CHAPTER SIXTEEN

Establishing and Sustaining Effective Higher Education Delivery in Nigeria in the Physical Distancing Era

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Abstract
In the era of COVID- 19, social distancing has become the new normal. This emerging trend has changed the landscape of educational services globally. There has to be a paradigm shift in Nigeria as in other parts of the world in the mode of educational delivery. But the effectiveness of the educational delivery has to be paramount so as not to widen the educational divide among institutions, nations and continents. The chapter looks at the online modes in educational delivery which the Nigeria Higher Education institutions, teachers and students will need to adopt in this era of physical distancing; and the strategies required to ensure effectiveness in line with global best practices and standards. It is concluded that instituting and maintaining effectiveness in online delivery modes in Nigeria will require not only building lecturers capacities in online delivery but also the lectures strict compliance to prescribed pedagogical principles and practices in the employment of the online delivery mode; also a reorientation of the lecturers' and students to the nature of teaching and learning in the online environments and the new roles and connections that will exist. It is recommended among others that, for effectiveness in online delivery, institutions should introduce sustainable capacity building programmes and international, regional and national collaboration on evidence based best practices and research.

Key words: Effectiveness, online delivery, Higher Education, physical distancing, COVID-19

Introduction
The COVID-19 pandemic has the educational systems, as well as other sectors embracing a "new normal", physical distancing. The new paradigm is learning and teaching at a distance. The new normal of physical distancing has led to a rather abrupt transformation of the educational landscape worldwide, Higher Education (HE) inclusive. HE institutions are engaging in educational delivery modes that do not violate the global new normal of physical distancing. Infrastructures are being put in place in many educational institutions to ensure most teaching and learning activities are conducted online or virtually. Thus the

new model in educational delivery has become the online, blended or remote teaching and learning models (Bello, 2020 and UNESCO, 2020). These are being embraced as the new face of educational delivery. Tamrat and Teferra (2020) has identified online mode as an alternative form of educational delivery to fight against the COVID -19 pandemic. After the pandemic era infrastructures acquired will not be dismantled in order to return to the old ways of face to face or onsite teaching and learning. It is evident that online teaching and learning, a consequence of a pandemic era has become the new global normal.

Most western HE institutions who were implementing the online approach to education are now willing to gradually evolve to full online delivery. Others who were on full onsite instructional delivery are now looking towards combining the two in a blended mode (Shepherd 2020). For Africa and Nigeria, HE's it will be an intricate transition. Many African and Nigerian universities do not have the infrastructure for these mode of delivery except for those who were on Distance Education. Neither are the lecturers skilled for online delivery. There are also the challenges of poor Internet access and cost implications to lecturers and students, quality assurance and more (Aryeetey, 2020; Atayaro, 2020; Bello, 2020; Igwe, 2020; Mohamedbhai, 2020; Okebukola, 2020).

However, the positive effect of the pandemic on the Nigeria educational system is that it will give faculty and institutions the opportunity to build pedagogical capacities, improve on staff ICT skills and infrastructure (Aryeetey, 2020 and Tamrat, &Teferra, 2020). Although the transition to online or hybrid online deliveries will be gradual due to inherent and identified challenges (Igwe, 2020).Stake holders and educationist have recommended (Perris & Mohee ,2020; Atayero ,2020) that Nigeria tertiary education system braces up to immediately commence Emergency Remote Teaching mode or remote teaching (Yusuf 2020), blended learning (Perris & Mohee, 2020; Ayatero, 2020; Bello, 2020) and online modes of delivery (Okebukola, 2020) in line with the prevalence globally and start to address the challenges of effectiveness in the adoption of these modes. Paying attention to effectiveness would alleviate concerns of widening existing educational divides among, institutions and nations (Mohee & Perris, 2020; Mohamedbhai, 2020).

The author explores the digital modes of educational delivery and accompanying technologies that should be featuring in Nigeria Higher Education during and after the pandemic, effectiveness can be ensured in the utilization of theses modes in compliance with global best practices and standards.

Theoretical Framework for Effectiveness in Online Delivery
The online learning environment is supported by the constructivist theories of Situated Learning and the emerging theory of Communal or Social Constructivism in that, in these learning environments the leaner is an active participant in learning while the instructor

serves as a coach or facilitator or mentor (knowlton, 2003). Several other learning theories are being applied to online instruction and blended learning. However, a number of theories are derived from the major learning theories (Picciano, 2017). These theories and models apply the fundamental principles of the traditional learning theories to prescribe the conditions for the implementation of effective online, blended or remote learning environments.

Online Collaborative Learning (OCL)

This is derived from the social constructivism as its major assumption is that students should collaboratively solve problems through discourse and the teacher plays the role of a facilitator as well as a learning community member.

The theory proposed by Harasim (2012 cited in Picciano, 2017) focuses in the facilities of the internet to provide learning environments that foster collaboration and knowledge building. There are three phases of knowledge construction through discourse in a group, namely;

1) *Idea Generating: The brainstorming phase where divergent thoughts are gathered.*
2) *Idea Organizing: The phase where ideas compared, analyzed and categorized through discussion and argument.*
3) *Intellectual Convergence: the phase where intellectual synthesis and consensus occurs including agreeing to disagree, usually through assignment, essay or joint piece of work* (Harasim,2012 p 82 cited in Picciano 2017: 7)

The theory is best suited for small instructional environment.

Connectivism.

This theory is a learning model that acknowledges major shifts in the way knowledge and information flows, grows and changes because of vast data communications. The main proponent of this theory was Siemers, (2004 cited in Piccaino, 2017). According to the theory, interaction has moved learning from internal, individualized activities to group, community and crowd activities. Siemens (2004 cited in Picciano 2017) proposed eight principles of connectivism.

1) *Learning and knowledge rests in diversity of opinions.*
2) *Learning is a process of connecting specialized nodes or information sources.*
3) *Learning may reside in non-human appliances.*
4) *Capacity to know more is more critical than what is currently known.*
5) *Nurturing and maintaining connections is needed to facilitate continual learning.*
6) *Ability to see connections between feeds, ideas, and concepts is a core skill.*
7) *Accurate, up to date knowledge is the intent of all connectivist learning activities.*

8) *Decision making is itself a learning process choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality*. (Picciano 2017:175).

Connectivism is appropriate for very high enrollment courses where the emphasis of the learning goals or objectives is knowledge development and creation and not dissemination of knowledge. (Picciano, 2017).

Community of Inquiry (COI)

The community of inquiry model for online learning environments was developed by Anderson and Archer (2000 cited in Picciaano 2007). It is based on the concept of three distinct "presence"; Cognitive, Social and Teaching. The theory recognizes an over lapping relationship between the three and notes that 'presence' is a social phenomenon that manifests through interactions among students and instructors. This model has become one of the more popular models for online and blended courses that are designed to be highly interactive among students and lecturers, using discussions boards, blogs, wikis and video conferencing (Picciano, 2017). Community of Inquiry (COI) model describes how learning occurs for a group of individual learners through the educational experience that occurs at the intersection of Social, Cognitive and Teaching presence (Garrison, Anderson & Archer 2000 cited in Bektashi, 2018).

Social Presence; is the ability of participants to identify with the community, communicate purposefully in a trusting environment and develop interpersonal relationships by way of protecting their individual relationships. When students create profiles and upload biography that can be viewed by other students and the teachers in a learning management system or use discussion forums, this supports social presence

Cognitive Presence: is the extent to which learners are able to construct and confirm meaning through sustained reflection on personally meaningful and educationally worthwhile learning outcomes. Cognitive presence is effected when learning activities provide a focal point and tasks for meaningful student interaction and encourage the students to be active learners, not more receptacles to learning content (Anderson, 2018). Here COI builds on its constructivist roots.

Teaching Presence: is the design, facilitation and direction of Cognitive and Social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes (Garrison, 1999 cited in Bektashi, 2018). A teacher should provide opportunities and incentives for students to test and apply knowledge beyond the sheltered context of formal education (Anderson, 2017). A key component of teaching presence is setting and managing both individual and collaborative learning activities. Teachers uploading lessons, instructions, video and activities into the LMS they make possible their

teaching presence (Bektashi 2018). Some internet technology that support Social, Cognitive and Teaching presence include WWeb Ex training, Screencast-o-Matic online video maker and many others.

The COI model is applied in online learning environments via the integration of technology through use of specific applications, to making use of digital space for course materials and offering fully online courses via course management systems. (Wright, Marsh & Muller cited in Bektashi, 2018). The continuing popularity of the model through different technologies, shows that group based learning is still highly valued and is a common way for young people to engage in formal and informal learning (Anderson, 2018).

In Summary, the theories on online delivery reviewed have revealed the need for the following as salient features in an effective high quality online or blended learning environment:

1. Student engagement

2. Active learning
3. Student collaboration
4. Instructor, students and group interaction (social interaction)
5. Information exchange (knowledge creation)
6. Authentic activities/real life application
7. Problem solving (real world/realistic challenges)

These should be the guiding principles for engaging in an effective online, blended or remote teaching and learning modes and the integration of technologies by Nigeria lecturers and higher Institutions.

Teaching and Learning Modes for the Physical Distancing Era in Nigeria
The Full Online Delivery
The full online delivery mode implies that the entire delivery is 100% online. Simply put online learning is learning over the Internet. It is the intercept of eLearning, distance learning, remote learning and digital learning (Yusuf, 2020). This implying that online learning embodies all of these other learning modes. It can also be described as learning experience in synchronous or asynchronous environments using different devices (e.g android phones, tablets, laptops) which have internet access. Using these devices students learn and interact with instructors and other students from anywhere (Singh &Thurman, 2019 cited in Zhu & Lui, 2020).Yusuf, 2020 identified the salient features of an online learning as being: structured and well planned, learner centered, nonlinear in that it enables diverse techniques; uses multimedia and has an established ecosystem, that is, a support group which includes; instructional designers, technician, counsellors.

Effective of Online Delivery

The online teaching and learning are a well-structured mode of educational delivery. Its effective implementation will require the combined efforts of the host institution, IT experts, instructional designers, the faculty and students (Yusuf, 2020). This implies that capacities of various categories of staff and possibly students will have to be developed before the successful implementation of online delivery. The effective implementation of the online delivery mode requires that members of the institution executes their role explicitly and judiciously. The institution must ensure that there is internet access and stable power supply, that instructors and students and the technical support understand their roles through organization of workshops and training for them. The instructors require appropriate skills to handle online delivery. Atayero (2020) identified the following as among the skills lecturers must possess to effectively handle online delivery; instructor skill, course design skill, organizational skill, time management skill, online communication skill, ability to foster collaboration. The students should exhibit readiness, be equipped with the necessary tools for online learning. Yusuf (2020) listed the roles of the students in an online learning environment as: to read, watch and listen; to complete problems or provide answers to questions; to collaborate with peers; and to provide feedback. Another important aspect of effective online delivery is the extent of and efficient integration of technologies. The major technological tool generally used for online delivery is the Learning Management System.

The Learning Management Systems (LMS)

Learning management systems is the ideal application for online teaching and training especially in the era of social/physical distancing due to the COVID-19 pandemic .A learning management system is a software application for the administration documentation, tracking, reporting and delivery of educational courses, training programs or learning and development programmes (ELearning Industry , 2020).

The benefits of the LMS in this era of social/physical distancing not only lies in its ability to facilitate learning from a distance (online) it also:

1. Enables the tutor and learner to access online courses beyond geographical limitations. Students can participate in the desired course and materials from any location and easily, just as simply as logging into the system.

2. It helps for effective online resources allocation and assessment of learner performance and course effectiveness.

3. It has the ability to monitor users' progress and performance.

4. It enables effective tracking of learner engagement to eLearning assessment result through graphs and charts. This enables report generation and provide social learning capacities.

5. Enables data generation in one location and privacy of information.(Techtarget, 2019)

Effectiveness of the LMS

The LMS is needed and used by organizations who want to enhance training or by educational institutions that need to start eLearning or want to use it to complement classroom learning (blended learning).The learning management systems can bring about effective teaching and learning a study (Mtebe, 2015) has shown them to be robust in incorporating global best practices such as student interaction, collaboration and high levels of student engagement. LMS vendors host online discussions that enables users to connect with one another. Others have built in gamefication features that can be used to engage, motivate, increase retention (Nwosu, 2019) and improve learning as they interact and complete with each other. The presence of social media tools also help track online discussion participation. The LMS can help learners acquire more skills and gain problem solving abilities. Many LMSs make assessment easy with inbuilt assessment templates and performance tracking tools.

The LMS can be used to create both personalized learning and social learning experience for the learner and make teaching less stressful. Social learning experience is cooperated into LMSs through the inclusion of social media sites such as YouTube within their platforms. This enables peer interaction collaboration, and sharing of learning experience (Linder, 2017, Techtarget, 2019).

The LMSs are ideal for educational institutions in Nigeria who may not be able to provide a complete online/eLearning instruction. It can be used to provide the blended learning experience (combination of traditional classroom teaching and online learning tools). This method is more effective than the traditional face to face method as it enriches the classroom-based experience with additional digital content that can be customized to fit specific learning needs. (Mtebe, 2015).

Popular LMSs used by educational institutions are Moodle, and Blackboard. Some also use Schoology, Canvas and Desire2Learn.

 Although Mtebe (2015) has shown an increase in the adoption of LMSs in recent years by Sub-Sahara Africa Universities, the level of actual usage of the LMS among the faculty has been generally low. Those that do use the LSM in the universities use it as electronic repository for uploading course information. Most faculty members that use the LSM actively do not utilize the features of the LSM that make it effective in standard educational

delivery such as the discussion forums, chat, e-mail. Even after being trained faculty members do not utilize the LSM (Mtebe, 2015). These factors undermine the achievement of goals for setting up the LMS in these institutions and could hamper the effectiveness of online delivery in Nigeria, if Nigeria faculty follow suite. With the advent of social distancing the LMS will become a major tool for educational delivery and will be part of the new normal in Higher Education, thus Nigeria Higher institutions, faculty and students are now compelled to utilize it effectively.

The effectiveness and success of LMS in Nigerian universities can be improved through the under listed strategies:

1. Conducting usability evaluations to determine the factors that may hinder the faculty and students from using the LMS and fixing these usability problems.

2. Institutions should develop and upload quality learning material into the LMS to maximize and enhance its effectiveness and usage. This can be done by equipping faculty with skills to develop these materials or by use of open Educational Resources (OER) from repositories.

3. Institutions should establish Information Technology (IT) Units and Faculty Development Units that will provide support services for students and continuous online teaching skill development and support for faculty members.

4. Institution should increase staff and students' awareness of the existence or establishment of LMS within the institution. This can be done through bulk text messages, brochures, flyers, departmental workshops by IT or staff development units.

5. The LMS of integrated and accessed via mobile devices will be more receptive to users. This should be considered by institutions setting up LMS.

6. Finally making use of the social media services to complement LMS features can increase LMS effectiveness and usage. (Mtebe, 2015, Dobre, 2015).

The Blended Delivery Mode

The Blended learning mode comprises the replacement of part of face-to-face time with online engagement (Linder, 2017). It can also be defined as "courses that integrate online with traditional face to face activities in a planned, pedagogically valuable manner" (Picciano 2009:8 cited in Linder 2017). Over fifty percent of institutions of higher learning globally will be adopting the Blended learning delivery mode due to COVID-19 pandemic (Shepherd, 2020). Many of these institutions have chosen blended because they cannot go fully online due to Science courses that require face-to-face delivery for practical sessions. Blended modality does not just involve the random inclusion of online components into face-to-face instruction. Rather it requires intentional design components to ensure a well-structured learning environment (Linder, 2020).

Effectiveness of Blended Delivery

As many Nigeria Higher Education institutions gear up to implement the blended modalities, effectiveness becomes the watch word. The following comprise the essential components of an effective blended learning environment:

1. Instructors intentionally choose technologies that support the course learning objectives;

2. Instructors should purposely align face- to – face online components for effective student learning; and

3. Instructors should deliberately embed active learning techniques and methodologies in the blended course (Picciano, 2009, and Glazer 2012 cited in Linder, 2017).

Although many African and Nigeria Higher Education institutions have been implementing blended and online learning in order to increase access and improve learning most would have never intended to phase out face to face delivery completely (Mohamedbhai, 2020). However, the pandemic has brought a transformation in educational delivery which may eventually phase out face to face mode of delivery.

The Learning Management System is also a vital tool for hosting the online component in blended learning environments. LMSs come with a variety of tools to help instructors organize their course contents and also assess students' learning.

Effective teaching in a blended course require the instructor to design from the onset the aspects and activities in the course that would be face- to- face and online. Several other tools can be used effectively in a blended classroom. Among these are mobile devices (BOYD) which the students already have. When chosen and implemented thoughtfully mobile devices and Apps can foster student engagement and offer unique learning and assessment opportunities. Social media platforms like twitter, Instagram and You Tube can also be integrated in the blended class room. They not only create a social presence they also foster student engagement, interest and improve communication (Linder, 2017).

The Remote Mode

Most Private institutions have who didn't have online learning infrastructure have adopted for the remote teaching and learning approach since the onset of the pandemic. Yusuf (2020) describe the remote teaching or Emergency Remote Teaching (ERT) as a temporary and complementary mode of delivery; it enables students to have access to education in far remote places. States and institutions that have not done so are being advised to commence remote teaching and learning. The investments made in remote teaching and learning should be able to mitigate the immediate disruption caused by the COVID-19 pandemic

and establish approaches to develop more open and flexible education systems for the future (UNESCO, 2020).

Effectiveness of the Remote Delivery Mode
Remote teaching and learning is a less structured approach. It is derived by an emergency situation. The media to be used and the form the modalities will take will largely depend on what the instructor and the students can access and use conveniently. Yusuf (2020) recommends the following as modalities that should be considered for effective implementation of remote delivery:
1. Get professional advice and help before starting;
2. Prepare and master the technology;
3. Move what you have online (lecture notes discussions, assignments);
4. Use introductory video to show your face and introduce your topic and content;
5. Record lectures, don't stream;
6. Try to mix media- videos, PPT, Textual, Podcast, etc.

Oyenira, Onyeniran, ,Oyeniyi, ,Ogundele, & Ojo (2020) proposes that institutions structure the remote learning by setting up an eLearning zone where lecturers upload course ware and lecture notes and interact with students while students in turn access the eLearning zone to attend classes as scheduled by lecturers or as directed by the school management . Lecturers and students can then use free open resource platforms for the delivery, such as Google classroom, Zoom, WhatsApp, Facebook, Blog and email.

Conclusion
Instilling and sustaining effectiveness in online delivery in Nigeria will not only require building capacities of lecturers, students and support staff in the employment of online delivery and integration of technologies. The lecturers must also exhibit strict compliance with pre-existing pedagogical principles derived from the learning theories and to the student- centered teaching and learning paradigm through the inculcation of philosophically proven global best practices into the delivery process. Furthermore, Higher Education teachers and students will need to be re –oriented in the new nature of teaching and learning in the online environment and the new roles they will play as communities of learning and connections that are inherent in the mode.

Suggestions
The following suggestions are made based on the above discussions.
1. There is need for the immediate establishment of sustainable capacity building programmes at Federal, State and institutional levels for all category of participants in the online educational delivery; teachers, students' and support staff. Including establishment of Professional Development Centers/ units in HE institutions in

Nigeria with instructional designers and technical support staff for continuous updating of online pedagogical skills of faculty in line with global trends

2 International, regional and national collaboration among Higher Education institutions on evidence based best practices and research on educational delivery modes should be encouraged and perused by HE institutions.

3 Introduction of special research grants on diversification of educational delivery in the pandemic and post pandemic era.

4 Communal decisions on modalities in implementation of the online modes - institutions and staff should decide on the mode and tools that would work best for them.

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