

PIVOTAL ISSUES IN
HIGHER
EDUCATION
DEVELOPMENT
IN NIGERIA

Essays in Honour of Distinguished
PROFESSOR PETER OKEBUKOLA, OFR

Editors

Sola Akinrinade | Siyan Oyeweso | Samuel G. Odewumi | Anthony Kola-Olusanya

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Back to the Future: Zooming Higher Education to the Next Level

Abdalla Uba Adamu

Introduction

First, let me explain the title. *Back to the Future* is a franchise of three American films (starting in 1985) in which the storyline kept moving from the present, the past, and the future, through the antics of the archetypal eccentric “mad scientist” (played by Christopher Lloyd) who discovered a way to make a sedan travel through time. By appropriating this title, as a media researcher, I acknowledge the power of technology to combine our *Days of Future Past*, another title appropriated from X-Men franchise (2014). In other words, the past and the future are intertwined, for the past lead to the future, and the future is a reflection of the past. Zooming is clearly obvious, not just linguistically as an aspect of amplification, but with the COVID-19 pandemic lockdown of 2020, it became the most accessible distance teaching platform, connecting tutors, students, colleagues, virtually from the imposed social distancing spaces of their individual personal spaces. This chapter traces the fundamental problems of education in Nigeria, not in terms of infrastructural decay or lack of political will, the main culprits, but from the foundations of the philosophy of education and the assumptions implicit in these assumptions. I argue that it is the failure of these assumptions that forces us to deal with a new generation of learners that by 2020 do not know what a Blackboard or chalk, are. The chapter therefore deals with Virtual delivery of higher education, particularly at a distance, since technology has now become a commodity and has opened access to quality education for all. It is not unmindful, and will address the issues, of the challenges of measurement of success in the process of virtual delivery of education, but argues that such mode of learning is come to define a New Normal in a world increasingly reliant on technology.

Digging out the Roots

The most memorable aspect of the Nigerian education system is that it had never been Nigerian in conceptualization. It is a hodgepodge of foreign influences rooted in the belief that these influences are superior because they originated from what we assumed to be superior sources. Colonized by the British from at least 1851 when Lagos was invaded by the British army, to 1960 when the British relinquished administrative control of the territory they named “Nigeria”, the education system in the country had toed the British line and created three tracks of schooling: grammar education (for those considered “bright” enough to continue their education to higher than secondary school), technical education (euphemistically for those with clever and creative minds, but really for those not clever enough to move to universities) and teacher education (in some parts of the country this was for those who were huge enough to frighten children and therefore destined to become teachers). In practice, it was a net classification system that negotiated social status that reflected the society – grammar school for elitist children, while the rest of the schooling system for the “others”, no matter who they are, so long as they are not elitist. This was demonstrated by the low status given to the Yaba College, established in 1932 (Fafunwa 1974) and later in 1947 as Yaba Higher College, and offered only diplomas in vocational and commercial subjects ‘that were inferior to British awards ensuring that Africans would remain “permanently subordinate” to Europeans’ (Bush 1999, 120). This perhaps accounts for the low-status given to education at Yaba College.

Nigerians wanted “proper” education that would equate them with Europeans, and this was only available at Fourah Bay College in Sierra Leone, established in 1827 by the Church Missionary Society (CMS). It became a degree awarding institution in 1876 in affiliation with Durham University, UK, which enabled students at the College to acquire the same curriculum as those in Durham – giving them a prestigious British degree. Teaching subjects like Latin, Greek, Hebrew, Arabic, History, Natural Science, French and German (no African languages, except Arabic which is contentiously African), it became the ‘Athens of West Africa’ (Paracka, 2003) in its attempt to portray itself as Plato’s Academy based in Athens, Greece from 387 to 529 BC – which was not really a college or university but a gathering point for intellectuals and their teachers – so would be classified as a college – although a lot of teaching in philosophy, natural science, astronomy, dialectics, and politics, mathematics and astronomy (Fourah Bay adroitly omitted Astronomy teaching, since it initially prepared down-to-earth Missionaries) took place; thus the metaphoric use of ‘Athens of Africa’ to indicate the breeding ground for African intellectuals for Fourah Bay College. Ironically, the term “Academy” had no academic connotation originally. It was simply the domesticated form of *Academus* (or *Hecademus*), an Attic hero in Greek Mythology after whom the garden where the Academy was located was named.

It was indeed a breeding ground, for it produced people like Bishop Samuel Ajayi Crowther (1809-1891), the first African Bishop of the Anglican Church, J.E. Casely Hayford, an early advocate of education and self-rule for West Africans, and Henry Rawlingson Carr (1863-1945), a prominent Nigerian educator and administrator. With its British degree, it became a magnet for especially elite Africans who can afford to send their offspring to get what could be deemed “proper education” rather than the virtually fanatical “technical” education at sub-degree level the British colonial administration wanted to impose on Africans, either to keep them in perpetual bondage, or because they do not believe Africans were capable of attaining a university degree. If the latter were to be the case, Fourah Bay College would have been a validation experiment.

Early Antecedents of Computer-Based Training

The use of computers in education started in the 1960s mainly in the United States. With the advent of convenient personal computers in the 1970s made available by various companies such as Atari, Commodore, BBC, Sinclair, computers were no longer alien machines requiring sophisticated training. By 1980s when IBM created an open architecture model of what was to become Personal Computer, companies like Compaq, Dell, CompuAdd, Gateway, etc. had started liberally cloning the IBM PC, making the personal computer more easily available even though extremely expensive. This market liberalization, premised on IBM’s assumption that “real” computing takes place only in the workplace, and would not be possible in personal spaces, created the perfect tinderbox that lit the fires of yearning for using computers in education on a mass level.

Computer-based instruction borrowed its antecedents from programmed learning. In the original concept, programmed learning was an educational technique characterized by self-paced, self-administered instruction presented in logical sequence and with much repetition of concepts. This was mainly in the domain of psychology, rather than curriculum studies. The focus, therefore, was on *how* the learner acquired their knowledge, rather than *what* they learnt.

The theoretical bases for programming learning were provided by major interrogators of learning such as B.F. Skinner (1937) and J.A. McGech (1942), who maintained in the 1930s and 1940s that preoccupation with theory was misguided. For them the learning approach simply was to discover the conditions that produce and control learned behaviour. Beyond this, their interests diverged. Skinner studied instrumental conditioning (operant conditioning, as he called it) among rats; McGech specialized in human rote memory.

Although the study of rote verbal learning had become heavily theoretical by the 1970s, Skinner and his associates stuck to their empirical beliefs, guiding a variety of programs for the practical control of behaviour. Indeed, Skinner's theory was challenged by J. Konorski and S. Miller in 1937, and in the same year he replied to their criticisms (Skinner 1937). Programmed learning became based on the theory that learning in many areas is best accomplished by small, incremental steps with immediate reinforcement, or reward, for the learner. It is from these roots that a more polished concept of Computer-Assisted Instruction (CAI) came into being. As indeed Skinner (1954) further elaborated:

Some promising advances have recently been made in the field of learning. Special techniques have been designed to arrange what are called contingencies of reinforcement – the relations which prevail between behavior on the one hand and the consequences of that behavior on the other – with the result that a much more effective control of behavior has been achieved (Skinner 1954, p. 86)

While the early mainframe computers were seen purely in the realm of computational mathematics, the arrival of clones and the millions of programs – precipitating “Open Source” with the development of early Shareware freely distributed programs – that accompanied them from both amateur programmers to professionals further domesticated computer-assisted learning.

Such “promising advances” were to manifest themselves in what Skinner consistently believed to be a more appropriate packaging of the curriculum, although his referent, technology, was at that time too sophisticated to move from elite to mass education. Thus the theory of B.F. Skinner is based upon the idea that learning is a function of change in overt behaviour. With the availability of PC clones, the picture suddenly changed. Without knowing it, educationists started implementing Skinner's operant conditioning processes, and paying more attention to how learning is integrated in the learner's mind, rather than what was being learnt. Thus when computers became commodities, not some exotic alien machines, the idea of using them as teaching aids became manifested variously as Computer-Based Training (CBT) or Computer-Aided Instruction (CAI). For the most part, they became applicable to predominantly urban clusters in few elite private schools.

There were two broad ways of looking at the use of a computer in education in the early stages in the 1980s. First, the computer was seen as a powerful tool of educational administration, spearheading the early, crude, but effective Learning Management System (LMS). In this perspective, various computer programs were then available that made the everyday process of running a school quite easy. For instance, there were programs that could make scheduling of timetables and individual class lessons in a whole school quite easy. Class attendance lists and examination grades could

also be easily maintained. Using even simple spreadsheets, examination marks, and eventually grades were easily computed for each student in a classroom. Reports were therefore easily printed. At that crude early stage the computers were not full LMS systems, but replacements for clunky and clumsy Olympia and Olivetti typewriters. The current LMS systems take into consideration the fact that the school is the child's *loco parentis* (they were legally responsible for the students once within their walls) and therefore include variables such as wellness of the child, rather than examination scheduling alone.

Second, the computers were used as an extension, but not a replacement, of both the teacher and the Blackboard. In this perspective, standard topics covered by either the syllabus or the curriculum were encoded in various computer programs in a self-instructional mode which made it easy for the student to use with minimal assistance from the teacher (early form of asynchronous models). In this way, many learning concepts covering a huge variety of topics were catered for, both in humanities and sciences. The problem with this approach was the difficulty of acquiring such programs as ultimately they were overseas-based and had to be purchased in hard currency. The applications of computers in school administration are broadly similar to those in commercial and business work, as well as in mainstream computing. Ideally the programs required should be prepared by experienced teachers who also have good theoretical and practical knowledge of commercial computing. Such people are rare, particularly among senior teaching staff with experience of administration. Even many degree courses in computing provide little knowledge of commercial applications.

Thus, basically, CAI is a program of instructional material presented by means of a computer or computer systems. Analysing the nature and processes of learning, it is quite easy to see why CAI can easily become a viable option for many categories of teachers and learners.

Teaching, to differing levels of ability, background and interests, has posed an eternal dilemma to educators. Instruction that is appropriate and beneficial for one student may have a negative effect on another. Teachers with a classroom of children know it is impractical to try to tailor lessons to each student. Personal attention, however, would be immensely helpful because of the varied needs of pupils. Some students require additional explanations while others have grasped the material and are ready to go on. Since having private instructors to cater for the entire school population across the country is impossible, compromises are necessary and teaching usually progresses at the average level of the class. Poorer students are left hanging in their confusion, and the brightest students miss exciting challenges. With computers as tutors, the learning of one individual will never be hindered by the abilities or

weaknesses of others. Each student will move at his or her own pace, unaffected by the rate of learning of any other student. This confirms Skinnerian psychology of operant conditioning learning.

With individualized computer instruction, students can always immediately request help if something is unclear. They can continue to show their lack of understanding until the problem is resolved without fear of appearing dumb before their peers. After the request for help, the computer can help pinpoint where the flaw lies. Then it can explain again the precise part of the lesson that bears on the student's weakness. Sometimes the computer may find a different explanation in its memory and present the material to the student in another way. Computers can always go back as far as necessary to ensure the student has a solid foundation on which to build.

Thus building a competent Computer-Assisted Learning system requires a series of competencies that would ensure a synergy between the curriculum content, its objectives and the learning outcomes. In the planning of the curriculum, especially with computer assistance in mind, only two approaches are defined: content driven, and course driven.

In content approach, the focus is on domain of knowledge. Again, in this, the universal constant is Bloom's Taxonomy of Educational Objectives (Bloom 1956). There are three taxonomies. There are knowledge-based goals, skills-based goals, and affective goals (affective: values, attitudes, and interests); accordingly, there is a taxonomy for each, creating six levels. Within each taxonomy, levels of expertise are listed in order of increasing complexity. Measurable student outcomes that require the higher levels of expertise will require more sophisticated classroom assessment techniques. A series of field encounters in implementing this taxonomy led to a revision that eventually created a rephrasing of the original six levels of taxonomy (Bloom *et al.*, 2001): Remember (Knowledge), Understand (Comprehension), Apply (Application), Analyze (Analysis), Evaluate (Evaluation), and Create (Synthesis).

In the course-driven approach, which requires an instructional designer, the curriculum construction begins with a course already in the designer's mind; a bit like an architectural drawing of a dwelling. As they are further refined, the objectives are being sharpened which will determine the outcome of the activity.

These two main activities, in an online situation, are best achieved through the development of the Virtual Learning Environment (VLE), a system for delivering learning materials to students via the web. These systems include assessment, student tracking, collaboration and communication tools. They can be accessed both on and off-campus, meaning that they can support students' learning outside the lecture hall 24/7. This enables institutions to teach not only traditional full-time

students but also those who cannot regularly visit the campus due to geographic or time restrictions. Moodle is one of the most commonly used VLE systems in the world, with a lot of user base in Africa. I will trace how we got to VLE by looking at the involvement of computers in education.

Computers for Africa and CAI

With the belief that Skinner's operant conditioning was encapsulated very well in computer programs, policymakers and advocates of machine-programmed learning faced the massive problem of lack of such computers for every child in not only Nigeria but also the entire African continent. The truth is that while programmed learning was a quantum leap in the psychology of learning, it nevertheless remained a high-hanging fruit for millions of poor children in rural schools that were struggling to survive with decaying infrastructure – schools without electricity to begin with, which was needed to power the computers.

Despite these limitations – rural and difficult to access, poor support infrastructures for sustainability, lack of vital electricity – many non-governmental organizations (NGOs) in the rich countries of northern Europe and the United States started to form consortiums to donate recycled, abandoned and old computers to African schools on the principle that “half-a-bread is better than none”, since, clearly, the governments in African countries were more preoccupied with the task of, often dubious, governance that was self-serving (see, for instance, Akak as early as 1953 even before independence, Timamy, 2005; Yusha'u, 2019; Amundsen, 2019). In the meantime, in April 2000, more than 1,100 participants from 164 countries gathered in Dakar, Senegal, for the *World Education Forum*. The participants, ranging from teachers to prime ministers, academics to policymakers, non-governmental bodies to the heads of major international organizations, adopted the Dakar Framework for Action, *Education for All: Meeting Our Collective Commitments* and agreed upon six wide-ranging education goals to be met by 2015. Lack of political will powered by endemic corruption against the backdrop of clear implementation and sustainable strategies ensured 2015 came and passed without any concrete achievements that could be attributed to EFA. International agencies pledged that no country engaged in this effort would be hindered by lack of resources. When the resources came, in Nigeria for example, they disappeared. This was evidenced from *Education for All Global Monitoring Report* (UNESCO, 2005) which concluded that there was massive fraud in building of schools, equipment, textbooks, food, teacher appointment and management, teacher behaviour, general finances, and allowances. By 2020 EFA had become another artefact in the history of education in Nigeria.

In the meantime, governments recognized that regular and rigorous monitoring was required to track progress towards the goals of EFA, identify strategies that make a

difference and hold governments and donors to account for their promises. None of this happened. This led to individual NGO initiatives to provide at least digital literacy – suddenly “computer-assisted instruction” was transformed into “digital literacy” to African children through various initiatives. For instances, in 1997, even before EFA was activated, the World Bank Institute launched the World Links for Development (WorLD) programme ‘to expand access to digital learning resources and address the growing digital divide between the technology haves and have-nots’ (McGhee and Kozma 2000, 1).

In the United Kingdom, *Computers for African Schools* came up with the idea of providing computers to African schools. The initiative later transformed to *IT Schools Africa in 2011* when Internet arrived Africa, and the idea of a stand-alone computer with teachers who had no idea of how to use them became less attractive, and the idea of the trending word, IT as Information Technology gained traction when Internet became available and suddenly children who had mobile phones were accessing contents on the Internet and getting smarter than their teachers. The donated computers remained without maintenance (because no one was trained in computer maintenance), electricity or domesticated software to make them useful to their new homes were not available, therefore, they were abandoned. Next was *Internet for Schools Project (IFSP)*, which is considered the first attempt to integrate computer-assisted education in Mozambique (Cossa and Cronjé 2004). But even by then the Internet had not penetrated African schools enough for the Internet to be useful. It was rare, costly and mainly urban.

However, the very idea of the Internet gave rise to the debates and narratives about a massive “virtual” depository of electronic books on the Internet accessible to all. Thus the idea of Virtual Library was born, spear-headed by Prof. Peter Okebukola who was the National Universities Commission (NUC) Executive Secretary from 2001 to 2005. With funding and technical support from international donors, it became possible to establish the Virtual Library in October 2003. The project was aimed at providing Nigerian students, academics and administrators access to current books and journals in their fields using computer technology as a tool. This was expected to boost learning, teaching and research in the nation’s institutions of higher learning. Laudable as it was, it suffered the implementation malady of poor Internet connectivity in client institutions, despite NUC NUNet’s (Nigerian Universities Network, a Directorate within NUC) facility availability on every campus to ensure access to the virtual library. The library had over 1.3 million international collections with rich archival resources and valuable documents, as well as 1,200 locally published journals with 10,500 high quality artless journal published by Nigerian scholars.

New Virtual/Ethereal Spaces

When “virtual” began to appear in the computer gaming circles, “video conference” made its appearance to reflect a more serious virtuality and the “virtual itself” eventually disappeared. Virtual is not real; it is a simulation of the feeling of reality. Yet in virtual activities, totally outside the computer gaming world (e.g. Doom or Quake), real people meet and discuss critical issues to do with their organizations over the ether of the Internet; rather than “virtual conference”. Again, it was the availability of the Internet that created the spaces for video conferencing which is a live, visual connection between two or more people residing in separate locations for the purpose of communication. At its simplest, video conferencing provides transmission of static images and text between two locations. At its most sophisticated, it provides transmission of full-motion video images and high-quality audio between multiple locations.

The COVID-19 pandemic has already had its impact on almost every aspect of human life. Due to the corona virus-induced lockdown, half of the world’s population is remaining at home. This, in effect, is dramatically altering the way we communicate. The sudden arrival of the pandemic and its rapid spread via travellers in various countries created frozen situations when governments all over the world decided to lock down their cities and countries including schools. In Nigeria schools were closed in March 2020 for more than four months. At the beginning of the pandemic, there was no clear plan for dealing with a situation in which citizens are required to stay at home. In the United States, the administration believed it would soon go away like most pandemics (such as Ebola, for instance). But COVID-19 proved resistant simply because, being a virus, it had no immediate cure – so the race by pharmaceutical companies and research laboratories to find at least a vaccine to make people immune. In the meantime, face masks, washing hands, physical distancing and use of hand sanitizers became a bustling commercial activity for many entrepreneurs who cashed in on the disaster to benefit.

Social Networks and Social Media in the Fry

Hardest hit was the school calendar. Teachers, parents and administrators all over the world during the first few weeks of the pandemic had no clear agenda on how to sustain schooling in the face of the pandemic. It was only in its second month that higher institutions suddenly became aware of video conferencing tools. Skype, which most academics were aware of as a prototype remote conferencing tool, was created by six Europeans and went live on 29 August 2003. It was extremely successful when it was first launched, but could hardly be called a video conferencing tool at the time since it was basically for free phone calls and video chats on a phone, and later a desktop computer. For years it ruled the roost. Eventually it became a Microsoft

product and became relegated to the software graveyard when superior, cheaper and easier similar programs such as WhatsApp and Telegram dominated every school child's increasingly available and cheap smartphones. Still, such telephony applications, good as they are in individual conversations, could not cater for larger audiences. For instance, WhatsApp, created in 2009 in the US, beat Skype hands down by being a freeware. But it remained a messaging application, good for short message service (SMS) chats, although later video and VoIP functions were bolted on the main interface. It was later purchased by Facebook. Telegram came along in 2013 from Russia, with less user-base than WhatsApp, but greater functionality. It became a game changer by being cloud-based and by then, cloud computing – data centres and store on the Internet – was beginning to be the wisdom of any computing professional. Nevertheless, Telegram still remained, like WhatsApp, an instant message and voice over IP service.

The term “social media” started floating about from 1977 and eventually became merged with a later sibling, a “social network”. Whereas the former applies to user-generated media that is shared (e.g. videos on YouTube), the latter is text-based and refers to platforms that allow for discussion (e.g. WhatsApp or LinkedIn). Thus social media encompasses all those forms of digital technology that allow communication and sharing and communication using Internet. No longer were users enslaved to clunky “tower” desktops or expensive laptops. The commodification of technology has also commodified information access. There were no toll-gates on the information highway. Thus using a cocktail of social media and social network platforms, quality content can be delivered through participation, interactivity, sharing, creativity and customization. An example of customization might be lectures recorded on either Telegram or WhatsApp and shared by the entire class or learning cluster. This works particularly well in situations where exotic and sophisticated access to the Internet is difficult, expensive or plain impossible.

With Apple's iPhone setting the standard for telephony in 2007, many universities in the United States had already embraced podcasting (iPod, created in 2001 and broadcasting) and created digital copies of their lectures in the form of MP3 audio formats which were easily distributed to students, eventually becoming an application, iTunes U on Apple Store. Launched in 2007, iTunes U served as a dedicated area within the iTunes Store where users could find free educational content from universities such as Stanford University, the University of California, Berkeley, Duke University, and the Massachusetts Institute of Technology (MIT). The content included course lectures, language lessons, lab demonstrations, sports highlights and campus tours in audio, video or eBook format. iTunes University gave students complete control over the lessons by combining video with the lessons through its links. It additionally

included materials from museums and public media organizations for free download to PCs and mobile devices, combining to make a student's learning experience individual and unique – all using commodified technologies. Thus hundreds of universities around the world embraced the opportunity to share their content, uploading hundreds of thousands of courses that were downloaded millions of times.

iTunes U was a precursor to what later became the MOOC (Massive Online Open Courses) movement, in a world that glorifies in sharing knowledge; although some hosts charge fees for hosting MOOCs, most universities do not. Nevertheless, MOOCs connected learners from across the globe with educators and with each other. Courses are uploaded and those interested – whether students studying for a particular programme or just curious ordinary people – can register and learn new knowledge that was carefully selected and uploaded. With greater sophistication and experience, many MOOCs do provide synchronous user or social media forums to support interactions by the community of users – students, lecturers and facilitators – and receive immediate feedback. In 2012, Apple launched a standalone iTunes U app with new features enabling instructors to offer full courses to students, complete with homework assignments and quizzes. The app, primarily aimed at teachers from kindergarten to senior secondary school, promised a new learning experience for students with iPhones, iPads or iPod Touches. While these devices were (and still remain) extremely expensive and out of the range of ordinary students especially in developing countries, many telephony companies started producing cheap clones of smartphones that mimic the Apple iPhone. A famous example was Samsung which copied Apple's Graphics User Interface (GUI) design, leading to Apple suing Samsung, resulting in a settlement after a seven-year court battle. By then Apple iPhone's standard became a standard in smartphone interface design, and made other companies such as Techno and Huawei, using non-proprietary Android operating systems, also blindly and avidly copy in their own smartphones. These cheaper alternatives penetrated down to lower "classes" and poorer communities and served as effective and functional alternatives to the pricey iPhone. This means that iTunes U can now be accessible to anyone with a smartphone, no matter how cheap, thus increasing accessibility.

Although Zoom Video Communications, Inc. (commonly referred to as Zoom) is an American company, it has Chinese roots in Eric S. Yuan who invented Zoom when, as a student in a Chinese university, he got tired of taking a ten-hour ride to visit his fiancé, and thought it would be a good idea if they could video-see each other at the comfort of their flats (Weiner, 2017). He decided to relocate to the United States in 1997, and had to apply nine times before he could get a visa. He joined WebEx company. In 2011 he cut loose from the company taking over 40 employees with him

to start Zoom in 2012. Right from the start, Zoom was meant to be an enterprise-grade, affordable, all-in-one platform for video conferencing, audio conferencing, web conferencing, and IM (Internet Meeting)/presence – at least enabling him to fulfil his vision of not having to undertake a long journey to see a fiancé – who he married eventually anyway (Weiner, 2017).

Zoom gives organizations and individuals a faster way to communicate relative to audio-only, chat, and email meetings, and it is not restricted by geography, so employees have more flexibility to work from home. Since it lets people meet face to face, and provides support for screen sharing, it is truly a collaboration catalyst, and helps build teams across geographies. Zoom has a remarkably wide range of uses. In fact, Zoom is being used today by developers to write code together, by physicians to diagnose patients, by educators to conduct classes, lawyers to mediate or interview witnesses, and by actors to conduct virtual rehearsals. Thus Zoom features:

- (i) *One-on-one meetings*: Hosts unlimited individual sessions, also with the free plan.
- (ii) *Community video conferences*: Host up to 500 people.
- (iii) However, the free plan allows up to 40-minute video conferencing and up to 100 participants.
- (iv) *Sharing the screen*: Connect with one-on-one or big groups and share the screen with them so that they can see what you see. Lectures via PowerPoint or even plain old MS Word files become easy to share and discuss with participants.

Zoom's biggest competitors are Cisco WebEx, Microsoft Teams, Google Hangouts, Logmein, GoToMeeting and Polycom. While, like Zoom, some provide free spaces for a limited number of people, others require complicated login to access the features (e.g. Microsoft Teams) while GotoMeeting is probably as easy as Zoom for many people. Whatever the case, the emergence and emphasis of these cloud-based learning platforms has created what the media refers to as the "New Normal" in that even post-COVID-19, organizations and institutions have found the motherload to saving tons of money by holding Virtual Meetings, not only to avoid the possibility of infection but also to save money in DTA, travel and accommodation that balloon-up the budgets of most organizations. Students, no matter how remote, can now synchronously and asynchronously continue their learning and interaction with both their tutor or facilitators, again from the comfort (or discomfort, depending on where they reside) of their homes.

However, the perspectives always given were from the point of view of those delivering learning. Not much attention has been paid to those who receive the learning. One of the few that actually did measure the performance of students in the various online modes (online, offline, blended) were Yen *et al.* (2018), who used 85 undergraduate students offering upper-division Child Development course, as a

sample base. The same course was offered three times, in a face-to-face modality (n = 23), online modality (n= 33), and blended modality (n = 29). The prerequisite was an introductory class on Child and Adolescent Development. Achievement of course objectives was assessed by looking at the grades for two midterm examinations, one final examination, research papers, and the overall course total. The three examinations each contained 35 multiple-choice questions and three short essay questions. The results showed that there were no significant differences in students' academic achievement across the three teaching modalities. While this is just one study in California – the heart of the Silicon Valley – it nevertheless gives an insight into the efficacy of online learning as being possible and doable.

The main challenge for those delivering such online teaching include, even in advanced countries, lack of familiarity with teaching over the Internet. This was followed by the difficulty in setting up a Virtual Learning Environment (VLE) and the attendant technicalities involved, especially for teachers who are not familiar with the process. The authors also point out the issue of student overpopulation and budgetary constraints. Their findings show that the blended modality offers more instructors the ability to transition towards a more technologically-mediated classroom, giving them greater opportunities to continue teaching in-person sessions while also selecting the online teaching practices and features that best serve their students. Lecturers can exercise greater flexibility and selectivity in designing blended curricula, ultimately allowing them to optimize their teaching for more students.

Zooming Higher Learning

When the 2020 school shut down showed no sign of abating up to the end of the year, many institutions of higher learning across the globe started to experiment with the idea of synchronous and asynchronous learning – both dealing with online, before the word “virtual”, borrowed from the film and computer gaming industries, became more fashionable. As Finkelstein (2006, p. vii) pointed out, ‘though many technologies are designed to remove the need for human involvement, synchronous tools turn the spotlight squarely on people and invite the participation of those willing, ready, and able to share, collaborate, and learn.’ In this model, as Finkelstein (2006, p. 7) pointed out, lessons are best learned from group discussion or collaboration, which sparks deeper appreciation for and understanding of the subject matter. It also creates a safe environment for exploration and sharing and a sense of community, which are vital to achieving learning objectives, and finally, learning involves the rehearsal, demonstration, and assessment of particular skills. Electronic facilitation through online connectivity where students ask questions of the tutor is synchronous because students can halt the tutor and ask them questions.

Asynchronous learning, still part of the online experience, occurs through online channels without real-time interaction. For instance, a video of a lecture on YouTube is asynchronous because it is a static presentation of prepared material without any chance of immediate interactive feedback. It is flexible, though, giving the user access at their leisure. Yet asynchronous learning technologies were neither new nor esoteric. They only came to the fore, especially in African countries, with the COVID-19 pandemic. The former deals with an interactive station of learning online while the latter has no real-time interactivity.

The novel (because it is new to medical science) coronavirus leading to COVID-19 that swept the entire planet from January 2020 seemed to have introduced new elements in the desire to provide virtual or the now more accepted terminology, online learning. This is perhaps because “virtual” alludes to the illusion of being real, and companies, aware of the use of the expression in the computer gaming world (e.g. Grand Theft Auto, Warcraft) with their unrealistic heroes, quickly shifted towards the more concrete “online” learning mode.

On 2 April 2020, the Nigerian Federal Ministry of Education, not sure of how long the recently declared lockdown would last, through the Minister of Education, Mallam Adamu Adamu, invited 237 vice chancellors, rectors and provosts of the various higher institutions in the country for a rigorous talk concerning how to reopen their respective institutions using virtual learning. For the first time, *virtuality* is at the forefront, rather than restricted to the 13 institutions approved by the NUC (the National Open University of Nigeria, NOUN, as the only Uni-mode; and 12 other universities as Dual Mode). Predictably, the meeting was held on the Zoom platform, which being an early entrant in the “serious” virtual game, came to define its standards. The Honourable Minister at the end of the discussions directed all universities, polytechnics and colleges of education to activate virtual learning environment to enable students continue their studies through digital devices.

By May 2020, almost every CEO of every institution in Africa was being bombarded with companies offering online instruction facilities to various institutions without knowing – or asking the CEOs – anything about the educational structure of Nigeria, the contents, the students, their spread and competencies. Neither were the telemarketers concerned with the evaluation of the students. When probed deeply about these services, they become cagey and suggest a “trial” for some months after which there will be “subscription” to pay, thus tying down a particular institution to a particular vendor.

In a unique demonstration of what can be achieved locally, an experiment was started at Lagos State University, Nigeria. Heads of educational institutions and

students from Sierra Leone, Ghana and Democratic Republic of Congo, Burundi, as well as resource persons from the United States and Nigeria were brought together for intensive sessions on the various topics presented. It was a highly focused, disciplined activity. But while it took a pandemic in 2020 to realize the importance of virtual education, Prof. Okebukola, being instrumental in the African Virtual Library project, was also, as far back as 2016, the architect of the Virtual Institute for Higher Education in Africa, together with his long-time colleague, Prof. Juma Shabani, a highly-acclaimed professor from the University of Burundi, who is best known for his long career working on African higher education development for UNESCO from Harare, Bamako and Paris. The Virtual Institute was conceptualized at the 2016 International Conference on Quality Assurance in Higher Education in Africa, held in Windhoek, Namibia from 20-23 September. The following year, it became a reality. Some of the themes covered in the modules include understanding today's learners, curriculum development in higher education, teaching large classes, teaching and learning methods in higher education, tailoring teaching to different learning styles, guidance and counselling, evaluation and empowering women and students with special needs. The Institute was hosted by Prof. Okebukola's home institution, Lagos State University, and piloted the 19 modules first among its own staff. The programme took off in 2017. So indeed if there is anyone to be considered the Father of Virtual Learning in Africa, it would be no other than Prof. Okebukola who demonstrated his passion, devotion and expertise in ensuring a smooth movement from Elite to Mass higher education.

Thus, while the Federal Ministry of Education was urging higher institutions to 'go online' – without the necessary infrastructure or training for the tutors – Prof. Okebukola, the Centre Leader for the Africa Centre of Excellence for Innovative and Transformative STEM Education (LASU-ACEITSE) hosted by Lagos State University in Nigeria, reported that following the advice offered by the World Bank and AAU, he was setting up the interactive online delivery of six courses. Human and web resources were being mobilized to enable LASU-ACEITSE take-off effectively on Monday, 6 April 2020. Online registration opened on Wednesday, 1 April. The entire process would be documented in two ways – an archived video on YouTube, and paper documentation. LASU-ACEITSE deployed the virtual courses using customized Moodle and Zoom for all interactive video presentations.

Prof. Okebukola had been implementing a similar scheme for the LASU-ACEITSE Research Group 1 students over the previous nine months. He was a leading innovator in the area of alternative mechanisms for delivering teaching, learning and research, and it is his charisma that made him attract many serving and ex-vice chancellors to rigorous semester-rich learning debate from various parts of Africa in the comfort

of their offices or homes during the lockdown. For instance, the following was the programme offerings and their credit load from 6 April 2020:

Master's courses being offered virtually by LASU-ACEITSE

1. Educational Research Methods and Statistics (3C)
2. Trends in STEM Education and Graduate Seminar (3C)
3. The Culturo-Techno-Contextual Approach to STEM Education and Research (3C)

PhD Courses being offered virtually by LASU-ACEITSE

1. Advanced Educational Research Methods and Statistics (3C)
2. Advanced Trends in STEM Education and Graduate Seminar (3C)
3. The Culturo-Techno-Contextual Approach to STEM Education and Research (3C)

LASU-ACEITSE is one of the African Higher Education Centres of Excellence for Development Impact (ACE Impact). Based on the success of the ACE Phase 1 Project, the World Bank and the French Development Agency (AFD) in collaboration with African governments and the Association of African Universities (AAU) launched the ACE Impact Project in 2018 to strengthen postgraduate training and applied research in existing fields and support new fields that are essential for Africa's economic growth.

Virtual learning, back in the day, was already entrenched in the National Policy on Education as open and distance education whose goals were to:

- (i) Provide access to quality education and equity in educational opportunities for those who otherwise would have been denied;
- (ii) Meet the special needs of employers by mounting special certificate courses for their employees at their workplace;
- (iii) Encourage internationalization especially of tertiary education curricula; and
- (iv) Ameliorate the effect of internal and external brain drain in tertiary institutions by utilizing experts as teachers regardless of their locations or places of work. (NPE, 2004).

Many examples abound of Prof. Okebukola's commitment to mass education using Ellulian technique which is a statement of personality and life-long passion. For instance, the movement from elite to mass education, realized through the establishment of the National Open University in Nigeria in 1983, suspended the following year, was resuscitated in 2002 through the efforts of Prof. Okebukola as the Executive Secretary of the National Universities Commission (NUC). The National Open University of Nigeria, with 580,000 students in 2020, was the only Uni-mode university mandated for Open and Distance Learning in the delivery of university education in Nigeria. Thus the narrative moved from "virtual" to "online" to Open

and Distance Learning (ODL). To ensure Quality Assurance, a Directorate of Open Distance & e-Learning was established in NUC to provide oversight functions on the increasing number of dual modes and instructions being offered by many universities. By 2020 NUC had granted 12 universities in Nigeria permission to operate the Dual Modes. They were permitted to operate a dual-mode system – face-to-face learning in the classroom and also open distance learning. This was because only a few of these universities can run an efficient online learning platform. Again by 2020, the National Open University of Nigeria was the only university in Nigeria to conduct Virtual Pen-on-Paper examination for over 20,000 students nationwide with each student being supervised directly from the Headquarters in Jabi, Abuja. An Artificial Intelligence propriety software was able to detect people in the vicinity of the student, phones that could leak answers, etc. – leading to quite a few examination malpractices, without being aware that Big Brother was watching them in Abuja, even though they were in Uyo or indeed any part of Nigeria.

Essentially, the whole concept of “computers for Africa” in which outdated hardware and software are “benevolently” donated to poor (even if corrupt) nations which need them because the rich nations do not need them clogging up their landfills, is now Gone with the Wind. Innovative strategies exist within Africa, with the commodification of technology, to move from Elite to Mass Education at all levels.

Conclusion

Virtual learning, distance learning, online education – whatever term one chooses to use – in the final analysis refers basically to ‘teaching without students’. In its earliest and developmental form, it was mass communication where one communicates to a large number of people without any differentiation. In its latter and more directed and focused form, with specifically defined students, classes and grades, technology gave it a sophisticated sheen that reflects the person of Jacques Ellul’s *Technological Society* (1954) – focusing on *techniques* of reaching out to mass audiences and educating them. Clearly, the lesson from the hugely successful LASU’s ACEITSE shows that it is possible to move from *elite* to *mass* education, reversing the usual trend of mass to elite education as, perhaps, inadvertently, advocated in the National Policy on Education. The reversal from education that was available only to the elite to the masses is mediated by technology and its Ellulian *technique*. This was spectacularly achieved in China, where, according to Martin Turov’s theory of higher education development, China has been making the transition from elite higher education to mass higher education recently (Yang and Ni 2018, p. 291).

In Nigeria, the National Open University of Nigeria is the driver of the country’s mass higher education project. With over 580,000 students enrolled, eNOUN is focused on

the goal. The attainments in NOUN notwithstanding, running virtual “let us accept “virtual” as being more universal and less mundane than “online” which in the wake of the COVID-19 pandemic with companies trying to cash in on the disaster, sounds too clichéd) systems have a set of requirements that not even Ellulian *technique* would meet. These will include:

- (i) Access. Not everyone has a smartphone. Let us not even talk of laptops, since not everyone has even the electricity to run it – for no matter how long it can hold power, it must be powered up; solar solutions had been tried in various configurations of “Computers for Africa” and they did not work.
- (ii) “.. Is not reachable at the moment”. Not every commune has super fiber optic enhanced bandwidth to deliver the content as and when needed, particularly if the provider insists on it being synchronous. Some communes can barely make a phone call, with signal towers being too far away.
- (iii) Tyranny of regulation. Nigeria had been in pandemic since 1859 when CMS Grammar School became the first Secondary School (High School) in Nigeria. It was the pandemic of what Ronald Dore (1976) called “Diploma Disease”. His thesis was part of a critique of the excessive reliance on the selection process in formal education as evidence of ability, training, and merit for entry to particular occupations, careers, or internal labour markets. Right from the 19th century, the Nigerian education system has been geared to ensuring a harvest of “excellent” examination results. The focus was on covering the topics in the syllabus and not on *learning*. Layer upon layers of regulatory mechanisms, all in the name of “quality assurance” ensure fraudulent progress of many students through the system, ending up with less than half-baked graduates. The National Council on Education (NCE) had mandated five Ordinary Level credits including Mathematics for all those wishing to further their education after secondary school – even if they are going to be theologians, they must learn Pythagoras Theorem, amongst other esoteric, dubiously useful Mathematical concepts.
- (iv) Then comes the Joint Matriculation Examinations Board (JAMB) which kept shifting the goalposts of quality assurance until education providers become totally confused. Minimum marks for eligibility to university education keep shifting from high to medium to low. In the meantime, universities ignore JAMB’s confusion and come up with their own departmental demands.
- (v) NUC came along with 13 subjects as being the only ones necessary for national development in its Benchmark Minimum Academic Standards Guidelines (BMAS). Cutting edge issues such as Insurgency, Robotics, Artificial Intelligence, New Media, have no niche. Indeed, it is ironic that no university offers BSc (Education) Online Education. Now that business unusual has metamorphosed

into business as usual, and Online has become a New Normal, one would have thought such a programme would be offered. Clearly, it is not yet *uhuru* (freedom) or virtual, online or distance education for the entire masses of the African continent. The movement, has however, started, and a timeline will determine the political willpower to break the vicious circle of privileged access to quality education by Elite learners to Mass learners. There is no one single prophet of this advocacy than Prof. Peter Okebukola.

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