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Paradigm Shift towards E-Learning in Nigeria

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ABSTRACT: In almost every place in the world, the outbreak of the coronavirus pandemic is pushing societies, cultures and civilizations into uncharted territories. Social systems, economic structures and to an extent, political realities are being disrupted on a scale unprecedented in human recorded history. Educational systems are no exception, with more than 1.6 billion learners forced out of traditional schooling since the beginning of the pandemic. E-learning platforms and models are thus taking the center stage, leaping out from the shadows of traditional classroom-based learning with such force that many have argued it is indeed the future of learning. This paper examines the realities of such a paradigm shift within the Nigerian context, with particular spotlight on its advantages to the educational sector, as well as challenges that may hinder the realization of these advantages and nullify potential positive impacts.

KEYWORDS: Coronavirus Pandemic, Distance Education, E-Learning, Online Learning, Paradigm Shift

INTRODUCTION

The effects of Corona Virus global pandemic continue to reverberate accross countries around the world and across several sectors of human endeavor. Whole industries, supply chains, and entire livelihood opportunities have either been severely hit or practically annihilated. The education sector has also not been left out of the unprecedented destabilizing effects of the pandemic. Indeed, it is said to have caused at least 1.6 billion learners to be out of school in over 161 countries as at the first quarter of 2020. (Saavedra, 2020: Miks&Mcllwaine, 2020). Of course, these figures will likely have reason since then, given the continued adoption of social distancing and outright lock down measures by many governments around the world.

However, governments and policymakers are also facing the dilemma of choosing between closing schools (reducing contact and saving lives) and keeping them open (allowing workers to work and maintaining the economy), and as a result, increasingly favoured the delivery of education via the e-leaning mode. Thus, while e-learning has been around for some time, the exigencies of covid-19 has suddenly shot it into limelight with many schools and colleges around the world now shifting from traditional classroom instruction to virtual classrooms or online learning.

In Nigeria, the educational sector has been on *shutdown* since government ordered the closure of schools (primary, secondary and tertiary) in late March,[1] many educational institutions in the country are now however seriously looking into adopting the e-learning option of educational delivery, especially on the heels of the government's directive for schools to resume through the online mode[2]. Indeed, many privately-owned institutions and a handful of public schools are reported to have begun experimenting with this new method, although it is yet to be seen how successful they have gone with its implementation[3].

This study is an attempt to interrogate the emerging paradigm shift towards e-learning in the Nigerian context, with a view to exploring the prospects and challenges that may be associated with same, especially given both the trajectory and level of the infrastructural and technological investments in the nation's educational sector. Specifically, it will investigate the level of preparedness for such a paradigm shift in terms of the peculiarities of Nigeria's socio-economic milieu, Infrastructural and internet

[1]*FG orders closure of all schools in Nigeria as Coronavirus spreads - Businessday NG*. (2020). Retrieved June 2, 2020, from https://businessday.ng/coronavirus/article/fg-orders-closure-of-all-schools-in-nigeria-as-coronavirus-spreads/

[2]PremiumTimes (2020). Nigeria grants approval to 12 universities to operate Open Distance Learning. Accessed from https://www.premiumtimesng.com/news/top-news/395983-nigeria-grants-approval-to-12-universities-to-operate-open-distance-learning.html

[3]Idris, Abubakar (2020). Without online learning platforms, a few Nigerian universities have switched to WhatsApp. https://techcabal.com/2020/06/02/without-online-learning-platforms-a-few-nigerian-universities-are-using-whatsapp/

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issues, regulatory and quality-control frameworks, competencies issues for both teaching and non-teaching staff, as well as funding and administrative challenges.

EDUCATION IN NIGERIA: ISSUES AND CHALLENGES

Education in Nigeria has had a long and chequered history, perhaps reflective of the country's history itself. From its colonial roots, there have been profound changes in terms of its structure, curriculum development, content, as well as it several mode of delivery. One of the stand outs of this narrative is consistency in the drop of educational standards, and consequently, outputs. Years of underfunding, as well as policy somersaults continue to hinder the development of the educational sector, thereby limiting its capacity to improve the human capital development needs of the country.

Indeed, since independence in 1960, the successive governments and policy makers in the educational sector have been grappling with the challenge of designing an educational system that can best harness and develop the vast human capital potentials of the country for sustainable national development. Thus, from being utilized and structured essentially as a tool for developing manpower able to carry the administrative functions of the colonial government (Ajayi, 1965 cited in Daniel-Kalio, 2018), to the shift to concerns with using schools to develop manpower for economic development and Africanisation of the civil service (Woolman, 2001 cited in Imam, 2012), and then to becoming conceptualized as a tool for economic and national development in the post-independence era, the trajectory of the Nigerian educational sector in terms of both content and policy has continued to gravitate toward the increasing recognition of its centrality to concrete development.

However, as Daniel-Kalio (2018) notes, "the demand for a well-defined national policy on education has generated much debate. This debate has led to many Federal and State commissions, all of which have made recommendations that would help to eliminate the strong bias toward the traditional literary and academic subjects". Indeed, the Nigerian government, as far back as 1977, had issued a policy statement on education which introduced a philosophy of Nigerian education from preschool through the university levels. The specific national aims and objectives to which the philosophy is linked are: (1) the inculcation of national consciousness and national unity; (2) the inculcation of the right type of values and attitudes for the survival of the individual and the Nigerian society; (3) the training of the mind in the understanding of the world; and (4) the acquisition of appropriate skills, abilities and competencies, both mental and physical, as equipment for the individual to live in and contribute to the development of his society (Imam, 2012; Daniel-Kalio, 2018).

This National Policy on Education (NPE) has since been reviewed several times, by different administrations, to capture new realities and meet changing societal expectations. Issues which include the need to fulfill commitments towards international protocols, like the Education for All (EFA); and the United Nation Millennium Goal (MDGs), as well as the Home Grown Medium-term Development Plan and the National Government Empowerment and development strategy (NEEDS). Indeed, the purpose of the 2014 review of the NPE was to make educate an aggregate tool of empowerment for the poor, and the socially marginalized groups, an effective means of developing the fullcapabilities and potentials of human resources, as well as the development of competent workforce through the acquisition of practical life skills relevant to the world of work as a veritablemeans of developing sound intelligent learning societies, fit and relevant to the 21st century (NPE, 2013 cited in Daniel-Kalio, 2018).

However, in spite of these policy initiatives and directions, implementation challenges, chronic underfunding, as well as mismanagement ofthe little funds made available have ensured that the educational sector is grossly incapacitated and continues to experience low productivity. Indeed, for Okoroma (2006), the perennial ineffectiveness of the implementation of educational policies and programmes in Nigeria is engendered primarily by lack of political will, lack of continuity of programs, and corruption. This view is also shared by Asikiya&Boma (2015) who argued that the unnecessary change and modification of policies without religiously implementing it to a logical conclusion, as well as the frequent change in leadership are potent factors that have negatively affected educational policy implementation in Nigeria.

All of the foregoing has thus cumulatively rendered the Nigeria's educational system immersed in assorted crises of infrastructural decay, neglect, waste of resources and sordid conditions of service. Currently, the country has over 10 million out-of-school children, the highest in the world. Another 27 million children in school are performing very poorly. Millions of Nigerians are half-educated, and over 60 million – or 30% – are illiterate.On top of this, many eligible young Nigerians can't gain admission

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into public universities, while facilities and personnel in these universities are grossly inadequate to cater for the needs of those who are fortunate to get enrolled.

Thus, at a time when quality education is arguably more vital to one's life chances than ever before, Nigerian children and youths are missing out on the education needed to live fulfilling lives as adults and to participate in and contribute to the world economy. Historically, education has been the shortest bridge between the haves and the have-nots, bringing progress and prosperity for both individuals and countries, but the current education system is showing its age. Founded at a time when colonial overlords needed workers with a relatively fixed set of skills and knowledge, it is losing its relevance in an era of innovation, disruption and constant change, where adaptability and learning agility are most needed (Krishnan, 2020)

CONCEPTUAL CLARIFICATION OF E-LEARNING

E-learning as an emerging paradigm of modern education is a concept that is associated with a number of terms including online learning, internet learning and to a lesser degree, distant or remote learning, and covers a range of applications, learning methods and processes. Thus, the concept has been severally defined by authors. In some definitions e-Learning encompasses more than just the offering of wholly on-line courses. For example, Oblinger and Hawkins, 2005 (cited in Arkorfu&Abaidoo, 2014) opined that e-Learning has transformed from a fully-online course to using technology to deliver part or all of a course independent of permanent time and place. Also the European Commission (2001) describes, e-Learning as the use of new multimedia technologies and the Internet to increase learning quality by easing access to facilities and services as well as distant exchanges and collaboration.Moreover, for Goyal (2012), it is seen as the science of learning through the use of telecommunication technology to deliver information for education and training. Similarly, Hoppe et al, 2003 (cited in Basak, Wotto&Belangar, 2018) defined the concept as "the learning supported by digital electronic tools and media".

But from a restricted point of view it was perceived as a basically any learning that is internet-enabled or web-based (LaRose et al, 1998; Keller and Cernerud, 2002). In trying to be as comprehensive and at the same time, succinct as possible, Markus (2008) defines the concept as a learning process created by interaction with digitally delivered content, network-based services and tutoring support. He further contends that e-learning is "any technologically mediated learning using computers whether from a distance or in face to face classroom setting (computer assisted learning)", and that "it is a shift from traditional education or training to ICT-based personalized, flexible, individual, self-organized, collaborative learning based on a community of learners, teachers, facilitators, experts"

In this paper, we define e-learning essentially as the type of learning that offer courses delivered via ICT tools, i.e. internet, computer and mobile phones, to an audience not restricted to the traditional classroom. It is basically learning through electronic means rather than by the traditional face-to-face, teacher- student classroom setting. The phenomenon of e-learning is a direct consequence of the revolution in communication and information exchange that has been brought about bytechnological advancements, especially the advent of the internet or *World Wide Web*. In this regard, a better understanding of e-learning through an elucidation of its basic features is appropriate here. E-learning includes the following basic features:

- The transformation of educational contents into digital format – audio/visual recordings, fliers, and delivery of same via electronic means
- The delivery of educational contents via the internet to a virtual classroom, or several individuals/ groups separated by time and space
- Allowance for self-paced learning models which give learners a chance to speed up or slow down as needed
- On-demand access, where learning can happen when needed. Learning materials and most of the support are available 24/7. Learning does not require physical presence
- Learning services are designed using learner-centred approaches, accommodate a variety of delivery methods and multiple learning styles.

Thus, e-learning consists of basically two aspects- pure online-learning and open distance learning (remote learning). It is also becoming more popular by the day, with the rise of several online-based academies, many of which are affiliated with traditional educational institutions. Online Platforms such as Khan Academy, Cousera, Allison, Edx now offer specialized courses, also known as Massive Open Online Courses (MOOCs across several disciplines, in collaboration with leading colleges and

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universities in the Global North such as MIT, Stanford, UC Bekerly, University of Amsterdam etc., either with or without paid access. Writing on this growing phenomenon, Czerniewicz (2018) argues that:

> "What is also happening in the online sphere is that the different dimensions of teaching courses and programs are separating out or disaggregating. These dimensions comprise various granular components: e-readiness; program-level planning; course design and development; course delivery; course student support; course and program evaluation; and course maintenance/updates. Every single component within those dimensions can be offered by a different provider or vendor as a single service or as multi-services".

Thus, it is now possible to get certifications and degrees through online means without ever setting foot on a traditional campus, thanks to advanced developments in e-learning models. In fact, some writers have argued that is the future of education, given the increasing influence of technology different dimensions of interactions in the world (Goyal, 2012), while MOOCs have been hailed by many as a solution for the lack of places for university education, especially in the developing world (Liyanagunawardena, Williams & Adams, 2012: Czerniewicz, Deacon, Small &Walji, 2014). The inequality challenges in terms of accessibility and reach, especially for the poor and technologically backward in developing countries, among others suggest that there is still a long way to go.

Nevertheless, it would suffice here to state that e-learning now presents a radical challenge to the way education has been traditionally viewed, structured and delivered. Technological innovations has revolutionized remote learning from when it first started as distance learning delivered through the exchange of mails and letters to the ability to now have virtual classrooms, as well as creating communities of learners (and teachers), thus giving rise to the growing importance of critical thinking, research, and evaluation skills as students have increasing volumes of information from a variety of sources to sort through (New Media Consortium, 2007). Moreover, as Moses (2001) noted that: "E-learning offers a powerful alternative to traditional form of learning that has worked for many centuries. Perhaps as importantly, it has forced us to rethink our working environments, what we need to learn, why do we need that learning and how we go about measuring success. In some ways, that process may be as important as the new form of learning implementation. Just as changes in Commerce have forced corporations to evaluate how they convey and add to their core capabilities to produce goods and services, so e-learning now offers a chance to rethink learning in many other sectors of society"

E-LEARNING AND THE "NEW NORMAL"

The popularity of e-learning models and platforms has increasingly been on an upward trajectory in recent years, but the advent of the coronavirus global pandemic has now ensured its serious consideration and adoption by educational systems around the world. The novelty of the virus and the uncertainty about its peculiar character in terms of spread and fatality, contributed to the growing rapid and large scale adoption of e-learning, especially in countries where the needed infrastructure and tools are already in place. Thus, while some countries are simply putting resources on their website, and making available more products, but not necessarily online classes, others, like Spain, are asking teachers to prepare online content and offer online classes. Infrastructure and familiarity with the tools seem to be driving successes (and challenges) of delivering learning. China for example, with robust connectivity, is offering distance learning successfully whereas others with limited penetration of internet, cell phone, or television (e.g. Vietnam, Mongolia) are finding it difficult to reach all students equally. In addition, many countries have challenges in ensuring that education services are equally accessible for employees/students with disabilities.

Even as restrictions on movements and businesses are being eased all over the world, governments are however cautious about the opening of schools, especially given genuine fears about a second wave. Already, new cases are spiking in countries that have previously recorded substantial reduction in confirmed cases.[4] While some countries are either ordering new lockdown measures or considering one in order to mitigate the continuous spread of the virus. Yet, many have expressed the anxiety about how to get the world running again, and especially in the educational sector, given its central place in knowledge production and human capital development. Besides, it is also a huge and very important sector for national economies that it is practically impossible for it to remain non-functioning for an extended period of time.

[4]Coronavirus: World sees highest daily increase in virus cases – WHO, BBC news (2020). Retrieved from https://www.bbc.com/news/world-52748894

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Nevertheless, as the world reels from the effects of the novel coronavirus disease, it goes without saying that new rules and principles will guide social conduct, itself impacting the way educational systems will run in the coming years. The transition towards e-learning is therefore expected to take center stage in such a 'new normal', confirming what many industry experts and commentators have long expressed as the future of education (Goyal, 2012). It is also clear that this pandemic has utterly disrupted an education system that many assert was already losing its relevance (Krishnan, 2020). And as the World Economic Forum quips, "Could the move to online learning be the catalyst to create a new, more effective method of educating students? This remains to be seen. However, "while some worry that the hasty nature of the transition online may have hindered this goal, others plan to make e-learning part of their 'new normal' after experiencing the benefits first-hand". (WEF, 2020).

Thus, with this sudden shift away from the traditional face-to-face Instructor-led Teaching (ILT) in many parts of the globe, some are wondering whether the adoption of online learning will continue to persist post-pandemic, and how such a shift would impact the worldwide education market. Indeed, one researcher has emphatically claimed that "the COVID-19 pandemic means education may never be the same again" and that "whether it's parents home-schooling their children while working from home, teachers' attempts to keep 30 kids engaged on a Zoom call or pupils sat at new socially distanced desks, education's 'New Normal' has arrived at a blistering pace" (Murray, 2020). The significant surge in the usage of e-learning tools and techniques including language apps, virtual tutoring, video conferencing tools, or online learning software since the emergence of COVID-19, may thus come to essentially characterize educational delivery in many countries of the world, and perhaps in Nigeria.

E-LEARNING IN NIGERIA

The tilt towards e-learning has not been as dramatic and sweeping in Nigeria as it has been in many developed countries of the world. This probably has more to do with the country's huge infrastructural and technological deficit, than with any other factor. Thus, the urge to embark on e-learning is still a dream to some because their infrastructure of ICT's is very weak. Indeed,very few educational institutions, aside expensive private establishments, have the resources and capacity to adopt e-learning models to cater for the needs of students at this period. However, one aspect of e-learning gaining traction in the Nigerian higher education landscape is Distance Education (or Open Distance Learning). Distance Education (DE) is a system of education characterized by physical separation between the teacher and the learner in which instruction is deliver through a variety of media including print and other ICTs to learner who may either have missed the opportunity earlier in life or have been denied the face-to-face formal education due to socio-economic, career, family and other circumstances (Ajadi, Salawu&Adeoye, 2008). Jegede (2003) also sees it as the kind of "education provided by a mode other than the conventional face-to-face method whose goals are similar to andjust as noble and practical as those of on-campus full time face-to-face education.

The National Open University of Nigeria, as well as some public universities such as the University of Ibadan, ObafemiAwolowo University, University of Benin, University of Abuja, University of Lagos, National Open University of Nigeria among others have been actively involved in Distance Education, with varying degrees of success. The National Universities Commission gave approvals to twelve universities to run open and distant learning programmes, to mitigate the effects of the coronavirus pandemic on higher education. It however stressed that save for a few private universities, none of the universities in Nigeria has the wherewithal to run an effective e-learning platform that is fully online, thus calling on these universities to explore the possibilities of online learning (Premium Times, 2020). As such, e-learning models mostly common in Nigeria is in form of lectures note on CD-ROM which can be played as at when the learners desires. Some institutions like the university of Ibadan have tried to develop their ICT capacity to deliver online learning.However, very few programmes are so offered and even those are run more like distance education than online education.

The issues surrounding the operationalization of e-learning, and particularly online learning in Nigeria are numerous, and are discussed below.

ADMINISTRATION

Administrative efficiency and capability defines the success or otherwise of any undertaking, which is no less true in public-oriented initiatives. One of the most crucial issues e-learning has to grapple with in Nigeria is that of effective administrative structures to ensure uniformity, quality, focus and goal-orientation. Given the freedom individual institution tend to enjoy when it comes to particular e-learning models they adopt and how to run them, questions on how to successfully administer these

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programmes becomes pertinent. Within institutions, individual schools, faculties, colleges and/or departments enjoy certain degrees of freedom in the administration of their respective individual conventional programmes. They determine for instance, minimum requirements for entrance, passing of examinations and graduation, as well as curriculum and structure if programmes and the number of credits to be offered in such courses/programmes. When it comes to online learning however, individual faculties may not possess the requisite capabilities in terms of infrastructure, space and technical staff to maintain their autonomy, and crucially, the high degree of rigourand consistency that online learning requires.

Institutions have to come up with a centralized governance approach to dealing with such issues, which again may bring up to the fore the challenges of quality and uniqueness. Navigating around these issues may not be accomplished in an instant. It will require systematic, progressive and detailed structuring that actively seeks for the buy-in of all individual stakeholders and provides for their peculiarities, through the setting up of a number of measures. These may include, among others, "an independent organizational structure to support all decisions and execution related to online learning"; "a transparent process for decision making regarding online learning that involves appropriate stakeholders from faculty members and administrators"; and thirdly, "an independent department within the institution that assumes primary responsibility for the execution of all online initiatives" (Ackerly, 2018).

At the primary and secondary levels of education, the challenge of administrative quality is even more acute, especially in public schools. The Nigerian government has partnered with mobile communications providers in the country to launch free e-learning portals, schoolgate.ng and mobileclassroom.com.ng., for all students following the closure of schools nationwide to prevent the spread of COVID-19 pandemic (Premium Times, 2020). According to the same source, more than half the states have also commenced electronic learning for pupils on their local television and radio channels following the stay-at-home orders of the federal and some state governments. These initiatives as laudable as they are, will also require administrative acumen to ensure proper implementation, especially in terms of access for rural and poor pupils, as well as sufficient inclusion.

CURRICULUM AND CONTENT DEVELOPMENT

A pertinent challenge to e-learning in Nigeria, and indeed elsewhere in the world, is that of curriculum and content. Several questions such how to determine what contents are suitable and conducive for online education; how these contents are to be made digital; how to determine learning outcomes, as well as how to sustain students' attention. A particularly challenging aspect of this whole conundrum is that of digital development. Course materials and contents need to be digitally available, on the go, and flexible enough for students to interact with, especially when it concerns assignments, term-papers and continuous assessments. Thus, courses should have specific learning outcomes and goals that directly support the outcomes and goals of the program. In this regard, Ackerly (2018) opines that "institutions should have uniform standards for course quality and academic honesty to encourage a culture of academic integrity among faculty members and students" as well as consider each of the following: a unified program map and sequence for all course offerings that aligns program- and course-level outcomes; Ensuring a more consistent student experience from course to course; Regular involvement of deans and department chairs in the development of online curriculum; Determining and addressing all programmatic requirements and expectations prior to online course development; Creating and enforcing program standards for all online offerings during course design and facilitation; and, creating academic integrity policies and discussing them with faculty members and students frequently.

All of these issues have to be navigated around for e-learning to become a successful venture in the Nigerian educational sector. One of the much vaunted advantages of e-learning is its tendency to entrench critical thinking skills and digital competencies, two very important skills for the increasing technology-driven 21st century. These potential advantages may not be realized however, when proper attention is not paid to development of content, as well as when there is a lack of painstaking curriculum design that takes them into cognizance.

INFRASTRUCTURE – POWER, INTERNET AND ICT EQUIPMENT

Infrastructure is central to e-learning. As a matter of fact, where the essential infrastructure of adequate power, bandwidth and ICT is unavailable or lacking, e-learning may not work. Given the acute infrastructural gap in Nigeria, e-learning is a seriously challenging venture to undertake.As noted by Psycharis (2005), the successful implementation of e-learning by an educational system should fulfil certain criteria such as the acquisition of adequate technological infrastructure and adequate educational

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content of persons with university skills and a developed culture which encourages learning and sharingof knowledge. In this regard, Nigeria ranks 62 among nations in terms of institutional e-readiness which is defined as the ability of a nation's institutions to use ICT to achieve their mission and vision, below South Africa and Egypt – which rank 39 and 57 respectively (Kyari et al, 2018).

Nigeria's e-readiness ranking highlights the need to seek innovative solutions to improve ICT usage. This is even the more pertinent due to disruptions to traditional learning caused by the coronavirus disease, leaving approximately 39 million learners out of school[5]. Anene, Imam &Odumu (2014), in a study found out that the majority of public tertiary schools did not have e-learning library domain, that their bandwidth were limited and that their electricity supply was limited. Sadly, little has changed in that regard in many public institutions in Nigeria. The situation is even worse at the lower levels of education, where ICT tools and access to the internet are virtually non-existent.

Therefore, eliminating this formidable obstacle to the useof information and communication technology is crucial for e-learning to thrive in the country. The earlier policy makers and government begin to expedite action on this, the better for the educational sector and for the country at large. As has been noted elsewhere in this paper, e-learning seems to be playing a more central role in the "new normal' of education, in the wake of the coronavirus pandemic, and as such, the country cannot afford to be left behind in the emerging digital revolution in the educational sector.

ACCESS AND INCLUSION

The digital divide means that internet and mobile network access varies greatly in low-income countries, for instance access to the internet is over 80% of the population in some Southeast Asian countries, but as low as 39% in Vietnam and some African countries. In Nigeria, the percentage is a higher[6], but there are great variations in rural/urban share for example, as well as regional and gender disparities. Besides, many internet users in Nigeria presently use it for Facebook purposes mainly, and little else.[7]The reality is that online learning will be easier for those with access and will exclude large groups of disadvantaged learners. A large number of learners may have no electricity, some will have a radio but not a television at home, others will have basic feature mobile phones but not smartphones, and others will have only lowbandwidth internet available (David et al, 2020)

The critical challenge of access and inclusion is summarized in a Word Bank brief, where itreckoned that most online learners will experience difficulties, and may even derive limited value form such a mode of learning, especially for "children in poor communities, in householdswhere Internet access is poor (or non-existent), who have little prior experience with online learning, and/or are subject to numerous other disadvantages". It was also noted in the same brief that "where education systems (or schools) are not able to support online learning opportunities at scale, some highly motivated students with access to sufficient bandwidth, connected devices, and ability tolearn independently may be able to take advantage of online learning resources offered by companiesand non-profit groups. Where education systems are unable to provide such online learningopportunities themselves, there is value in alerting students to the availability of such resources" (Word Bank, 2020).

FUNDING

E-learning is a capital intensive venture. It will require the procurement of ICT tools, affordable and reliable bandwidth, as well substantial investment to make power available to homes and institutions. The educational sector in Nigeria is grossly underfunded, with its share of yearly budgetary allocation consistently below the 15-20% recommended by UNESCO[8]. Interestingly, most of the budgeted funds go into financing overhead costs, with very little available for infrastructural

[5] See Taibathussain's post on the University of London's SOAS Blog, https://www.soas.ac.uk/blogs/study/covid-19-nigeria-digital-divide/

[6] See the BBC's 'How internet access is improving in Nigeria', https://www.bbc.com/news/business-51377955

[7] See the article, '60% of Nigerians are Still not Connected to the Internet and Only About 10% are Active on Social Media', https://technext.ng/2020/01/31/60-of-nigerians-are-still-not-connected-to-the-internet-and-only-about-10-are-active-on-social-media/

[8] Approximately 6.7% of the 2020 budget was allocated to the educational sector.

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development[9]. The Nigerian government operates a contributory fund called Tertiary Education Tax Fund (Tetfund) on every Nigerian resident company at the rate of 2% of the assessable profit for each year of assessment, which serves to augment budgetary allocations to education in the country. However, even this has shown to be inadequate in addressing the funding challenges education, especially tertiary is facing in the country. a related problem is the mismanagement of even the little funds made, available. There are several instances of university administrations and school managers entrenched in corruption scandal.
Thus, all of these suggest that the issue of funding, responsible management and accountability is germane to quality education tailored towards 21st century needs. Inability to sort these will continue to mount daunting obstacles in the path of the successful development of e-learning capabilities in the Nigerian educational sector.

STAFF TRAINING AND DEVELOPMENT

Without doubt, the 'social system', 'the hardware and software available to users', as well as particular 'ogranizational infrastructure' in which ICT operates are critical to the success of e-learning initiatives (Kyari et 2018). In this regard, Grant & Meadows (2002) opine that "for educational institutions which are focused on facilitating learning, a primary goal for technology usage is to facilitate teaching and learning. Training efforts designed to diffuse innovative teaching strategies should address enabling, limiting, motivating and inhibiting factors at all levels of analysis. For example, policy decision at the system level can ensure appropriate technologies are utilized effectively. The organization provides an enabling environment for technology usage by ensuring the effective implementation of ICT policies. Even with all systems and organizational structures in place and working effectively, sufficient emphasis must be placed on motivating individuals to actively use technologies"
While, some teachers will champion video conference lessons, keep in touch with their students on social media or SMS messaging and produce teaching materials, others may feel overwhelmed if they are suddenly required to use technology new to them, and if they are held accountable to new standards. Education system managers must be aware of their teachers' levels of ability and set expectations accordingly. EdTech might remedy some of this — forinstance through flexibly adapting materialsto different technological channels ofdelivery or opening up channels to rapidlysupport struggling teachers throughmentoring by teachers' educators — butteacher capability will be a core constraint,and cannot be quickly overcome.
ICT initiatives must address critical factors which include cultural change, time for academics to transit from traditional teaching to teaching with technology, as well as staff development and training needs. Fundamental change in the role of teachers in higher education institutions can result in culture shock. It is critical to assess the current environment from various perspectives in order to implement an integrated strategy to facilitate successful diffusion of innovation. (Somekh, 1998 cited in Kyari et al, 2018).

CONCLUSION AND RECOMMENDATIONS

The survival of tertiary education institutions in the 21st century will increasingly rely on various forms of electronic delivery and communication inside a market place that requires education to be flexible (Ajadi et al, 2008; Goyal, 2012;Kyari et al, 2018). E-learning is now widely used in most of the developed countries to promote distance education (DE) and life-long learning in an effective way. In Nigeria, the recent developments and awareness of the Government on ICT have opened an opportunity to adopt e-learning to deliver online or distance education for educating mass of its uneducated or less educated peoples. Considering the recent expansion of ICTs in the country, Educational authorities, especially in tertiary institutions could introduce some modern ICT like e-mail, web-based learning (e.g. open course wares), CD-ROM for delivering course materials through e-learning for learners. However, before going to introduce an advanced ICT, it is suggested that enough research be conducted on learner's access, cost and other related parameters essential
Today, e-learning is still in an early stage with many uncertain issues to be clarified and investigated. There are many factors potentially influencing E-learning effectiveness, such as media characteristics, learning context, technology, and learner characteristics. The practice of e-learning in some advanced countries and even in Africa have shown to be at least as effective as conventional classroom learning under certain situations, and that e-learning seems to be the future of education in the long run. However, learning is mostly a socio-cognitive activity, and not every student will find e-learning suitable for his or her learning

[9] Out of the 691.07 billion budgeted for education in 2020, a whopping 490.2 billion is recurrent expenditure while only a paltry sum of 50.9 was reserved for capital expenditure. See https://educeleb.com/nigerian-2020-budget-education-ministry/

style. Some students feel bored or intimidated in front of computer, while others simply find it hard and too complex to operate. Thus, traditional classroom learning may still continue to hold sway, especially in low-income countries like Nigeria.

Other important issues in e-learning must also be taken into consideration. Issues of trust, authorization, confidentiality, and individual responsibility must be resolved. Owners of intellectual property should be properly compensated. Security on the Internet is a growing challenge, primarily due to the open access by the public to this universal network. In addition, since multimedia materials are heavily used in E-learning systems, a high-bandwidth network is a basic requirement for efficient content access.

Nevertheless, e-learning is a promising alternative to traditional classroom learning, which is especially beneficial to remote and lifelong learning and training. In many cases, e-learning can significantly complement classroom learning. E-learning will keep growing as an indispensable part of academic and professional education. Efforts should continue to explore how to create more appealing and effective online learning environments. One way to achieve this is to integrate appropriate pedagogical methods, to enhance system interactivity and personalization, and to better engage learners. (Zhang et al., 2004).

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