



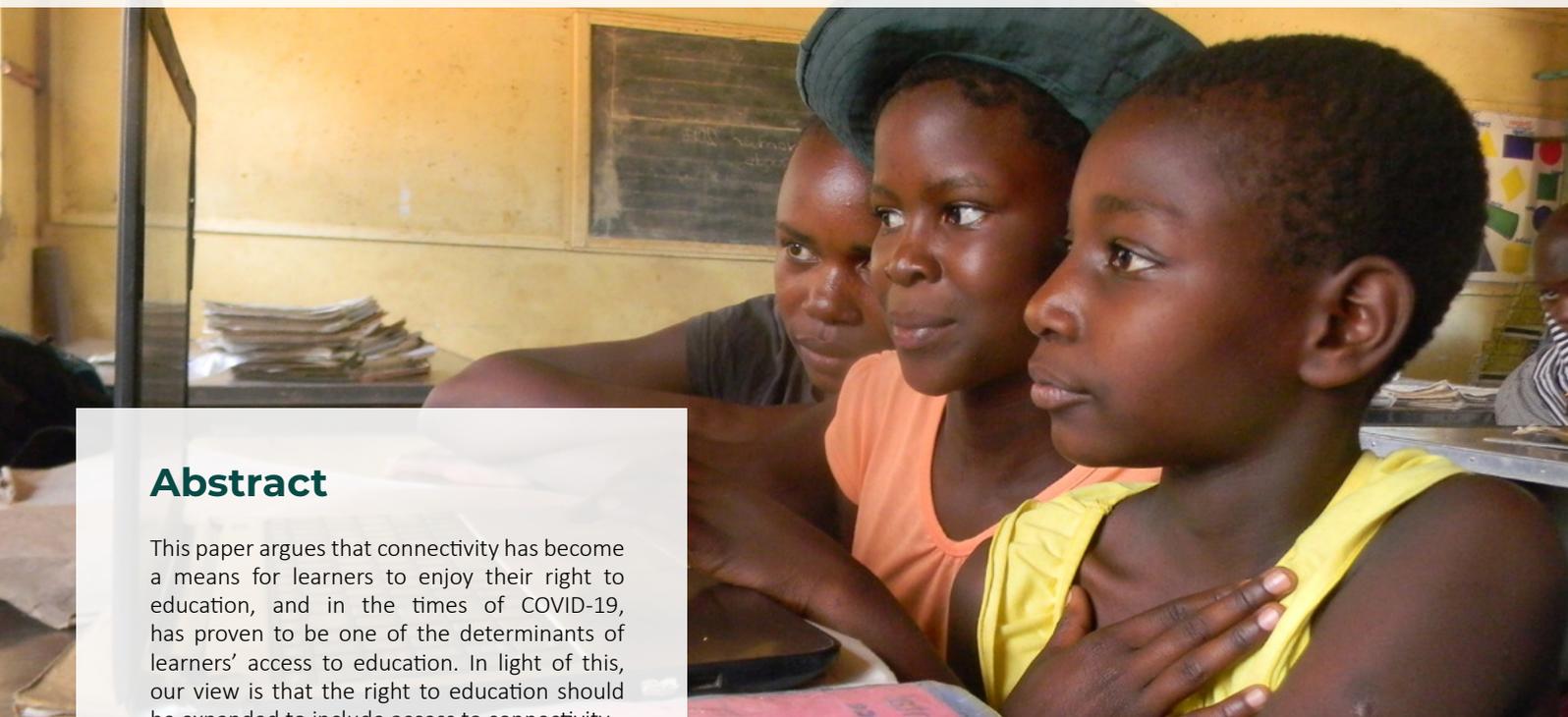
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Access to internet connectivity – the rights of learners in the post-COVID-19 era in Africa

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Abstract

This paper argues that connectivity has become a means for learners to enjoy their right to education, and in the times of COVID-19, has proven to be one of the determinants of learners' access to education. In light of this, our view is that the right to education should be expanded to include access to connectivity.

The Universal Declaration of Human Rights (UN, 1949) acknowledges that the right to education is a fundamental human right that is associated with human dignity as education gives individuals the skills to be active members of society and to achieve self-actualisation and self-sufficiency. The COVID-19 pandemic has affected learners' ability to enjoy this right and has raised concerns around learners' access to quality education during the pandemic. Due to social distancing and the lockdowns implemented to combat the pandemic, many learners no longer have physical access to their classrooms and to their teachers. In fact, more than 1.5 billion of the world's student population have not been able to attend physical classes (UNESCO, 2020). The education sector in Africa, like the rest of the world, has, as a result, suffered a major setback. Although some institutions turned to remote learning as a solution, the digital divide saw a large number of learners missing out on school time due to a lack of access to Information Communication Technology (ICT) resources, including the lack of or insufficient access to internet connectivity, which has been one of the major inhibitors of online learning. There is a need to expedite the development of ICT infrastructure in order to aid teaching and learning in this digital era.

Background

The COVID-19 pandemic has caused severe disruption in most sectors of our society. The recommended measures to curb the spread of the virus such as social distancing, national lockdowns and travel restrictions have resulted in the closing of schools, companies and workplaces and a ban on large gatherings (Lone & Ahmad, 2020). Due to these measures, more than 1.5 billion of the world's student population have not been able to attend physical classes (UNESCO, 2020), and the United Nations Educational, Scientific and Cultural Organization (UNESCO) recommended the use of online platforms for distance learning to allow students to continue with their education (UNESCO, 2020).

UNESCO's Global Education Coalition has been monitoring global school closures due to COVID-19.¹ As of 7 March 2021, most countries in Africa had fully reopened their institutions of education, with the exception of Uganda, Egypt, Eritrea, Ghana and South Africa, where the education sectors were partially opened, Zimbabwe where it remained closed due to the COVID-19 related lockdown, and Mozambique where schools were on an academic break. However, the closure of schools was a serious concern in 2020, and there is a risk that there might be third and fourth waves of the virus that would lead to strict lockdowns again (World Health Organization (WHO), 2021).

¹ See <https://en.unesco.org/covid19/educationresponse>



In 2020, by 26 March, at least 20 African countries had closed down their institutions of education to combat the virus (Ozili, 2020). Remote learning through online platforms, television and radio was rolled out in countries such as Nigeria, Kenya, Tunisia, Zimbabwe, South Africa and Morocco (Mhlanga & Moloj, 2020; Moyo-Nyede & Ndoma, 2020; Ngwacho, 2020; Tam & El-Aza, 2020; World Bank, 2020a). However, learners from poor, vulnerable and marginalised households did not have access to these technologies (Moyo-Nyede & Ndoma, 2020; World Bank, 2020a; Yekini, Adigun, Ojo, & Akinwole, 2020).

According to UNESCO (2020), 89 per cent of learners in sub-Saharan Africa alone do not have access to household computers, and 82 per cent lack internet access, making it impossible for schooling to have continued for such learners. Remote learning has thus exposed the long existing digital divide (Strusani & Hounghonon, 2020), and the absence of equal access to online learning (Ozili, 2020) has resulted in these learners being deprived of the right to education.

Besides the COVID-19 pandemic, other disruptions to learners' school attendance and attainment of education include war, disability, child marriage, child labour, lack of facilities and natural disasters (Watt, 2014). However, COVID-19 has made the effects of disruptions to education

systems prominently felt across the globe, and not just in a particular region. A global and continental emphasis on the benefits that can be derived from the efficient adoption of ICTs for learners may have the latent benefit of addressing the effects of some of the disruptions that were already prevalent in some regions of the world.

The role of connectivity, both as a means for learners to enjoy their right to education and, in the time of COVID-19, as a determinant of access to education, has inspired this paper. It argues that the right to education must be expanded to expressly include access to connectivity. Reference to 'access to connectivity' in this paper entails having the infrastructure required for internet connectivity; a reliable signal; free or affordable data to connect to the internet; and internet capable devices.

We recognise that there are alternatives that have been used to ensure the right to education for learners who do not have good access to computers/internet at the moment, for instance, the use of mobile phones, radio and television broadcasting, off-line computers and delivery of physical paper copies of learning materials. These have proven to be useful during the disruption of face-to-face classes by the pandemic and will continue to be useful as the digital divide is addressed.

The right to education

Arendse's (2011) analysis of the content of the right to free basic education examined the nature of the obligation on the state, starting with the international instruments that provide for this right and the interpretation of the provisions that explain the content of the right to education. The United Nations (UN) published the *Universal Declaration of Human Rights* in 1949. Article 26 provides that everyone has the right to education, and that elementary and fundamental stages of education shall be free. Free and compulsory primary education has subsequently been included in later international instruments (Arendse, 2011). For instance, Article 4(a) of the *UNESCO Convention against Discrimination in Education* (UNESCO, 1960) obliges signatories to promote equal opportunity in education and make primary education compulsory and free and secondary education available and accessible. Article 13(2) (a) and (b) of the *International Convention on Social, Economic and Cultural Rights* (ICSECR) (UN General Assembly, 1966) and Article 28(1)(a) and (b) of the *UN Convention on the Rights of the Child* (1989) also oblige states to make primary education compulsory and free and make secondary education available and accessible. This is reiterated in Target 4.1 of Goal 4² of the *Sustainable Development Goals* (SDGs), which is to ensure free, equitable and quality primary and secondary education, with the first nine years at least being compulsory (UN, 2015).

In line with the provisions of the ICSECR, the UN Committee on Economic, Social and Cultural Rights (UN CESCR) (1999), under General Comment No. 13, expanded the right to education to include the provision of sufficient resources including infrastructure, sanitation, furniture, and teachers, amongst others, to assist in the attainment of education (UN CESCR, 1999). The comment noted that education has to be accessible both physically and economically and should be non-discriminatory, and further stated that to ensure the availability of education 'some educational institutions will also require facilities such as computer facilities and information technology' (UN CESCR, 1999, para 6).

Under the African Union (AU), one of the instruments that proclaims the right to education is Article 17 of the *African Charter on Human and Peoples' Rights* (AU, 1981). This article guarantees the right to education and mandates member states to ensure that all their citizens have access to education. In the context of school learners, Article 11 of the African Charter on the Rights and Welfare of the Child guarantees the right to education for all children in Africa. In the *Resolution on the Right to Education in Africa* (2016), the AU Commission urged member states to guarantee the full scope of the right to education: this includes free and compulsory primary education, physical and economic accessibility for all persons to education without discrimination and ensuring high quality and appropriate educational programmes.

More recently, efforts have moved beyond merely ensuring access to education to ensuring access to 'quality education' (UNESCO, 2017). Furthermore, access to ICTs has become essential for all learners to acquire quality education that is responsive to the knowledge-based society. It has also been recognised that the individual has to be an active player in the learning process that is facilitated by teachers (Huang *et al*, 2020); this also supports the notion of lifelong learning.

Lifelong learning is a concept that is based on the assertion that learning is not confined to a specific setting and time such as the classroom or school going ages, but takes place throughout life and in different situations (Ates & Alsai, 2012). It is the integration of learning and living that utilises different modalities and is not confined to formal education; it meets learning needs and is integral to a knowledge-based society (UNESCO Institute for Lifelong Learning (UIL, 2015). Education and lifelong learning are seen as key to achieving the SDGs. Lifelong learning in particular is seen as central to addressing various social and environmental issues such as gender equality, poverty and climate change, amongst others, and contributing to the achievement of the SDGs overall (English & Carlsen, 2019). It is thus important that access to ICTs is broadened to encompass all types of educational institutions and that it cascades down to all individuals to empower them to take charge of their lifelong education and participation in society.

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2 SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (UN, 2015).

Access to connectivity as a right

It is important to note that expanding the definition of the right to education to include access to connectivity is different from making access to the internet an express right in itself. Although the authors concur with the argument that access to the internet (among others) should be a human right as considered by the UN (UN General Assembly, 2016), the scope of this paper focuses on connectivity as a means of realising the right to education.

In light of the above, rolling out internet connectivity should be a key continental priority for Africa. Indeed, the right to internet connectivity is an ongoing conversation, stemming from the important role of the internet in enabling individuals to actively participate in a knowledge-based society. The COVID-19 pandemic has raised the alarm for swift action needed to ensure that government policies, digital strategies and any other commitments to improving access to the internet are implemented. Ensuring effective access to and use of the internet entails having network infrastructure, reliable electricity supply, devices to connect to and utilise the internet, enabling regulatory systems, and the digital skills to fully utilise the internet (Baller, Dutta & Lanvin, 2016).

Although electricity is important, around 770 million people in the world did not have access to electricity in 2019, and 75 per cent of those lived in sub-Saharan Africa (International Energy Agency, 2020). While the number of people without access to electricity in Africa has progressively declined, from 610 million in 2013 to around 580 million in 2019 (International Energy Agency, 2020), it is still high. Hence, improving access to the internet would require a concerted effort to overcome barriers to accessing a reliable electricity supply and finding alternative energy sources.

In terms of internet infrastructure, more than 99 per cent of the information that transverse the internet is carried on submarine cables (Griffiths, 2019). Although these are costly to build, they are efficient. Countries, including small island and landlocked countries that do not have direct access to submarine cables, have to negotiate access across international borders and put in place costly infrastructure, yet their populations might be too small to cover the costs, resulting in financial losses. Consequently, Africa has the highest costs for internet connectivity: the price of a gigabyte of data averages over 8 per cent of average monthly income (A4AI, 2018). As a result, access to the internet is limited to those that can afford it. Nonetheless, as depicted in Annexure A, countries such as South Africa, Kenya and Egypt have made noteworthy efforts in partnering with network providers to increase affordable access to digital resources (Trucano, 2020).

The COVID-19 pandemic has accelerated the use of technology where the option to do so is available and highlighted the importance of public private partnerships to improve internet infrastructure and access to internet connectivity at affordable prices (Sidiropoulos, 2020; UN, 2020). The pandemic has also shown that learners' access to connectivity should not be confined to educational institutions but that learners should have such access even outside of the school (Lorente, Arrabal, & Pulido-Montes, 2020). While the internet presents an opportunity to access and share resources and information for the benefit of teachers and learners across localities, this needs to be supported by free and open sources of technology for teaching and learning (UN, 2020).

Returning to our argument, in light of the pandemic, access to connectivity has become analogous to the right to education insofar as connectivity ensures that learners can access online learning classes, resources and platforms to achieve educational outcomes. Issues of poor infrastructure and no internet access will therefore impede learners' right to education and consequently their ability to position themselves to benefit from the opportunities created by the Fourth Industrial Revolution (4IR). Achieving universal access to connectivity would allow learners to continue enjoying their right to education and make education responsive to the 21st century.





The technology-based society

To reinforce the argument that access to connectivity should be considered as a human right, we consider how the 4IR has created a technology-based society that is characterised by access to information and advanced Artificial Intelligence (AI) capacitated technology. Individuals require connectivity and the digital skills to be 'digital citizens' who will thrive in the digital economy. High speed connectivity is one of the key drivers of the 4IR, and enhanced connectivity has birthed the internet of things (IoT) – the ability to connect devices through the internet, thereby creating real-time interaction. AI allows machines, through the use of machine learning and neural networks, to process massive amounts of data or 'Big Data' in order to 'learn'. Together, the IoT and AI form an interoperable system, where these devices collect, analyse and share information with other connected devices (Shiohira & Dale-Jones, 2019). The IoT makes this data available across localities and for use by individuals. Access to such information and the digital skills to use, decipher and determine reliability of the data can be a game changer for learners if barriers to access are eliminated. In 2014, Cisco (2014) predicted that 50 billion IoT devices would be connected to the internet by 2020. This means that there

are now more 'things' connected to the internet than there are users of those things, which should not be the case. This situation shows that the expansion of connectivity has been extremely inequitable, and there is a need to extend this proliferation of internet access to all learners, enabling them to effectively participate in the 4IR.

Furthermore, the ongoing adoption of these technological advancements into the workspace has revolutionised the world of work. A study by the McKinsey Global Institute reported that roughly one-fifth of the global workforce would be impacted by the adoption of AI (cited in Change, 2017). To remain relevant in the future labour market, learners require new digital skills: education and training should equip them with the necessary advanced digital skills to take on new roles in the future labour market (Change, 2017). Access to the internet is seen as a necessary tool in the acquisition of these skills which afford individuals the dignity of being self-sufficient and active and informed members of society (Teltscher, 2019). This supports the view that learners should have access to connectivity even outside of institutions of learning. To effectively utilise and benefit from connectivity, learners need to have the convenience of being able to access the internet of their own volition.

To address the challenges of connectivity, there is a need for a coordinated approach at international and regional level. Such coordinated efforts can be brought about by

international bodies and instruments that acknowledge the importance of ensuring access to connectivity and specifically expand the right to education to include access to connectivity. The efforts should be in line with SDG 17³ and encourage public-private partnerships in enacting national and regional plans that would promote issues of access to connectivity. The AU and the different regional economic blocs should coordinate the development of international frameworks and policies with regard to ensuring fair and equitable access across population demographics, principally taking into account the most marginalised; in addition, there should be consistent monitoring and evaluation of ICT integration, use, and impact, particularly in relation to the SDGs.

Ultimately, equitable and effective connectivity for learners could be achieved through significant government investment, although this depends on robust gains in economic growth and available financing, or through partnerships between government and the private sector, generally through corporate social responsibility initiatives undertaken by national telecommunications agencies. An example would be an agreement between departments of education and private telecommunications companies to have zero-rated educational websites. As mentioned, electricity reliability is critical in developing digital economies as ICT infrastructure relies on electricity supply (Blimpo & Cosgrove-Davies, 2019). Improving access to connectivity will thus also require governments to make decisive efforts in ensuring access to electricity for marginalised communities.

To lower the costs of internet connectivity, there is also a need to lower the costs of prerequisite internet infrastructure setups for both governments and private players. A consolidated approach at international level could encourage the formation of sub-regional and other partnerships (in support of SGB 17) to lower international transit costs in order to help small island and landlocked nations access submarine cables and other infrastructure. The AU and other regional blocs could further support the development of Universal Service and Access Funds⁴ to support connectivity for marginalised populations in Africa.

Furthermore, countries should promote competition among internet service providers (ISPs) to avoid the monopolisation of internet services provision and implement policies that promote ISP start-ups. Policies should allow the reduction of connectivity taxes, which can drive up the price of internet access. The World Economic Forum (WEF) advises that this reduction in taxes can be achieved with the assistance a

of third-party institutions such as investment funds and multilateral banks which can finance, insure and securitise tax receivables (WEF, 2018). This would mean a reduction in tax-related costs, enabling users to access the internet for a lower price; at the same time, the increased internet usage would increase the tax base and offset the initial tax reduction (WEF, 2018). The long-term benefits of such a tax reduction would thus be broadened internet access and, after an initial deficit, a tax surplus and the 'increased prosperity and economic growth that is heavily correlated with internet usage and adoption to internet access' (WEF, 2018).

Improving internet access and closing the digital divide also requires that learners have internet capable devices for educational purposes. South Africa and Zimbabwe provide useful examples of the provision of devices for learners. In 2014, Econet Wireless, a private Zimbabwean telecommunications company, made low-budget tablets available to learners at low prices with the option of a long payment period of about three years (Kabweza, 2014) so that they could access the EcoSchool platform which was developed by the company to improve learners' access to textbooks, courses and other educational materials (Global Business Coalition for Education, 2014: 6). The pilot project was well received at the time and succeeded in making internet devices affordable for students who could not normally afford them (The Financial Gazette, 2014). In 2020, the South African government's National Student Financial Aid Scheme (NSFAS) began buying laptops for NSFAS-funded students when higher education institutions turned to remote learning during the COVID-19 pandemic (NSFAS, 2020). Learning from these two examples, public private partnerships could seek to develop and/or distribute low-budget, efficient devices to learners who do not have access to such devices.

The World Bank estimates that ensuring universal access to connectivity in Africa by 2030 will require an investment of US \$100 billion (World Bank, 2019). The report from the World Bank's Broadband for All Working Group notes that around 80 per cent of this investment would address infrastructure related matters, 20 per cent would address digital skills and local content creation, and 2 to 4 per cent would be for developing regulatory frameworks (World Bank, 2019). Perhaps establishing the aforementioned Universal Service and Access Fund for Africa can assist in investing in some of the solutions focused on infrastructural development, lowering data costs and ensuring access to devices.

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3 SDG 17 is to 'Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development' and it 'further seek[s] to encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships' (UN, 2015).

4 Universal Service and Access Funds are central pools of public funds and resources mobilised through contributions by stakeholders in order to address internet connectivity by availing resources such as internet infrastructure to underserved populations or areas (Thakur & Potter, 2018).

Conclusion and recommendations

COVID-19 has exposed the need to expedite the expansion of the right to education to include connectivity; the international community at UN and AU levels needs to heed the recommendation by UNESCO (2020) to use online learning to counter the disruptions of the pandemic. However, this requires that there should be measures put in place to improve digital equality among learners through providing basic internet access and the facilities to utilise the internet. This should be done in the best interests of the learners and to minimise the consequences of the prolonged inaccessibility of education, especially for marginalised students.

Expanding the right to education to include access to connectivity through international instruments such as the AU Resolution on the Right to Education in Africa and the Universal Declaration of Human Rights and national laws means that states would have to promote and protect measures put in place for learners to have access to connectivity. This requires government support for open internet and educational resources, and less dependence on private digital platforms (UN, 2020).

Expanding the right to education to include access to connectivity is both necessary and urgent. We call on the global youth to lobby both African and international role players so that Article 26 of the Universal Declaration of Human Rights can be expanded to include access to connectivity.

Expanding the right to education to include access to connectivity is both necessary and urgent



Annexure A

Country	Examples of steps taken by government in partnership with network/telecommunications providers to increase access to digital resources for students
<p>South Africa</p>	<ol style="list-style-type: none"> 1. Negotiated with all service providers to offer National Student Financial Aid Scheme (NSFAS) and Funza Lushaka students free 10GB daytime and 20GB night-time data for three (3) months, from 1 June till end of August 2020 (Nzimande, 2020). 2. Mandated Electronic Communications Service Licensees (Mobile Network Operators, Internet Service Providers) to zero rate Departmental and public institutions’ sites (universities; and TVET, CET, nursing and agricultural colleges) and private HEIs and colleges; and private/publishers’ websites (Nzimande, 2020). 3. MNOs and ISPs with access to high demand spectrum were also requested to provide connectivity to 152 district virtual classroom platforms, with minimum speeds of 10Mbps, to encourage virtual teaching during the State of National Disaster (Bhandari, 2020). 4. To meet the increased data demand during the lockdown, ICASA granted temporary, free emergency radio frequency spectrum in the 700MHz, 800MHz, 2.3GHz, 2.6GHz and 3.5GHz bands to MTN, Vodacom, Telkom, Rain Networks and Liquid Telecom (Bhandari, 2020). 5. Put out a tender and appointed service providers for the procurement of laptops and tablets for “all tertiary students who are funded by the National Student Financial Aid Scheme (NSFAS) and are registered at public universities and at technical and vocational education and training (TVET) colleges in 2020, to support them to complete the 2020 academic year” (Makinana, 2020). 6. <i>The Department of Science and Innovation, in conjunction with the Department of Communications and Digital Technologies, Sentech and the South African National Space Agency, is currently looking at a long-term solution to support the digital transmission needs of the national education system through the launch of a locally-produced communications satellite</i> (Nzimande, 2020). Not an immediate solution to address current challenges but definitely a commendable effort and a step in the right direction towards providing internet access in remote areas with poor or no connectivity at all. 7. <i>The SABC and the Department of Basic Education launched a multi-media learner support initiative under the banner: COVID-19 Learner Support aimed at limiting the impact of the lockdown to the school calendar. The programme was broadcast and is still broadcasting across three SABC TV Channels and 13 Radio stations, with online support. The series provides curriculum support lessons to learners in Grades 10, 11 & 12 and Early Childhood Development (ECD). Some of the subjects covered include Maths, Physical Sciences, English FAL, Life Sciences and Accounting. A variety of African languages are also covered under the ECD basket</i> (Nzimande, 2020).
<p>Egypt</p>	<ol style="list-style-type: none"> 1. The Ministry of Communications and Information Technology (MCIT) started an initiative for supporting e-learning during the education suspension period; they had ISPs increase the download quota of home internet packages by 20 per cent and enabled free browsing of the Egyptian Knowledge Bank and educational platforms and websites (MCIT, 2020). 2. <i>There is an arrangement with the Ministry of Communication and IT and mobile carriers to make available SIM cards at no cost to students if they have a device</i> (Arpogroup, 2020). The devices in question are the 1.8 million tablets that have been purchased by the Ministry of education for grade 10 to 12 learners (Sabah, 2020). 3. As part of the support e-learning initiative, national television aired educational content on educational TV channels by grade and subject (World Bank, 2020).
<p>Kenya</p>	<ol style="list-style-type: none"> 1. The Kenyan regulator, the Communications Authority, offered additional emergency spectrum to MNOs to meet the increased demand for internet services (Bhandari, 2020). 2. The MNOs, Safaricom, Airtel, and Telkom Kenya, have taken a host of voluntary initiatives to offer cheap data packages and YouTube bundles; improve internet speeds; provide zero-rated access to select websites, including educational websites; and extend packages to customers to allow them to upgrade their 2G phones to 4G-enabled smartphones (Bhandari, 2020). 3. <i>Kenya Broadcasting Corporation (KBC) will broadcast radio programs daily from Monday to Friday. Other broadcast platforms include the Edu Channel TV and EduTV YouTube channel overseen by the Kenya Institute for Curriculum Development (KICD)</i> (Arpogroup, 2020). 4. As part of the Kenya’s Basic Education Response plan, in partnership with MNOs, <i>learners can also access digital learning resources from the Kenya Education Cloud overseen by KICD</i> for free (Arpogroup, 2020). 5. President Uhuru Kenyatta fast-tracked the regulatory clearances of Alphabet’s Project Loon and announced his approval for the Project “in line with Government’s measures to respond” to the Covid-19 disruption, “to foster communication”, and to ensure “universal 4G data coverage throughout Kenya” (Bhandari, 2020). Although implementation might not happen anytime soon this is a step in the right direction.

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