REPOSITIONING OF LIBRARY SCHOOLS FOR E-LEARNING IN POST-PANDEMIC ERA: IMPLICATIONS FOR LIBRARY AND INFORMATION SCIENCE EDUCATORS IN NIGERIA

Chika Patricia IKE[1], Chinwendu Chizoba AKPOM[2] & Oyemike Victor BENSON[3]
University Library, University of Nigeria, Enugu Campus[1,2], Department of Library and Information Science, Federal Polytechnic, Nekede-Owerri, Nigeria[3]
chika.ike@unn.edu.ng[1], chinwendu.akpom@unn.edu.ng[2], ovbenson@fpno.edu.ng[3]

Abstract

Purpose: *The paper focuses on repositioning of library schools for e- learning in the post- pandemic era in Nigeria. It was noted that the global impact of Covid-19 pandemic is undeniable with excerpt from some African countries.*

Design/Methodology/Approach: *An exploratory approach through extensive review of related literatures was adopted for this study. The paper also highlights on e-learning, a general overview of coronavirus.*

Findings: *The paper discusses the implications of Covid-19 pandemic for Library and Information Science Educators in Nigeria such as integration of e-learning into the library school system, recruitment of ICT-compliant staff, intensive trainings and re-training of library science educators, provision of modern internet facilities for library schools, creating awareness on need for e-learning and intensive engagement in exchange programmes.*

Practical Implication: *Evidently, the result of this study indicates that library and information professionals must take pragmatic steps in ensuring that the library sector is adequately repositioned for effective service delivery in the post-pandemic period. Corporate synergic approach is needed to ensure that the library is adequately funded.*

Originality/Value: *There is need for collaborative initiatives between stakeholders in library science profession to ensure that the drive for e-learning becomes a reality.* ***Conclusion:*** *Repositioning of library schools is required to ensure that Library and Information Science profession will remain a discipline to be reckoned.*

Key words: *E-learning, Information Science Educators, Library Educators, Library Schools, Pandemic, Post-Pandemic Era, Nigeria.*

Introduction

The federal government of Nigeria declared that tertiary institutions should adopt the e- learning platforms to meet the educational needs and demands of the educational sector, especially with the total and partial lockdown of the economy, due to global pandemic. Unarguably, there is a fundamental shift that has manifested in the educational settings as a result of corona virus pandemic otherwise, known as COVID-19. This paradigm shift has culminated in the upsurge in the adoption of e-learning approach as strategy for sustaining the educational system.

Covid-19 is an organic virus which caused various sorts of organic and non-organic viral behaviours in all spheres of (human) biology, culture, and society (Jandric, 2020). So far the virus (Covid-19) has spread across six continents, and governments around the world are responding through pragmatic approach to control the coronavirus spread. Covid-19 is a new disease, distinct from other disease caused by coronavirus such as Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS) (WHO, 2020). In humans, seven coronavirus are known to cause respiratory infections, including the common cold and more severe diseases such as Middle East Respiratory syndrome. The symptoms of

coronavirus include coughs, fever, shortness of breath and breathing difficulties. The elderly, and those with underlying medical problems such as high blood pressure, heart problems or diabetes, are more likely to develop serious illness. The emergence and outbreak of the novel coronavirus (Covid-19) poses a significant threat to the global economy. The Covid-19 pandemic is acknowledged as the defining global health crisis of our time and the greatest challenges people have faced since world war two. This deadly virus caused the world to be in high alert as the death toll and the number of confirmed cases is continuously rising since the first case was reported (AlTakarli, 2020).

The educational sector with the global space is enmeshed in the wind of change. The covid-19 pandemic has come to alter the way of teaching and learning depending on the readiness of educational administrators to embrace this change. The federal government decisions for tertiary institutions to resort to e-learning has demonstrated the need for Library and Information Science Educators to reposition themselves through innovative and creative practices being integrated into the learning processes. No doubt, Library and Information Science Educators are face-to-face with the new reality of e-learning, especially with the lockdown of educational institutions due to Covid-19 pandemic. This new reality will force non-ICT compliant lecturers in library schools to undergo intensive trainings on the applications of ICT to teaching and learning. There is need for Library and Information Science Educators to move faster and think quicker as Covid-19 is definitely going to have an undeniable impact in the teaching and learning landscape of information services. The World Health Organization (WHO) acknowledges the fact that the world is presently under the threat of covid-19, hence it declares it as a pandemic.

Objectives of the Study

This study generally aims at advocating the need to reposition library schools for e-learning in post-pandemic era in Nigeria with emphasis on the implication for Library and Information Science Educators. Specifically, the study seeks to:

a. highlight on the conceptual clarification of e-learning;

b. take a general overview of coronavirus;

c. discuss the global impacts of Covid-19 pandemic with excerpt from some African countries; and

d. highlight on the implications of covid-19 pandemic for Library and Information Science Educators.

E-Learning: A Conceptual Clarification

E-learning is the acquisition and use of knowledge distributed and facilitated primarily by electronic means. This include the use of web-based teaching materials and hypermedia in general, multimedia, CD-ROMS, websites discussion boards, collaborative software e-mail, blogs, wikis, test chart, computer aided assessment, educational animation, simulations, garners, learning management software, electronic voting systems, and more, with possibly a combination of different methods being used. Online learning is increasingly becoming the norm and part of the mainstream in higher education. E-learning services provide opportunities for any person to learn anywhere, anytime. The e-learning system is of great benefits for trainers and learners located across the world and learners can access information without having restrictions of time. One of the biggest challenges facing managers of the 21st century is how to maximize the use of the information systems installed in their organizations (Mtebe, 2014). E-learning in our learning institutions is the full integration of modern telecommunication equipment and ICT resources, especially the Internet.

E-learning is the term used to render teaching and learning resources or practice that is, in some way, delivered electronically. E-learning is meant to be more than just educational websites or computer software. It includes all facet of electronic delivery - so watching an educational video, using a digital camera, using a computer to edit pictures, text or sounds for presentation or project, or using and interactive whiteboard in a lesson, can all be considered implementation of e-learning. E-learning, no

doubt, is gradually becoming an increasingly important part of education these days. E-learning involves the use of network technologies to create, foster, deliver and facilitate learning and it encompasses face-to-face, distance, mixed and blended delivery models that utilizes electronic means, a unifying term used to describe the fields of online learning, web- based training and technology delivered instructions (Sharifabadi, 2006; Adebayo, 2019).

Furthermore, e-learning is an earning enabled by the electronic media. It is a learning made easy by the application of ICT. With the introduction of ICT in education, a new world of possibilities is available to further assist both lecturer and student too maximize the learning experiences (Schurgers *et al,* 2009). Improving quality is one of the most significant challenges for Higher Institution of Education (HEIs) in developing countries. Applying e-learning in the educational environment encourages the universities and schools to facilitate their learners and enhance their learning opportunities (Hadullo, Oboko & Omwenga, 2018; The & Usagawa, 2018). There is a gain-saying that the education fields in most developing economy of Africa have been drastically affected by the growing influence of developed e-learning resources (Owate, Afolabi & Akanwa, 2017). The growth in e-learning, in which education is delivered and supported through computer networks such as the internet, has posed new challenges for library services (Sharifabadi, 2006).

The adoption and acceptance of e-learning systems is a vital challenges, especially in developing countries because they have numerous barriers such as poor network infrastructure, lack of ICT knowledge weakness of human resources, etc. (The & Usagawa, 2018). The rapid development of Information and Communication Technologies (ICTs) and the move towards more knowledge intensive, interdependent and internalized societies create new challenges and opportunities for the design and delivery of education (Sen & Sarmah, 2014).

Integration of e-learning to library schools no doubt will help in repositioning library schools to meet the demands of not just contemporary society but also the post-pandemic era. The e-learning platform has become imperative in the educational sector.

Coronavirus: A General Overview

Corona virus (CoVs) is positively sensed single-stranded RNA viruses that belong to the older Nidovirales, family coronaviridae, and subfamily orthocoranavirinae with 4 genera: alpha, beta, delta, and gamma coronaviruses. The Alpha CoVs and beta CoVs originated from bats and rodents while delta CoVs and gamma CoVs have their origins from avian species. More so, the beta CoVs including SARS-CoV-1 was isolated from bats in 1992 with civet cats being the intermediary host; MERS CoV was isolated from dometry camels in 2003; whereas the currently circulating SARS-CoV-2 formally referred to as 2019 novel coronavirus (2019-n CoV) causing COVID-19. SARS-CoV-2 has a plemorophic and circular structure with a diameter of about 60-140m. It can be transmitted from human-to-human by respiratory droplets from sneezing, coughing, and aerosols, with symptomatic people being the major source of transmission (WHO, 2020 & Li *et al,* 2020 as cited in Anjorin, 2020).

In December 2019, a cluster of pneumonia cases from an unknown virus surfaced in Wuhan, China. The disease named coronavirus disease 2019 (abbreviated as COVID -19), was described as an infectious disease that is caused by severe acute respiratory syndrome coronavirus 2. In early January, 2020, a virus was sequenced and identified as a novel coronavirus named SARS-CoV-2, the causative agent of COVID-19. By March 2020, the World Health Organization (WHO) declared the outbreak a pandemic with current numbers reaching over 1 million individuals infected and approximately 75,000 deaths globally (Ayres, 2020). However, with the global figures of coronvirus increasing at a rapid rate, it is now clear that no country is immuned from the disease or will be spared from its severe impact. According to Anjorin (2020), as the global trend on the outbreak of COVID-19 continues, the pandemic had its first wave between December and January 2020 in Asia, and then swept through to Europe and America, recording its

second wave from February till date. He noted further that there is great fear in Africa as the low number of cases is increasing which may culminate in the third wave of the pandemic going by the global spread. Ataguba (2020) notes that the COVID-19 pandemic increased awareness that a disease does not have a nationality and that we are all connected as one "*global nation*?

As of 13 April 2020, more than 1.7 million people have been infected and almost 85,000 people have lost their lives (WHO, 2020). COVID-19 continues to spread rapidly around the world. Almost every country has reported cases, but the burden is asymmetrically distributed (Craven, Sing & Wilson, 2020). The coronavirus disease 2019 (COVID -19) pandemic is exacting a huge toll on individuals, families, communities, and societies across the world. Daily lives have been profoundly changed, economies have fallen into recession, an many of the traditional social, economic, and public health safety nets that many people rely on in times of hardship have been put under unprecedented strain (WHO, 2020).

The novel coronavirus disease (Covid-19) has spread rapidly around the world since it was first identified in January, 2020. As countries scramble to contain the virus-and are affected by the efforts of other countries to do the same- the economic impacts grow (Evans, 2020). Covid-19 spreads at close range through respiratory droplets. According to Duerksen (2020), vigilance in communicating, monitoring, and tracing by these initiatives will be critical for mitigating the number of confirmed cases in many African megacities. The virus is believed to be transmitted from animals to humans at first, and then from humans to humans through airborne droplets of infected patients' fluids, which has led the virus to infect kill thousands of people and to raise international concern (AlTakarli, 2020).

Global Impact of Covid-19 Pandemic

COVID-19 is affecting the global economy. Virtually, every facets of the global space is under the overwhelming influence of the novel corona virus. For instance, Covid-19 has a strong impact on the health and well-being of people,

thereby affecting their day-to-day activities. It has a negative impact on human activities. There has been a dramatic decline in the global scene of economic activity. Covid-19 has an unprecedented impact on all countries as well as various sectors of the global economy. As a result of the Covid-19 pandemic, there has been an upsurge at the rate of job losses across the globe. Socially, the Covid-19 pandemic has resulted in social distancing, self-isolation and nation-wide lockdown in most countries of the world. With Covid-19 pandemic, government are enforcing unprecedented quarantines and social distancing measures to facilitates the containment and reduce transmission of the virus; efforts are proving to be effective. Health wise, the novel coronavirus disease (Covid-19) pandemic is placing significant strains on health systems, essential public services and communities globally.

According to Ozili and Arun (2020), the flow of goods through Global Supply Chains vastly reduced significant given that China was the world's largest manufacturer and exporter, and the Chinese government ordered the closure of major factories. Countries like Iran, Italy and France issued stay at home nationwide policies to control the spread of the virus, which had already caused multiple deaths and was putting pressure on the national public healthcare infrastructures. The Covid-19 pandemic will result in some job losses and salary cuts. More so, the global spread of the virus has overwhelmed health systems, and caused widespread social and economic disruption (WHO, 2020). The global pandemic is affecting a broad swath of international economic and trade activities, from services generally to tourism and hospitality, medical supplies and other global value chains, consumed electronics, and financial markets to energy, transportation, food, and a range of social activities, to name a few (Congressional Research Service, 2020).

The spread of COVID -19 is accelerating across the world. There are new cases of this disease on daily basis. The COVID-19 statistics as at 27th March showed total confirmed cases of 510,528 with 23,028 deaths and 122,232 recovery (Ozili & Arun, 2020), though it was admitted that

there may be unconfirmed cases which were never reported to the public health authorities. Cases of the new coronavirus have soared to more them a million worldwide in just over three months of its discovery. However, as at 28th August, 2020, a total of over 24.5 million cases has been recorded globally, with 17, 117, 850 recoveries and about 836, 346 deaths (worldometers.info/coronavirus/?utm_campaig n=homeAdvengas1?).

Worthy of note, is that the educational sector is not left out in this global dilemma. Schools at various levels have been shut down due to total lock down in most countries of the world. Schools in Nigeria as at the time of writing this report almost lost one academic session due to the pandemic. The only institutions operating are the ones already in the e-learning platform. No doubt, beyond the pains of the global pandemic is the gain of a new order of learning in the pandemic era.

Excerpt and Experiences from some African Countries

When coronavirus outbreak first began in Wuhan, China, its possible economic impact on Africa, through Sino-African trade and tourism ties, was immediately apparent. As the disease has transformed into a pandemic, however, its adverse economic impacts have also become globalized (Smith, 2020). The pandemic has a noticeable impact on global economic growth (Congressional Research Service, 2020).

The Covid-19 crisis is affecting the entire world economy and that of Africa. The coronavirus pandemic continues to take its toll on the African continent (Evans, 2020). However, the full economic impact of COVID-19 on the economies of countries in Africa cannot be ascertained at the moment as the situation unfolds (Ataguba, 2020). He noted further that containing the spread and reducing the economic impact of the COVID-19 pandemic will require a multipronged approach and co-operation from all parties, including substantial reductions in uncertainty levels, panic levels and disease transmission, the primary channels through which the economic impact manifests.

The coronavirus is placing severe stains on Africa's health, economic and security sectors.

As COVID-19 spreads in Africa, the effects could be devastating - even for a continent accustomed to battling infectious disease, COVID-19 endangers Africa lives and African economies, and efforts to control the disease will themselves come with an enormous economic and social price (Smith, 2020). According to Obaji (2020), with 11,000 cumulative cases confirmed in Africa as of today, coronavirus pandemic is expanding across the continent. More so, as the number of infections and deaths grow daily, so also does public anxiety, particularly in rural areas where primary health care is often lacking. The African continent, just like the rest of the world, is struggling to contain the spread of the virus.

The coronavirus outbreak has hit small businesses in Zimbabwe that import technologies and clothing from China; small business owners in Zimbabwe have begun quantifying their losses -the shutdown of factories in China is having a services knock-on effect on their profits. According to Sulaimon (2020), health authorities in Nigeria and Zimbabwe announced their first recorded deaths from the coronavirus that is spreading across the African continent. In line with this development, some African countries started putting in place restrictions on movement to try and stern the spread of the infections disease which can cause deadly respiratory problems. According to Muronzi (2020), indeed the threat of a major COVID-19 outbreak could not have come at a worse time for Zimbabwe, for instance, medicines are in short supply and depleted state coffers mean that the government is unable to purchase sufficient supplies for state-run medical facilities. According to Changonda (2020), the COVID-19 pandemic has left Zimbabwe in an extremely difficult situation. As of early April, the number of infections and deaths from the pandemic appeared low, although the available data is not necessary reliable.

South Africa, with the highest COVID-19 numbers in the region (the second-highest in the continent) has recently declared "national state of disaster". The country has also put in place a number of travel restrictions, including the closure of half of the country's land ports. From all indications, the African continent is

seriously under the plague of the Covid-19 pandemic.

Implications of Covid-19 Pandemic for Library and Information Science Educators

The COVID-19 pandemic is a wake-up call for ensuring that Library and Information Science education are provided using a pragmatic approach. There is an urgent need for a paradigm shift in the teaching of Library and Information Science, especially in developing countries. The pandemic has had implications for education and librarianship as a profession. Some of these implications are highlighted below:

➢ *Retraining in virtual reality (VR):* If Library and Information Science Educators (LISE) are to remain relevant in the post Covid-19 era, there is need for training and re-training in virtual reality. Virtual reality (VR) is the use of computer technology to create a stimulated environment, the adoption of virtual reality in learning and the acquisition of the requisite skills can only be realistic when the educators are repositioned. There is need for in-depth training on how to integrate virtual reality into teaching and learning in Nigerian library schools. This cannot be done in isolation, this call for a strong partnership and exchange programmes. Library and information practitioners must be willing and show readiness to adopt as well as adapt to modern approaches of learning.

➢ *Use of podcast in teaching and learning in library schools:* Library and Information Science Educators (LISE) could maximise the use of podcast in teaching library science students. Podcast is a series of digital audio files (voice recording), distributed over the internet, released with episodes and down loaded through web syndication. The are several audio formats available on the internet, but podcast differs from them because podcast files are identified and downloaded automatically as soon as they are released via special software, called pit catchers (Waweru & Odenyo, 2019).

➢ *Intensive engagement in exchange programmes:* library schools in Nigeria must be pragmatic in the area of exchange programmes. There are library schools in both developed and developing countries that has broken eve in the area of ICT in teaching and learning. Heads of library schools in Nigeria could initiate exchange programmes that will promote knowledge and expertise sharing.

➢ *Awareness on need for e-learning portals for library schools*: there is need to raise a strong awareness on the urgent need for e-learning portals for library schools in Nigeria. Heads of Library Schools should engage is strategic lobbying and advocacy programmes as means of creating strong awareness on the need for e-learning portals for library schools.

➢ *Intensive training and retraining of library educators:* in an effort to effectively reposition library schools in the post-pandemic era, there is need for intensive training and re-training of library educators. Library educators must be trained and retrained on how to use and integrate various ICT tools in teaching and learning process.

➢ *Provision of modern internet facility for library schools*: Electronic learning cannot be successful in the absence of modern internet facilities. Stakeholders therefore, must ensure that internet facilities are provided for the library schools without which the success and sustainability of the e-learning process will remain a mirage.

➢ *Integration of e-learning:* library school in Nigeria and other developing countries should integrate e-learning into their system. E-learning will make it easy for both the library educators and the librarians-in-training to engage in the learning process without disruption. There is need for an e-learning portal for each library schools.

➢ *Recruitment of ICT-compliant library educators:* one of the greatest challenges in library education is the resistance to

change, the new breed believes in change while the old breed believed in the status quo. However, to effectively reposition library schools for effective learning environment in the post-pandemic era, there is need to ensure that only ICT-compliant library educators are recruited. The transition into the new age of fourth industrial revolution can only be halted on the premise of low level of ICT-literacy.

➢ *Use of WhatsApp as a teaching/learning tool:* WhatsApp can be explored by Library and Information Science Educators (LISE) in teaching library science courses. When library and information science educators are adequately versed in the use of WhatsApp, it can be maximally deployed in exchanging of files between the learners and the instructor. The integration of WhatsApp into teaching and learning in library schools by library science educators is cost effective. The easy access to whatsApp application tool and the low cost and affordability of the tool makes it a very useful tool that library educators can utilize.

➢ *Need for synergy between librarianship and other professions:* there is need for a strong synergy between librarianship and other professions. The synergy should transcend beyond theories to practical realities.

➢ *Leveraging on digital platforms:* Library and Information Science Educators can leverage on the various digital learning platforms in teaching Library and Information Science students. Digital learning platforms such as Discussion Groups (Yahoo, Google), Microsoft Teams, Google classrooms etc can be explored by Library and Information Science Educators in teaching and learning.

Conclusion

E-learning must be embraced by Library and Information Science Educators. Moreover, beyond the post-pandemic experiences, we are already moving into a new age known as *fourth industrial revolution* era, the pandemic of Covid-19 has come to act as a catalyst into this new era. Repositioning of library schools is required to ensure that library and information science profession will remain a discipline to be reckoned. It is therefore expected that adequate funding should be provided to library schools by the parent institution, more so, heads of library schools should be proactive in the use of lobbying and advocacy to ensure that infrastructural facilities are provided for the laboratories of library schools. There is need for collaborative initiatives between stakeholders in library science profession to ensure that the drive for e-learning becomes a reality. Evidently, the result of this study indicates that library and information professionals must take pragmatic steps in ensuring that the library sector is adequately repositioned for effective service delivery in the post-pandemic period. Furthermore, library and information science educators should ensure that the curriculum used in library schools are to be intensively reviewed to meet the demands of contemporary society as well as this new which is otherwise known as "fourth industrial revolution". Also, stakeholders in the information sector should adopt a corporate synergy approach to ensure that the library is adequately funded. Thus, there is an urgent need to empirically unravel the impacts of the pandemic on the Library and Information Science profession. In line with this study, below are the expectations of Library and Information Science Educators towards repositioning of library schools for e-learning in post-pandemic era:

A. ***Possession of adequate ICT skills:*** library and information science educators must possess adequate and relevant ICT skill in order to be effective and proactive in the e-learning environment. It is imperative that library and information science educators possess skills relevant to the operation and manipulation of various ICT technologies to be able to maximise the digital learning platforms.

B. ***Availability of internet:*** enabled devices: library science educators must have internet-enabled devices such as laptop, ipad and smartphones in their possession. Possessing adequate skills is not enough; the relevant devices must be available to

the teachers/students. In line with this, heads of library schools can liaise with their heads of institutions to engage in sustainable partnership with different organisation in ensuring that these devices are provided to both teachers and students at subsidized rates.

C. ***Partnership with organization that provides technical support services:*** it is imperative that library and information science educators partners with organizations that provides maintenance and technical support services. Availability of relevant technological devices should be complemented with technical support services. Furthermore, Library and Information Science professionals can undergo trainings in the area of technical support and maintenance. One of the key strategies in managing the post-pandemic situation is through strong partnership. As noted by Kinfu, Alam and Achoki (2020), bringing all stakeholders together to ensure effective coordination pooling of resources and delivery of evidence-based interventions is imperative for any sustainable response to such pandemic situation.

D. ***Provision of relevant technological infrastructure:*** Heads of library schools should ensure that relevant technological infrastructure is provided in library schools. Strong and reliable interconnectivity should be provided in library schools. Lecturers and students on their own part must have access to relevant infrastructures without which they cannot effectively be part of the e-learning.

References

Adebayo, S. (2019). Effects of e-learning tools on student's academic performance in secondary schools in Ilorin metropolis, Nigeria. *Journal of Library, Science Education, and Learning Technology*, (1), 39 - 54.

AlTakarli, N. S. (2020). Emergence of COVID-19 infection: what is known and what is to be expected - Narrative Review Article. *Dubai Medical Journal*, DoI: 10.1159/0050606678.3, 13 - 18

Anjorin, A. A. (2020). The coronavirus disease 2019 (COVID-19) pandemic: a review and an update on case in Africa. *Asian Pacific Journal of Tropical Medicine.* Doi: 10.4103/1995-7645-281612.

Ataguba, J. E. (2020). Covid-19 pandemic, a war to be won: understanding its economic implications for Africa. Available online: https://link.springer.com/article/10.1007/s40258-020-00580-x

Ayere, M. A., Odera, F. Y.. & Agak, J. O. (2010). E-learning in secondary schools in Kenya: a case of the NEPAD e-schools. *Educational Research and Reviews*, 5 (5), 218 - 223

Ayres, J. S. (2020). Surviving Covid-19: a disease tolerance perspective. *Science Advance,* 6 (18), eabc1518. DoI:10.1126/Sciadv.abc1518.

Chagonda, T. (2020). Zimbabwe's shattered economy poses a serious challenge to fighting to COVID-19. Available online at: https://theconversation.com/zimbabwes-shattered-economy-poses-a-serious-challenge-to-fighting-covid-19-135066

Congressional Research Service (2020). Global economic effects of Covid-19. Available online at: https://fas.org/sgp/crs/row/R46270.pdf

Craven, M., Singhal, S. & Wilson, M. (2020). Covid-19: briefing note, April 13, 2020 -our latest perspectives on the coronavirus pandemic.

Duerksen, M. (2020). Innovations needed to prevent COVID-19 from catching fire in African cities. https://africacenter.org/spotlight/innovations-needed-prevent-covid-19-catching-fire-africa-cities/

Evans, D. (2020). The economic impact of Covid-19 in Africa: a round-up of this week's analysis. https://www.cgdev.org/blog/economic-impact-covid-19-africa-weeks-latest-analysis

Hadullo, K., Oboko, R. & Omwenga, E. (2018). Status of e-learning quality in Kenya: case of Jomo Kenyatha university of Agriculture and Technology postgraduate students. *International Review of Research in Open and Distributed Learning.* https://doi.org/10.19173/irrodl.v19il.3322

Jandric, P. (2020). Post digital research in the time of Covid-19. *Postdigital Science and Education*, 2, 233 - 238.

Kinfu, Y., Alam, U. & Achoki, T. (2020). Covid-19 pandemic in the African continent forecast of

cumulative cases, new infectious, and morality. https://doi.org/10.1101/2020.04.09.20059154.

Mtebe, J. S. (2014). Acceptance and use of e-learning solutions in higher education in east Africa Dissertations in Interactive Technology, number 18

Muronzi, C. (2020). How will we survive? Health woes deepen Zimbabwe Covid-19 fear. https//www.ajazeera.com/news/2020/03/survive-health-woes-deepen-zimbabwe-covid-19-fear-200323065933020.html.

Obaji, P. (2020). Efforts to contain coronavirus spread in Africa undermined by misinformation. https://reliefweb.int/report/south-africa/efforts-contain-coronavirus-spread-africa-undermined-misinformation

Owate, C. N, Afolabi, M. & Akanwa, P. C. (2017). Demographic variables and students use of e-learning resources in public secondary schools libraries in Rivers state of Nigeria. *International Journal of Educational Administration and Policy Studies,*

Ozili, P. & Arun, T. (2020). Spillover of COVID-19: impact on the global economy. Available online at: https://www.researchgate.net/publication/340236487_Spillover_of_COVID-19_impact_on_the_Global_Economy

Schurgers, J. Stan, G., and, S. & Labib, M. (2009). Opportunities and challenges of e-learning in Zambia: experiences and reflections. *Medical Journal of Zambia*, 36 (3), 119 -124

Sen, D. & Sarmah, M. (2014). Blended learning solution for the LIS education: AU perspective 9th convention PLANNER - 2014, Dibrugarh University, Assam, September 25-27, 2014.

Available Online at: http://ir.inflibnet.ac.in:8080/ir/bitstream/1944/1823/1/20.pdf

Sharifabadi, S. R. (2006). How digital libraries can support e-learning. *The Electronic Library*, 24 (3), 389 - 401. DoI: 10.1108/02640470610671231

Smith, S. (2020). Managing health and economic priorities as the COVID-19 pandemic spreads in Africa. https://africacenter.org/spotlight/managing-health-economic-priorities-covid-19-pandemic-spreads-africa/

Sulaimon, K. (2020). First coronavirus death in Nigeria and Zimbabwe as Covid-19 grips Africa. http:// www.rfi.fr./en/africa/20200323-first-coronovirus-deaths-in-Nigeria-and-Zimbabwe-as-covid-19-grips-africa

The, M. M. & Usagawa, T. (2018). Change in e-learning readiness and challenge for Myanmar higher education. *Creative Education,* 9, 1277 - 1286.

Waweru, J. & Odenyo, F. (2019). *Innovative content delivery for library patrons 2.0 retention.* In: Kwanya, T., Kiplang'at, J., Wamukoya, J. & Njiraine, D. (eds.). *Digital technologies for information and knowledge management.* Narobi, Kenya. The Technical University of Kenya, pp. 75-80.

World Health Organization (WHO) (2020). Covid -19 strategy update

World Health Organization Regional Office for Africa (WHO-AFRO) (2020). Covid-19: inoculating against the "infodemic" in Africa https://www.preventionweb.net/newa/view/70744.