Assessing Health and Education in the Context of COVID-19 Pandemic

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Abstract

The COVID-19 pandemic has impacted Africa and the global communities in various ways. This article looked into the impact of the pandemic on healthcare and education in Africa, especially countries with limited technology for education and weak healthcare systems, highlights the emergency and preparedness in the health and education sector. The COVID-19 pandemic has disrupted learning activities in the educational systems globally, especially in Africa. This has led to increase in out-of-school in many countries. In addition to the loss of learning activities, school closures will deprive many children of protection from home-related hazards such as domestic violence and child abuse. Others will lose access to the only nutritious meal of their day, and many will miss immunisations often given at school.

However, much of the situation has created an opportunity for the governments to catch up with the technological way of learning in the 21st century, thereby bridging the digital and education/literacy gap. The article emphasises the particular

concerns for care for persons with disabilities in preventing the spread of the virus.

Keywords: COVID-19, Health systems, Schooling, literacy gap.

Introduction

The distinct functions of education and health as the most critical drivers in promoting human development have been extensively researched (Bloom, 2007). Taking advantage of how the two factors interact, among other factors, greatly impacts our understanding of the development process. Taking advantage of how the two factors interact, among other factors, carry significant implications for our understanding of the development process and policy. Better education and better health are essential goals in themselves. Education is one of the most crucial viable investments for any country and a necessary key in achieving all the Sustainable Development Goals (SDGs). Education is one of the fundamental human rights of any citizen, and better or quality education tends to improve people's welfare (Bloom, 2007). As a key to development, education fosters and enhances work and life skills such as confidence and sociability. These individuals' skills promote economic growth on a societal level via increased productivity and, potentially, better governance (Hannum and Buchmann, 2006).

The controversy about whether better education leads to better health or better health leads to a better education has been on for a long time. The common notion about the controversy is that the more educated you are, the higher your income leads to better health. Nevertheless, better health could help people become more educated as we found in timely and complete vaccination of under-five children, and watch them grow. When the controversy is attended to logically, the government can decide whether to invest more in education or health care. Is the prevalence of diseases higher in persons with a low level of education and decreasing morbidity rates related to the increase in education? We will discuss the influence of COVID-19 on health, education, and man's environment.

The coronavirus pandemic discovered in 2019, also known as the COVID-19 pandemic, affected healthcare and educational systems globally. They exerted lots of pressure on the weak or inadequate health systems and led

to schools, colleges, and universities' closure. The World Health Organisation (WHO) categorised Nigeria as one of the 13 high-risk African countries to spread COVID-19. Nigeria is also among the vulnerable African nations, given the weak state of the healthcare systems (Amzat, Aminu, Kolo, Akinyele, Ogundairo and Danjibo, 2020; Marbot, 2020). There are still communities without healthcare facilities in Africa, apart from the scarcity of health workers (Amzat, 2011). Across the world, most governments, for the time being, closed all educational institutions to reduce the spread of COVID-19 (UNESCO, 2020). Closure of schools didn't affect students, teachers, and their families alone (Bao, Qu, Zhang and Hogan, (2020), but have severe economic and societal consequences (Aristovnik, Keržič, Ravšelj, Tomaževič and Umek, 2020; Lindzon, 2020; UNESCO, 20200 as well as access to healthcare (Feuer, 2020).

The COVID-19 pandemic poses significant risks to the continuity of healthcare services, especially in countries with a high prevalence of some diseases and weak and over-burdened health systems (Golin, Godfrey, Firth, Lee, Minior, Phelps, Raizes, Ake, and Siberry, 2020). It negatively impacts the health systems as healthcare workers are overwhelmed with the care of COVID-19 patients. Lynch and Pusey-Murray (2021) reported that the COVID-19 pandemic drastically affected many countries' overburdened public health systems. Health workers are the direct frontline soldiers in the battle against COVID-19 (Lynch &Okachi, 2020) and are understandably exhausted. Many health workers are at elevated risk because of their high exposure to those infected with the virus. Many hospitals are quaking on the edge of being overwhelmed – or already there. Still, more people than ever need medical care for complications of COVID-19 (Cleveland Clinic, 2020). Some lessons from the epidemic were the need for sustainable investment in healthcare systems and the importance of developing resilient healthcare systems. It also reinforces the need for preparedness in crisis response and health emergencies (Lynch and Pusey-Murray, 2021).

School closures caused by the pandemic exacerbated existing inequalities, and that children who were already most at risk of being excluded from a quality education have been most affected (Human Rights Watch, 2020). The COVID-19 pandemic is revolutionising digital and online education globally. Still, Nigeria's children in rural and educationally or medically underserved communities are left behind as they are not equipped to adapt or transition to the new learning methods (Amorighoye, 2020).

After schools were closed across the continent in March 2020, adopting eLearning educational technology is the most rapid response to salvage the situation. However, many children received no education with the new teaching platform, and many received no instruction, feedback, or interaction with their teachers (Human Rights Watch, 2020). Even for those engaged in online or distance learning, students frequently studied fewer topics or less content. It was reported that during this period, many students shared feelings of stress, anxiety, isolation, and depression, which they linked to the lack of contact with their school community (Human Rights Watch, 2020).

The implications of these closures are enormous. In addition to the loss of learning activities, school closures will deprive many children of protection from home-related hazards such as domestic violence and child abuse. Others will lose access to the only nutritious meal of their day, and many will miss immunisations often given at school. Furthermore, school closures deprive children and adolescents of social and emotional experiences essential for their development and wellbeing.

In the battle against the spread of the disease, some COVID-19 preventive measures are put in place, which includes lockdown, restriction of movement, the shutdown of cities and border closures, which resulted in interruptions in testing, treatment, and prevention of other diseases (Amzat, Aminu, Kolo, Akinyele, Ogundairo and Danjibo, 2020; Ayowole, Ogbonna, Amoo, Babarinde, Nwafor, Enebeli, Sokomba, Adebayo and Ilesanmi, 2020). The pandemic has caused global social disruption by limiting international social relations. According to Amzat and Razum (2018), "the idea of 'social distancing' negates regular social interaction, which is the bedrock of human society." The pandemic, which is of global health importance, also disrupts the usual norms of close physical contact since the disease can be transmitted through contact with individuals who already contracted the disease (Amzat *et al*., 2020). The usual norms of close physical contact and interaction are one the benefits in school attendance.

The context

Although all sectors of the economy were affected by the COVID-19 pandemic, education has been hit hard; the lockdown due to the pandemic

has disrupted millions of school children and youth worldwide (Education Cannot Wait [ECW], 2020). Although health, water and sanitation are critical and essential needs responded to during disasters and pandemics like COVID-19, education or educational needs cannot be abandoned or set aside because they all have equal detrimental impacts if left unattended. The "multiplying effect" of the global coronavirus pandemic is that interruptions to education at all levels have long term implications for all students, especially for the most vulnerable (ECW, 2020). Part of the argument here was pupils whose foundational learning was not robust would be at risk of regression in the face of prolonged interruptions to education systems if not prevented early. Also, millions of children already deprived of the right to education, mostly girls, are vulnerable to health and wellbeing risks (both psychosocial and physical) during disasters and pandemics such as COVID-19 (ECW, 2020). According to UNESCO, the closure of schools in more than 180 countries due to COVID-19 has "laid bare inequalities in education, deficiencies in remote learning, the cost of the digital divide, as well as the important role schools play in student health and wellbeing" (UNESCO, 2020). The time has come for governments worldwide to reassess the current education or learning systems to meet these challenges. It is a once in a generation opportunity to improve education, alongside economies, to fight the current crisis. It is high time for education leaders and other stakeholders to use the period of disruption in our educational systems to ensure what people learn is relevant to their lives.

Health education approach to COVID-19 pandemic

Undoubtedly, the global spread of coronavirus disease (COVID-19) has been a significant threat to public health as it has affected people worldwide in various unprecedented ways, both personally and professionally. The global community has implemented several strategies worldwide to limit the spread of COVID-19 infection, such as social distancing and local or national stay-at-home mandates. Although the strategies were necessary, it has resulted not only in the disruption of people's everyday routines or daily life in different ways but also significant financial challenges to our society and economy across almost all sectors, including health care (Panahi and Borna, 2014; Al-Balas *et al.*, 2020; Badawy and Radovic, 2020).

Due to the global COVID-19 crisis, health education has been underscored, as the pandemic has pushed the global community to move towards digital approaches to optimise health education (Badawy and Radovic, 2020). In general, during clinical training, students receive both in-class theoretical lectures and seminars and in-hospital clinical rotations before the era of COVID-19, resulting in the adoption of distance e-Learning as a modality of teaching within medical schools (Al-Balas *et al.*, 2020). Distance eLearning in health education avails a suitable alternative to traditional learning to deliver high-quality education. However, the biggest challenge is that it heavily relies on the availability of essential infrastructures and efficient institutional strategies in its integration (Panahi and Borna, 2014; Al-Balas *et al.*, 2020).

Health education has transformed across the board due to the COVID-19 pandemic, with medical education also equally transformed in a matter of months by the telehealth revolution (Daodu *et al.*, 2020). The adoption of telehealth has allowed medical learners to observe and actively participate in patient care remotely during the COVID-19 crisis (Farber, 2020; Rasmussen *et al.*, 2020). There is extensive evidence in literature arguing for a renewed emphasis on the importance of telehealth in discerning medical history along with a perceptive observation-based exam (Panahi and Borna, 2014; Al-Balas *et al.*, 2020; Badawy and Radovic, 2020; Daodu *et al.*, 2020; Farber, 2020; Rasmussen *et al.*, 2020). Health education through online learning during the COVID-19 era has availed students and residents with opportunities to quickly learn the fundamentals of telehealthcare and, in some instances, make valuable suggestions from their perspective as digital natives (Klasen *et al.*, 2020). Undoubtedly, telehealth will be a significant part of these learners' clinical practices in the future.

Africa countries and national online curriculum

Does it exist, or are contents adapted to children and adolescents' indigenous children, migrants and refugees in African countries when it comes to the national online curriculum? Education systems around the world were stress-tested by the COVID-19 pandemic. Due to the crisis, 190 countries faced complete or partial school closures, which resulted in more than 1.7 billion students being affected (UNICEF, 2020b). Hundreds of millions of learners were forced to stay home, forcing education policymakers to migrate from traditional teaching methods and thrive to

ensure that classes continue and that the most vulnerable do not get left behind.

It is with no doubt that, even before the pandemic, children's learning in the middle-and low-income countries were already in crisis, with half of the 10-year-olds unable to understand a simple written sentence and more than a quarter billion children out of school (UNESCO, 2020). . The pandemic has only honed these inequities with the latest reported statistics, hitting school children in poorer countries particularly hard. However, across the globe, national governments worldwide have been quick to implement remote learning, mainly guided by their wealth.

School children in low- and lower-middle-income countries lost about four months of schooling since the start of the pandemic, compared to an average of six weeks among high-income countries (UNESCO, 2020). Findings from surveys on national education responses to COVID-19 from 149 countries between July and October 2020 showed that school children in low- and lower-middle-income countries were less likely to have access to remote learning or to be monitored on a day-to-day basis by teachers and were more likely to have delays in their schools reopening (UNESCO, 2020).

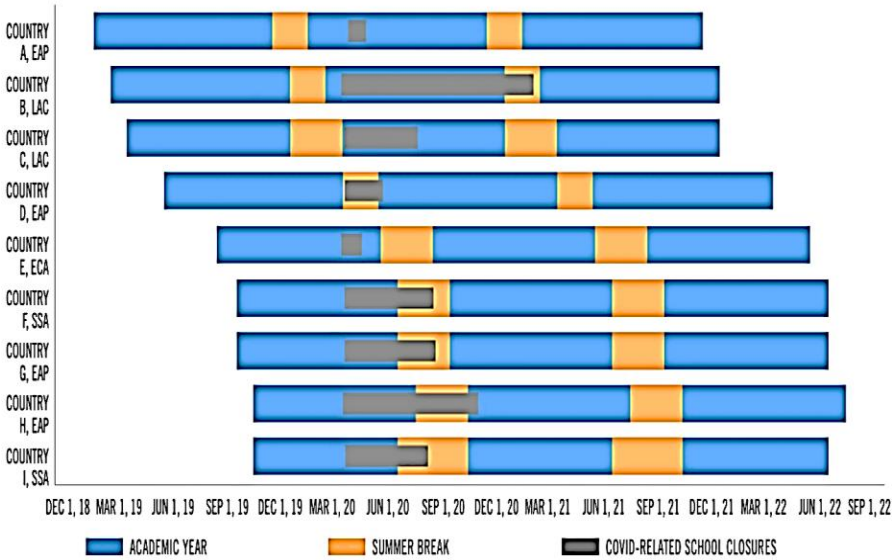

Figure 1: School closures have varied by length, start date and moment in the academic year – evidence from selected countries. (UNESCO, 2020).

Learning assessments is vital for measuring children's learning outcome and to monitor what they've learnt effectively. In all, 14% of countries argued that student learning progress was not tracked by teachers or schools and significant differences in monitoring practices were cited across socio-economic groups (Panahi and Borna, 2014; Al-Balas *et al.*, 2020; Badawy and Radovic, 2020; Daodu *et al.*, 2020; Klasen *et al.*, 2020; UNESCO, 2020). Only 3% of high-income countries reported that teachers do not track student learning progress, compared to 25% of low-income countries and 27% of lower-middle-income countries (Figure 1).

The vast pool of literature accessed reported: limited access of most vulnerable children to online learning platforms; the majority of the low-middle income countries do not have online curriculum, nor content adapted to children and adolescents with disabilities, indigenous children, migrants and refugees; limited knowledge and capacity of teachers to use online platforms and distance learning resources and lack of tools to monitor and evaluate the progress of learning outcomes (Panahi and Borna, 2014; Al-Balas *et al.*, 2020; Badawy and Radovic, 2020; Daodu *et al.*, 2020; Farber, 2020; Klasen *et al.*, 2020; Rasmussen *et al.*, 2020; UNESCO *et al.*, 2020; U. and the World Bank and UNESCO, 2020).

Environmental education in achieving sustainable development goals during COVID 19 pandemic – environmental education and sustainable development goals

Sustainable Development Goal (SDG) 4 ensures inclusive and equitable quality education and promotes lifelong learning opportunities for all. Achieving inclusive and quality education for all reaffirms the belief that education is one of the most powerful and proven vehicles for sustainable development. This goal ensures that all girls and boys complete free primary and secondary schooling by 2030. It also aims to provide equal access to affordable vocational training and eliminate gender and wealth disparities to achieve universal access to a quality higher education. It also seeks to ensure that all learners acquire the knowledge and skills needed to promote sustainable development. This includes education for sustainable development and lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and cultural diversity appreciation.

This goal cut across all the SDGs horizontally and emerged as one of the most important goals for achieving SDGs. As education and human resource development is the key to this goal, the different areas related to education viz; education for sustainable development, environmental education, peace education, vocational education, higher education, etc. for everyone cutting across all sections of society is essential for success

Goals and objectives of environmental education

The main goal of environmental education is to empower citizens to bring about change within their societies. With the help of creativity and cooperation, learning can ensure that all species are in equilibrium with their environment. Furthermore, one can increase public awareness and knowledge about current environmental issues or problems through environmental health education. This will equip the public with the necessary skills to make informed decisions and take responsible action. Environmental education will hence foster:

i. Knowledge: Society will be aware of its environment, its issues, and humanity's responsibility. This knowledge is fundamental to come up with "reasoned but rapid decision making"
ii. Awareness: Becoming aware of serious environmental problems is the first step towards action. This can, in turn, pose the necessary pressures for change to take place
iii. Skills: To act effectively, individuals and social groups need to acquire the necessary skills to favour the environment regarding ecological, political, economic, social, aesthetic, and educational factors. For this to function effectively, mutual respect between all members of society is required while trying to eliminate any practices that may harm the environment
iv. Attitudes: Active participation in protecting the environment can only be brought about if individuals have strong values and concern and enough motivation to act towards preserving the environment and
v. Participation: To feel the need to act and solve environmental problems for a more sustainable future.

The content and methods of environmental health education and education for sustainable development are based on the following fundamental principles:

- Sustainability (global and local use of natural resources without a contemporaneous decrease in biodiversity and regenerative capacity).
- Prevention (lack of reliable information about the environmental effects of various human activities should be considered at all levels of planning, and activities causing environmental degradation should be avoided).
- Environmental (protection of the integrity of ecosystems, carrying capacity of the biosphere, biodiversity, quality of the environment, environmental impact assessment, etc.).
- Economic (illustrating the imperative of sustainable development knowledge for effective economic management, efficient use of resources, sustainable strategic management of territories, resources and economic sectors, etc.).
- Social (education in human rights, conflict studies, the safety of living, ethnography, anthropology, social and human ecology, etc.).

The sustainable development goals and COVID-19

As the COVID-19 crisis continues to unfold, it is clear that the pandemic will severely impact the Sustainable Development Goals (SDGs). This unprecedented crisis has implications for public health and economics, social stability, and national and global politics, and it has wide-ranging effects on the SDGs.

The Sustainable Development Goals are needed more than ever. Their bedrock principles of social inclusion, universal access to public services, and global cooperation are the guideposts for fighting COVID-19 and the investment-led recovery the world should adopt to overcome the economic crisis caused by the pandemic.

The pandemic has exposed that gains made to address poverty, hunger, good health, and wellbeing may face serious setbacks unless the global community urgently addresses the global environmental threats that have a similar capacity to gravely undermine the systems that enable humanity and the planet to survive and thrive.

Future-proofing sustainable recovery and sustainable development are only possible when good environmental responses, plans, and policies are given

the importance they deserve. COVID-19 is proving fatal for the Sustainable Development Goals. Hard-earned progress on the SDGs on poverty, hunger, health, and inequality, among others, could be reversed. And there is a real risk that the SDGs (and their underlying commitment to "leave no one behind") could become a casualty of policy responses to the pandemic.

Governments should take sustainability more seriously

Under strict lockdown measures – such as shutting down factories, offices, and airlines' grounding – there has been a record fall in global carbon emissions. But this has come at a huge economic cost. The environmental gains are likely to last just a short while, with limited impact on the concentration of carbon dioxide accumulated in the atmosphere over decades.

When governments take sustainability more seriously we make more structural changes to economic activity, mobility, and production and consumption patterns. And only then can we bring down emissions to more manageable, globally agreed levels as endorsed in Agenda 2030 and international climate agreements. Economic recovery must have greener technologies at its heart.

Governments should speed up the progressive realisation of universal goals

The SDGs are meant to provide benefits to all and reach the furthest behind first. And so, universal goals – such as SDG 3 (good health and wellbeing), SDG 4 (quality education), SDG 6 (clean water and sanitation), and SDG 7 (affordable and clean energy) – need to be progressively realised at the country level to increase service provision. This is currently inadequate to serve the needs of all, especially the poorest.

The COVID-19 crisis has exacerbated cracks in public health systems to deliver critical services in high-income countries like the US and low-and middle-income countries such as India and Nigeria. System-strengthening approaches within the health sector (such as the increased capacity for staff to facilitate prevention, response, early warning, and manage health risks) alongside improved coordination of actors across different health system levels will help COVID-19 recovery and ensure progressive universalism.

Coupled with such strengthening, governments will make more progress in serving all groups across some SDGs in water and sanitation, education, and energy.

Government investments should cut across sectors

Significant financial resources are channelled into getting economies started, expand social protection and unemployment benefits, and reopen schools globally. Societies and economies will better cope with the crisis if the gains from these investments cut across sectors. As schools reopen, policymakers need to consider how the education system, for instance, can support the health system response.

Bringing education and health planners together will help ensure alignment and identify creative ideas as the crisis response evolves. This cross-cutting governmental work will also break siloed policy-making practices. Health and education actors often act alone without regard to how their actions could positively or negatively affect other SDGs.

Non-governmental actors should share responsibilities for achieving the SDGs

Achieving the SDGs is a shared responsibility, and not of governments alone. It is important to look at other key groups that can deliver these.

- Healthcare companies, for instance, have been helping to ease the COVID-19 crisis by donating Personal Protective Equipment (PPE), hospital supplies and providing support for COVID-19 testing for hospitals and medical service providers around the world. Other companies have also repurposed manufacturing processes to begin making PPE, sanitisers, disinfectants and ventilators.
- Around 1.2 billion learners – nearly 70% of total enrolled learners – worldwide have been affected by the coronavirus outbreak. Leading technology providers are partnering with governments to ensure education and learning is continued for students. Across the UK, for example, IBM and Cisco have offered teachers free access to video conferencing to support remote teaching in up to 24,000 schools.
- Equally important for those outside the policy arena, it is our responsibility to scrutinise governmental decisions and actions on

crisis response and recovery from the SDGs perspective. Where synergies exist, they should be explored and maximised.

Access of most vulnerable children to online learning platforms

Alwang and colleagues (2001) define vulnerability as the likelihood of experiencing a loss in the future relative to some level of welfare. A household's vulnerability is characterised by poverty due to its inability to access assets and low ability to respond to risks. Many studies explain child vulnerability to disaster, disability, and how children are affected by HIV/AIDS in sub-Saharan Africa. However, the vulnerability can also mean a young person staying in poor communities, overcrowded and mentally and physically affected. Also, unemployment and high crime rates can be other characteristics of vulnerable populations (Griggs *et al.*, 2008; Pinoncely, 2016).

On the other hand, online learning platforms are new methods and tools that use technology to improve the various stages of institutional, educational processes. One of the eLearning applications uses a network made up of servers for the internet and computers. Online learning platforms are essential because they enable learning anywhere at any time, regardless of geographical barriers. Also, teachers are privileged to share materials in videos, slide shows, word documents and PDFs. Communication between students and instructors is enhanced due to the ability to conduct webinars (live online classes), thus enhancing interactions that would exist physically in the classroom. The implementation of online learning platforms further comes with the advantage of being able to record the classes, which allows students to replay the lectures to enhance further learning (Arkorful*et al.*, 2014; Brown *et al.*, 2001; Epignosis LLC, 2014; Hemsley, 2002; Sadler-Smith; 2000 & Singh, 2001).

The COVID-19 pandemic outbreak introduced online learning and remote teaching. This is because total lockdowns were imposed to contain the virus's spread, which also led to schools' closure. As a result, estimations indicate that globally, more than 376.9 million learners are affected due to the closing of schools, with Africa having 288 million learners out of school (Dhawan, 2020; SDG Centre for Africa and Sustainable Development Solutions Networks, 2020; Huang *et al.*, 2020).

This has a far-reaching impact on the progression of the learners' learning outcomes in terms of interrupted finishing of schools and widened inequality, and delayed development of skills both socially and emotionally (The Economist, 2020). To enable the children to continue learning during the pandemic, alternative approaches have been put in place. This approach includes online teaching (via platforms like ZOOM, Skype, Adobe Connect, Microsoft Teams, and Google Hangouts), accessing learning materials digitally, teaching via radios and televisions, and distributing printed materials (Dhawan, 2020; Huang *et al*., 2020).

Even though numerous challenges were noted worldwide as the online learning platforms were being applied, the effects were more felt in the African continent. This is due to Africa's education system's nature of varying levels, stakeholders, and problems. For example, there are government and private institutions which continue to face different problems. Also, the challenges faced by rural schools are very different from those faced by urban schools (eLearning Africa, 2020). These challenges have worsened during the COVID-19 period.

Additionally, African governments were forced to close the education institutions early due to the pandemic, with little warning and planning on what to do after the closure. As a result, different learning institutions adopted various online learning tools based on their resources. Universities, for instance, were left to use their devices, and their response differed from one university to the other. On the other hand, primary and secondary schools prioritised continuing learners writing, leaving certificate examinations. Additionally, many of the governments provided television and radio educational programmes, of which they could sometimes partner with private sector institutions though the organisation was poor (eLearning Africa, 2020).

Although online learning systems aim to enhance continuous learning for all children, this wasn't the case now. Often, the vulnerable children (those with disabilities, children from minority ethnic groups, struggling learners, children on the move – migrant, refugee and internally displaced children – children from hard-to-reach rural as well as most impoverished areas and girls charged to care for sick family members, may find it difficult access and benefit from these opportunities. Moreover, these vulnerabilities are likely to increase during health emergencies, as observed during the COVID-19 period where children's access to education was entirely

jeopardised. Thus, causing disparities and increased inequality in the education attainment amongst learners (Association for the Development of Education in Africa (ADEA), 2020; The United Nations Children's Fund (UNICEF), 2020; United Nations, n.d.). This situation undermines the 2030 Agenda for Sustainable Development of 'leaving no one behind,' as well as the Sustainable Development Goal (SDG) 4 to ensure inclusive and equitable quality education and facilitate lifelong learning opportunities for all (ADEA, 2020; UNICEF, 2020).

Various literature indicates the experiences of the most vulnerable children towards accessing the online learning platforms. One of the impediments to online learning is accessibility. According to UNICEF (2020), globally, at least a third of the world's school children (463 million) could not access remote learning when schools closed during the COVID-19 pandemic. Moreover, East, as well as Southern Africa, had 67 million (49%), West and Central Africa had 54 million (48%), and the Middle East and North Africa had 37 million (40%), a minimum number of school children unable to access remote learning.

Other authors indicated factors that impacted accessibility: lack of accessibility to technology, inaccessibility to studying materials, inaccessibility to electricity, internet and connectivity, among others (Garbe*et al*., 2020; Karakara*et al*., 2019; Zhong, 2020; eLearning Africa 2020). Additionally, even though some governments quickly introduced learning programmes on televisions and radios, the most vulnerable children who did not own such devices were not able to access the lessons, which has the potential of creating a social challenge of 'digital divide' in education the education between those accessing technology, television, and those without (eLearning Africa, 2020; World Vision, 2020). Karakara and colleagues (2019), for instance, indicated that a household that accessed ICTs such as computers enhanced a child's ability to learn at home, thus, reducing the risk of becoming educationally disadvantaged.

Additionally, an unsuitable home learning environment was a critical obstacle for learners during the school shutdown (eLearning Africa, 2020). Kapasia*et al*. (2020), in their study, found that 12.6% of the participants lacked a favourable study environment at home due to the absence of a separate study room. This is coupled with other competing factors at home, such as pressure to do chores, being forced to work, lack of support in using the online system, among others (UNICEF, 2020).

Access to the online learning platforms at home by vulnerable children is sometimes affected by the inability to be supported by their parents due to being ill-equipped with remote learning modalities such as cell phones/laptops, especially in poor rural communities. Also, poor households with parents having attained low education levels, as well as lack experience in online systems or they as parents have a disability, have higher chances of failing to support their children's learning at home (Aliyyah*et al*., 2020; ADEA, 2020; eLearning Africa, 2020; UNICEF,2020; World Vision, 2020). Other aspects that exacerbate the problem of the online learning process include poverty since high costs of buying data are involved in participating in the learning activities; and lack of prior knowledge limited exposure to the online mode of the online method of learning (Adarkwah, 2020; Kapasia*et al*., 2020**)**.

Knowledge and capacity of teachers to use online platforms and distance learning resources

As the COVID-19 pandemic set in and schools faced closure, UNESCO estimates over 63 million teachers being affected. Hence, teachers of different levels were immediately tasked to become designers and tutors by implementing distance learning tools (Hodges *et al*., 2020; United Nations [UN], 2020). This means that teachers had to redirect their focus on using online systems and materials to replace their face-to-face classes (Bates, 2020). This challenge has been well embraced as most teachers and various learning institutions have adopted computer-based teaching and learning strategies to replace traditional classrooms. For example, lessons were provided through interactive audios, videoconferencing and online learning platforms like zoom, in addition to studying materials shared plus worksheets via school-based intranets and messaging platforms. Radio and televisions are being used for countries with under-resourced communities and lack technical infrastructure to broadcast school lessons and educational materials (ADEA, 2020; International Labour Organisation (ILO) Sectoral Brief, 2020).

Although various online platforms and distance learning resources have been implemented, teachers' knowledge and capacity from developing countries to cope with the new teaching norm are still questioned. Current research shows that a lack of skills hinders teachers' effectiveness in preparing and delivering their classes from home, sufficient guidance, training, or resources and equipment (Hodges et al. 2020; Huang *et al*., 2020;

UN, 2020). For example, Gyampoh and colleagues (2020) indicate that with regards to skills, competencies and knowledge, only 33.3% of the respondents noted having technical skills to provide online teaching by preparing documents in word processing, PowerPoint, and spreadsheet plus search engine. On the contrary, most participants (66.4%) possessed limited competence, skills and knowledge required in teaching online. Only 42.9% of the participants used the blended approach to pedagogical skills by sending students materials in advance before doing online discussions. The majority, 57.1%, of the participants were unable to talk about the pedagogical skills they used in their interaction with students online.

Additionally, findings on soft skills and managerial skills were interesting. Although teachers can communicate and manage well their learning environments during face-to-face classrooms, 70% of the respondents noted that communication and management of their online classes with students are challenging, especially when using Zoom platforms (Gyampoh*et al*., 2020). Even with the numerous tips and tricks' given to the teachers on how they can use the online platforms, little effort is put towards contextualising the teaching tactics that would likely work based on the knowledge required by different learners (Rapanta*et al*., 2020).

Also, online and distance learning platforms require a wide range of information technology equipment to succeed. Unfortunately, this was the most significant challenge for most teachers. For instance, Gyampoh and colleagues (2020) found that even though almost all respondents noted having some kind of resources regarding device and hardware, only 40% had personal smartphones, laptops, and an external hard drive. The rest, 60 per cent, had smartphones only. This situation can affect effective teaching outcomes and affect education quality (Wang *et al*., 2020).

The teachers' ability to use online platforms and distance learning tools is constrained by adequate preparedness. According to ADEA (2020), teaching from home requires a different pedagogical approach, yet learning institutions have not adequately prepared their teachers for such a new role. Less clarity exists on how teachers will be capacitated to adopt and use ICT solutions and the lack of adequate guidelines for assessing learners beyond the given homework and assignments. Also, there is a lack of clarity on the formats for monitoring learners to complete their assignments (ADEA, 2020). For example, Basilaia and Kvavadze (2020) state that online learning requires examination and assignments re-arrangement to the open

book principle. Yet, its development and popularity at the moment are at a lesser level. Therefore, having assignments for every subject prepared in such a manner requires extra effort as plagiarism has to be checked, cheating avoided, and a new grading system adopted. Also, teachers' preparedness is affected by a lack of time to learn and organise their learning content to suit the online learning formatting since more time is required.

Three interconnected factors influence teachers' motivation to successfully provide online teaching, including the teacher's skill to conduct online learning, the teacher's passion, plus the teacher's duties and responsibilities (Aliyyah*et al*., 2020). Still, findings from a survey by eLearning Africa (2020) indicate that most respondents did not receive financial assistance for teaching and learning tools to support them in continued teaching during the Covid pandemic, which could have affected their capacity to use the online platforms adequately. Reports also indicate that teachers were directed by some school authorities to use personal resources to conduct online teaching with the expectation of being reimbursed at a later date. As a result, private school teachers devised strategies to reduce classroom time to save internet data consumption and deal with power supply issues (Akinwumi and Itobore, 2020).

Staff readiness is another factor to influence the capacity to use online platforms and distance learning resources. Study findings on the percentages of teachers' and schools' readiness for distance education due to the COVID-19 pandemic show that when asked if they were ready to conduct distance learning education, nearly 99 per cent of the participants said "Yes". Nonetheless, 69% agreed when asked if they were prepared to use the printed module as a tool for distance learning; and 58% said being ready to use the internet online learning materials, including YouTube, Ted Talk and Khan Academy and learning management systems such as Google Classroom, Edmodo, Zoom and Canvas among others. On the other hand, the responses were unequally divided when the respondents were asked if they are well-equipped and prepared for distance learning. This means that the absence of equipment, facilities, and capacity building for distance learning education hampers teachers' ability to teach using the online system and distance learning resources (Alea *et al*., 2020).

The politics of resisting also have impacted the teacher's capacity to use online learning systems. For example, Czerniewicz (2020) notes that during

COVID-19, the educational institution's decisions to utilise "online" and "blended learning" is overly politicised. There have been extreme arguments that one learning mode is better than others. Consequently, online and blended learning has been distorted by teachers with insufficient computer skills (Zhang *et al*., 2020). Some teachers still consider that face-to-face learning is superior to online and blended learning.

In contrast, others believe that it takes a longer time to create online courses than conventional teaching methods (Bacow, Bowen, Guthrie, Lack, & Long, 2012). According to Ertmer and Otternbreit-Leftwich (2019) and Lilllejord, Børte and Ruud (2018), people's ability to accept change is a critical prerequisite for effective technology integration provides students with opportunities to learn and apply the skills needed in the 21st century. On the other hand, the lack of acceptance for online teaching is an obstacle to effective online learning (Turk and Cherney, 2016; World Bank, 2020b). Hence, there is a need for massive sensitisation of education institutions to use online systems to teach in the 21st century.

Alea and colleagues (2020) noted other challenges teachers face in providing distance learning education: difficulties in establishing communication with students, unstable internet access intended for enhancing distance learning, and challenges in using any Learning Management System (LMS). Also, difficulties in using social media, emails and other distance learning education channels, and problems in facilitating involvement, besides utilising features in online courses, managing time when conducting lessons, were noted.

Offline initiatives to respond to the educational needs of students without internet access.

The Ministries of Education and their partners in different countries have created several offline projects to ensure that during the COVID-19 pandemic lockdown, the most vulnerable children who cannot access the internet can continue learning. These online strategies vary depending on the country and the differences in the contexts. The most common ones are delivering education via mass media tools like radios and televisions and distributing home learning kits such as books, exercise books, etcetera. This provides an excellent opportunity for teachers to involve children through a medium appealing to them, although more concentration is required

when using a radio (Akinwumi and Itobore, 2020; UNICEF, 2020; United Nations High Commissioner for Refugees [UNHCR], 2020).

Different countries, sometimes with the assistance of other partners, have used offline initiatives to respond to students' learning needs. For instance, South Africa's Department of Education provided virtual classes through television and radio stations to deliver exclusive virtual classes to learners during the lockdown. Televisions and radios are offline initiatives whereby no internet connectivity is required, thus enhancing education for all. Mhlanga and Moloi (2020) summarise these online platforms, as indicated in the table below:

Table 1: Online learning platforms adopted in South Africa during the lockdown

Tools Used	Description	Connectivity	Platform	Conditions of Use	Target Group
Television(SABC, DSTV, E.tv)	Live TV lessons delivered by Teachers to learners	Offline	Television Desktop	Free (lockdown)	Primary Secondary
Radio (SABC)	Live lessons delivered to learners by teachers	Offline	Radio/desktop	Free(lockdown)	Primary Secondary

Source: Mhlanga and Moloi (2020)

For Rwanda's government to keep more than its 3 million learners out of school due to COVID-19 studying, the country resorted to using the radio, one of its greatest available means of teaching. Over 100 radio scripts worldwide focused on basic literacy and numeracy were found by UNICEF and could be modified to fit Rwanda's education curriculum. UNICEF, after that, collaborated with partners to develop and air these classes throughout the country, together with the Rwanda Broadcasting Agency (UNICEF, 2020).

In Malawi, UNICEF Malawi helps the Government of Malawi develop the continuity of learning programmes through deliveries on radio, television, and online. This supports over six million school-age Malawi children staying at home due to school closure due to Covid- 19 (UNICEF, 2020).
The government of Mongolia has been using TV as the primary platform for online learning. As a result, UNICEF has partnered with the

government to develop pre-primary and primary education television lessons in the Tuvan and Kazakh languages and reach out to children from ethnic minority groups. Additionally, UNICEF collaborates with the local government and has produced learning materials offline. Children in primary schools in remote communities with insufficient TV and/or internet connectivity to learn are helped (UNICEF, 2020). This is vital in ensuring that no child is left behind.

In Cote d'Ivoire, the governments use paper-based methods with native service providers to provide primary and lower secondary school education for children. In Nigeria, radios and television are still used to supplement the online medium. Partnerships have been formed amongst Plan CEIBAL and the telecommunications company ANTEL, as in Uruguay, to provide accessibility to every government learning material without consuming any data (UNICEF, 2020).

In Timor-Leste, the "Eskolaba Uma" or "School Goes Home" distance learning programme enables children's continued learning via TV, radio, and online platforms. Also, UNICEF has collaborated with Telenor Children by giving free access to learning materials for children in remote communities lacking accessibility to TV, radio in addition to the internet to 600,000 cell phone users. On the other hand, countries like Somalia use recorded offline lessons uploaded to solar-powered tablets and available to children. Lessons in video form are also transmitted via radio and TV (UNICEF, 2020). United Nations High Commissioner for Refugees (2020) notes that most families may not have radios or TV sets of their own regarding refugees who are part of the vulnerable groups. Hence, UNHCR or partners may either record broadcasts or obtain copies of recordings circulated through mobile phones.

United Nations High Commissioner for Refugees (2020) suggests other offline initiatives in responding to students' education needs lacking the internet, especially those in the refugee camps, as printing and distributing learning materials. It further suggests lending textbooks from schools to families per subject over time so as for learners to keep pace with their syllabus. Distributing listed learning activities that are context-based, age-appropriate, aligned to the appropriate curriculum and sensitive to utilise the resources likely to be available at people's homes or immediate surroundings were suggested.

While much effort has been made with the introduction of offline systems to encourage children whose families have fewer resources, those in rural communities, the migrants, refugees and returnees, indigenous persons plus children having disabilities to have access to education, a gap still exist in the available options for equity as well as accessibility for all to be achieved (UNICEF, 2020). For example, some families do not have radios, TV sets, or even phones which are the common mediums adopted by governments to enhance continued learning. Hence, accessibility to the learning materials remains a problem.

Conclusion and Recommendations

The coronavirus disease pandemic affected education and health systems globally, which lead to the closure of schools, colleges, and universities. The pandemic also negatively impacts the healthcare systems as healthcare workers are at elevated risk because of their high risk of exposure to those infected with the virus. Most governments were forced to close educational institutions early due to the pandemic and reduce the disease's spread, with little warning and planning on what to do after the closure. Students, teachers, and their families are not the only ones affected by schools' closure, but it has severe societal consequences, economic hardship, and limited healthcare access. Although almost all the schools are opened now, those affected by the closure are yet to recover from its impact. The new normal era prompted different learning institutions to adopt various e-Learning platforms based on their resources, although with some challenges in its adoption. Although online learning systems or eLearning aim to enhance continuous learning opportunities for all children, some of these children would not benefit from this opportunity. The vulnerable children will find it difficult to access and benefit from these opportunities.

The pandemic has also exposed the gains made to address poverty, hunger, good health, and wellbeing that may face severe setbacks unless the global community urgently addresses the global environmental threats that have a similar capacity to gravely undermine the systems that enable our planet to survive and thrive. Future-proofing sustainable recovery and development are only possible when good environmental responses, plans, and policies are given the importance they deserve.

Educational institutions and governments need to organise adequate training and workshops to educate students and teachers on the usage of e-

Learning platforms. This will help empower them with the necessary skills to bridge the digital divide. This ensures that their proficiency levels are enhanced enough to accept technology in learning institutions and provide the required content. Despite the devastating consequences of the COVID-19 pandemic, it has also been an extraordinary time for learning how adaptable and resilient educational systems, teachers, students and families can be. Through government and developmental partners interventions, teachers need to reimagine human connections and interactions to facilitate learning quickly. The role of teachers is rapidly evolving, becoming in many ways more difficult than when learning took place only in person. Educational institutions should employ e-learning systems and more sophisticated measures to deliver the teaching/learning process. Online learning, webinars and flipped classrooms can be a potent mode of education delivery now and in the future when such outbreaks occur.

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