronavirus in Wuhan City, China. Formal education has a critical role to play in the development of skills and capabilities for individuals to be productive and engaged citizens in society. Yet mainstream formal education practices alone are no longer sufficient to cater for complex societal demands as individuals frequently alter career directions, seek alternative education access and attempt to balance competing life, work and education (Huang, Liu, Tlili, Yang, & Wang, 2020)

Formal and informal learning opportunities through open, flexible and distance learning (OFDL) models are necessary elements within the broader education system. As such, contemporary educators are increasingly experimenting with open and flexible learning and teaching models and technologies that can create socially engaged and active learning contexts. Further, the integration of diverse educational scenarios could help to inform new learning models and teaching strategies. Educators are acutely aware of the need to re-adjust learning and teaching practices to foster 21st-century capabilities. This process is closely associated with an open, flexible and sustainable space that is no longer simply a physical construct but also includes an online environment that is not only supportive of this new type of learning but also acts as a catalyst for learning. The online learning environment is an important, integrated part of our educational system that enables learners to explore connections between what they have learned and other sources of knowledge and experience. In recent years, broad learning initiatives (e.g., open educational resources, Khan Academy, massive open online courses, as well as micro-credentialing) have offered openness, transparency and flexibility in accessing learning and demonstrating outcomes. These initiatives have vastly extended the opportunities for students to access alternate modes of learning while interacting with peers on a global scale. However, to date much of the research investigating the role, impact and influence

of these learning opportunities has focused more on the practical outcomes (e.g., student grades), in lieu of more theoretical or policy-driven perspectives (e.g., Houlden & Veletsianos, 2019; Selwyn, 2011). The theoretical perspectives bring critical insights and debate regarding the ways online, open, and flexible learning education environments operate to balance an increasingly technology-dominated education context. There is a need to create new conceptual and theoretical frameworks to guide our understanding of the future potential of online and flexible learning contexts to educate young people. There is much to understand about how student learning processes develop and adapt to changing contexts. Similarly, there is much work to undertake in identifying effective, scalable and sustainable approaches to designing and implementing more personalized and contextualized learning support, as well as providing our teachers with relevant and timely data to empower actionable intelligence.

Concept of Open and Flexible Education

Lee and McLoughlin (2010) defined flexible learning as a "set of educational approaches and systems concerned with providing learners with increased choice, convenience, and personalization to suit their needs. In particular, flexible education provides learners with choices about where, when, and how learning occurs, by using a range of technologies to support the teaching and learning process." Open and flexible education are learner-centered educational strategy, which provides choices from the main dimensions of study, such as time and location of learning, resources for teaching and learning, instructional approaches, learning activities, support for teachers and learners. In this way, teaching and learning can be flexible rather than fixed. This can help promote easy, engaged and effective learning. Open and flexible education is an increasingly diverse variety of learning delivery systems. It comprises any form of learning which includes elements of flexibility which make it more accessible to learners than courses traditionally provided in centers of education and training. This flexibility arises variously from the content of course and the way in which it is structured, the place of provision, the mode, the medium or timing of its delivery, the pace at which the learner proceeds, the forms of special support available, and the types of assessment offered (Huang, Liu, Tlili, Yang, & Wang, 2020) . Open and flexible education is seen as the process of delivering knowledge via electronic media, which includes the internet, intranet, satellite broadcast, audio tape, interactive TV and CD-ROM, electronic, board and e-library. Open and flexible Education is a global phenomenon fueled by a variety of economic, technological and social forces, as well as a students' demand. The demands amongst students, employers and

communities for lifelong learning and awareness amongst educators to the need to enhance the quality of traditional learning via greater interactivity, collaboration, access to resource and remote. COVID 19 and   Exchanges are some educational pressures necessitating open and flexible education for the future. According to Anthony (2012) Open and flexible education has been perceived as:

i.   Being convenient and flexible
ii.   Offering a greater access to quality learning resources
iii.   Increasing students motivation and self esteem
iv.   Promoting learner participation and interactivity
v.   Improving learning quality
vi.   Promoting sharing of learning resources and spaces
vii.   Promoting collaborative learning and autonomous learning.

Open and flexible education has the capability of using network technologies to create, foster, deliver and facilitate learning anytime anywhere. It enhances the delivery of individualized, comprehensive dynamic learning content in real time, aiding the development of communities of knowledge, linking learners and practitioners with experts (Laurillard, 2007 cited by Adirika, 2012).

Establishment of open and flexible education for the future is a welcome development in the teaching and learning process. More so, for the program to remain relevant in global challenges, world open and flexible education should be graciously adopted. Ikelegbe (2007) noted that education in Nigeria cannot be relevant without adequate preparation of new generation of learners to effectively use the new information and communication technology in their professional practice. Dabesaki (2005) insisted that establishment of open and flexible education for the future will ensure broad viability and availability of educational opportunities and that learning materials can be accessed irrespective of time and space. Adirika (2012) viewed that teachers and learners' conceptions of educational facilities, process and procedure could be explored to the advantage of improvement purpose at least through open and flexible education.

Concept of Coronavirus Pandemic COVID19
According to World Health Organization (WHO), Coronavirus disease (COVID-19) is an infectious disease caused by newly discovered Coronavirus. Most people infected with the COVID-19 Virus will experience mild to moderate respiratory illness and recover without requiring special treatment. Older people and those with underlying medical

problems like Cardiovascula disease**,** diabetes. chronic respiratory disease and cancer are more likely to develop serious illness.

The Coronavirus Pandemic (COVID-19) is the defining global health crisis of our time and the greatest challenge we have faced since World War II. Since its emergence in Asia late last year, the virus has spread to every Continent except Antarctica. Cases are rising daily in Africa, the America and Europe. Countries are racing to slow the spread of the Virus by testing and treating patients, carrying out contact tracing, limiting travel, quarantining citizens and cancelling large gatherings such as sporting events, concerts and schools. The Pandemic is moving like a wave. It is one that may yet crash on those least able to cope. COVID-19 is much more than a health crisis, by stressing every one in the countries it touches, it has the potential to create devastating social, economic and political crises that will leave deep scars. Dozens of the world's greatest cities are deserted as people stay indoors, either by choice or by Government order. Across the world, shops, theaters, restaurants and bars are closing. Every day, people are losing jobs and income, with no way of knowing when normalcy will return.   The best way to prevent and slow down transmission is by being well informed about the virus, the diseases it causes and how it spreads. Protect yourself and others from infection by washing your hands under running water or using an alcohol-based sanitizer rubbed frequently and not touching your face.

Providing Support Services for Students and Teachers
Learning supports for students
The effectiveness of supportive services for learning is reflected as follows: it can promote the students' effective learning and personality development. Effective learning refers to the growth and improvement of students' knowledge, cognition, intelligence and skills; personality development mainly involves the cultivation of positive attitude towards life, good thinking, basic communication and cooperative skills, the consciousness of rules, integrity, perseverance and innovation (Gordon, 2014).

Technical Services for Teachers
 Online teaching tools are unfamiliar with most of the teachers. This includes online forum, virtual learning environment, learning activity management system, online teaching strategies, and information technology applications, epidemic prevention cases in schools and local teacher training cases, so as to promote the rapid improvement of

teachers' online teaching abilities. The supports for teachers include how to use the synchronous cyber learning software, how to utilize the learning management system and online forum to conduct learning activities (Huang, Liu, Tlili, Yang, & Wang, 2020).

Diversified Supports for Online Teaching and Learning
Effective supports and services are important to ensure the quality of online learning. These services can be for both teachers and learners and based on the collaboration between governments, schools, enterprises and families. Huang, Liu, Tlili, Yang, & Wang (2020) stated that the national cloud classroom provides e-textbooks compiled by the education department. These digital e-textbooks are widely used in various areas and cover all levels of middle schools and high schools. The school can also use the authoring tool embedded in the platform to create a flexible curriculum by using the provided resources on the platform as well as the platform supports online lecturing and interactive tutoring functions. Besides, there might be limitations of the internet access in remote areas, therefore the Ministry of Education requested Nigeria Education Television to broadcast courses and resources through TV channels to meet the needs of students studying at home in these areas.

Empowering the Collaboration between Governments, Enterprises, and Schools for Establishment of Open and Flexible Education for the Future.
Governments, Enterprises, and Schools (G-E-S) can closely collaborate together to ensure high-quality learning content, diverse learning activities, and effective learning outcomes when students learn online. The G-E-S collaboration is designed to have the following features: flexible instructions; self-regulated learning; on-demand selection and respect for differences; open resources, scientific and technological support. The G-E-S collaboration has to be led by the government and organized by schools. The G-E-S collaboration has to involve the family-school interaction and social participation. In the face of the current needs of online education during the epidemic and its future development, the government has to play multiple roles in policy guidance, overall coordination and effective supervision, etc. The government has also coordinated enterprises, schools, research institutes, families, the society, etc. to build smooth communication platforms, select suitable learning resources, provide convenient learning tools, encourage diverse learning methods and support flexible teaching methods. Effective support services for online education will be provided through the close cooperation of multiple parties.

Challenges of Open and Flexible Education for the Future
1. **Challenges of quality learning design and outcomes.**
a) The need to make content and assessment flexible, creative, and appropriate, with both objective and descriptive questions;
b) The integration of pedagogy, technology, and organizational factors;
c) The necessity of a team approach for course design, involving instructional designers, subject matter experts, technology experts, and others;
d) Finding an effective balance between varied levels of individualization; and
e) Designing with principles of learning and engagement tailored for the adult learner.

Institutional and Regulatory Challenges.
a) The need for institutional structures for student support and tutoring;
b) The lack of leadership, policy making, and teacher training for online open and flexible distance learning; and
c) Finding the appropriate level of regulation of online, open, and flexible learning by government agencies.
2. **Lack of funding:** This is clearly identified as the chief barrier to the adoption of online, open, and flexible learning. Lack of funding in terms of a need for supportive legislation, funding, and strategies and insufficient numbers of open and distance learning institutions in a country to fully promote the adoption of open and online learning.
3. **Lack of Support for Faculty Adoption and Training:** This includes the lack of understanding on the part of senior management of the degree of staff development required. In addition, a lack of support at both governmental and institutional levels for collaboration in the development of new models for learning hampers the integration of online learning.
4. **Lack of Technology and other Infrastructure and the Lack of Senior Management Commitment/Institutional Resistance:** are related issues. For example many of the structural institutional configurations result in all workload and costing models being based on a lecture-based means of education – ignoring the unique needs and contributions of online learning. To be effective, online learning requires a cultural transformation in an institution guided by a coherent

implementation plan, bringing in cooperative and collaborative models of course design, development, and delivery.

Conclusion

The fact remains that effective teaching and learning through open and flexible education requires the use of appropriate approach and adequate online learning facilities in teacher and student preparation. Providing the possibility of making learning choices to learners is crucial. School closures in many countries worldwide during the spread of Covid –19 made more learners being excluded from the learning process. However, facilitating the establishment of open and flexible education for the future remains the catalyst for reforming teaching and learning process in a time like this.

Suggestions

1. Federal Government should provide suitable interactive digital learning resources, such as online video micro-courses, e-books, simulations, animations, quizzes, and games.

2. Learners should be guided by the teachers to apply effective learning methods that can be used individually or in groups.

3. The online instructional practice should involve using online communications, via social networks, to ensure regular human interactions and to address potential online challenges, such as learners' perceived loneliness or helplessness.

4. Federal Government should provide instant support services for students and teachers on learning about using effective learning technologies, tools, and resources and collaborating between the government, schools, enterprises, families, society, etc.

5. Federal Government and school authorities should ensure reliable network infrastructure

6. School authorities should ensure Collaboration between Governments, Enterprises, and Schools to facilitate open and flexible education for the future**.**

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