Issue Brief:

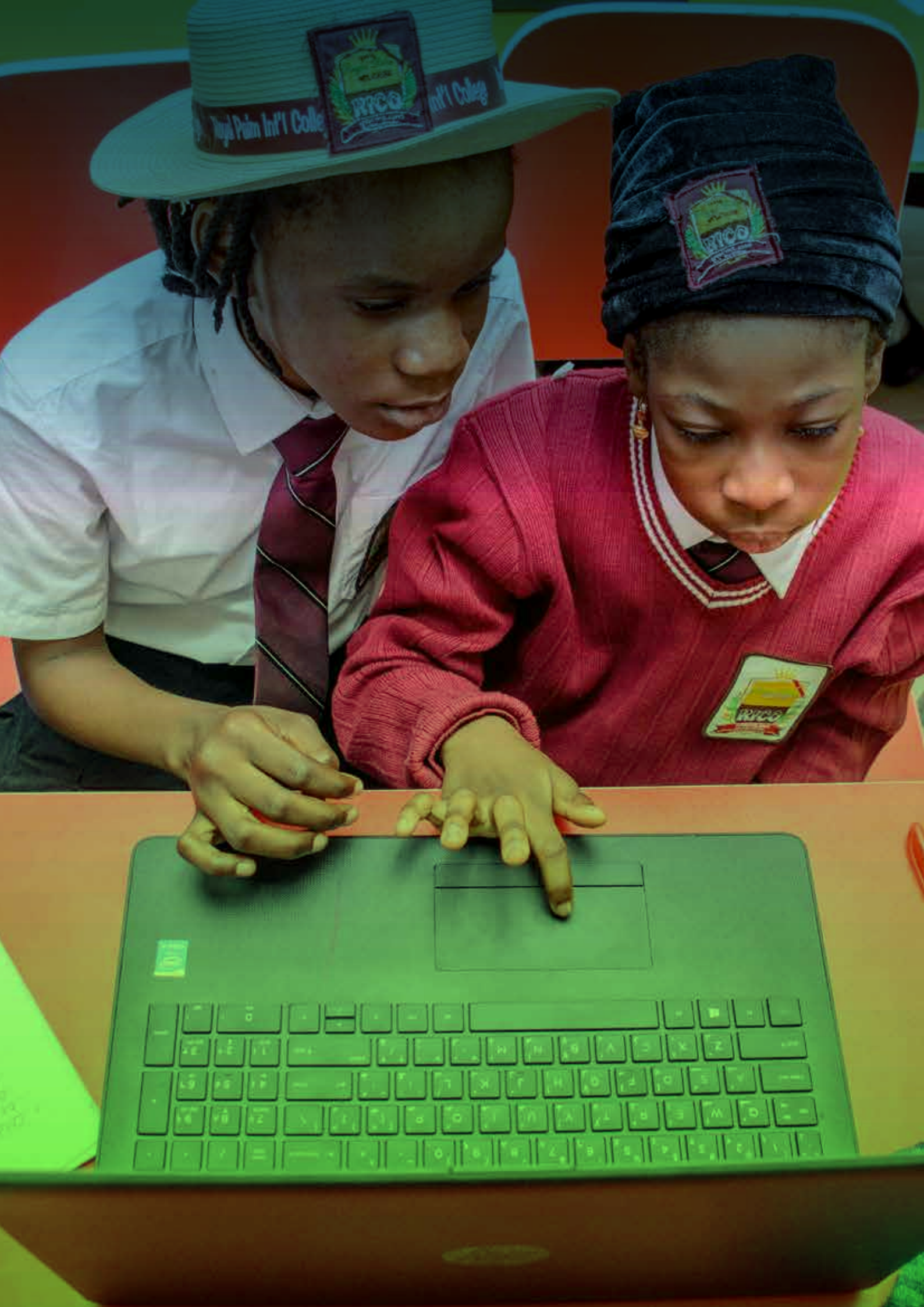
EdTech and the COVID-19 Pandemic in Sub-Saharan African Countries:

The Nigeria Case Study

with support from:

BRAIN BUILDERS YOUTH DEVELOPMENT INITIATIVE

GLOBAL CAMPAIGN FOR EDUCATION
www.campaignforeducation.org



Issue Brief:

EdTEch and the COVID-19 Pandemic in Sub-Saharan African Countries:

The Nigeria Case Study

GLOBAL CAMPAIGN FOR EDUCATION
www.campaignforeducation.org

BRAIN BUILDERS YOUTH DEVELOPMENT INITIATIVE

Table of Contents

Background

The onset of COVID-19 pandemic means no good to the already struggling education system in Sub-Saharan Africa with estimated three-quarters of girls and two-thirds of boys already out of school before the pandemic (UNESCO, All in School, n.d). As many African countries institute several measures to curb the spread of the virus, one policy however affects the education sector the most – Lockdown/School closure. The impact of school closure means many students are “at risk of not learning, not passing exams, and dropping out” (Vegas et al., 2021). To limit the impact of the pandemic on the already fragile education system and to promote continuity in Sub-Saharan Africa, several countries implemented educational technology (EdTech) policies and interventions to move learning from paper-based to information and communication technologies (ICTs). EdTech (a combination of "education" and "technology") is the hardware and software designed to enhance teacher-led learning in classrooms and improve students' education outcomes. Over the years the use of ICT has gained momentum in Sub-Saharan Africa from 2010 to 2020. Several governments’ attempt to advance EdTech has been made through the promotion of integrating education technologies in national planning documents and building up the requisite infrastructure. The world has advanced from more traditional methods of learning to digital patterns and every school administrator or educator especially in private schools in Nigeria has adapted to such digital methodologies to be more productive. This is aimed at fostering accuracy, accountability, development, and the achievement of school goals.

This work drew largely from the Global Campaign for Education report titled “Harnessing EdTech in Africa: Scoping Study” published in 2022 to present evidence of the sub-Sahran African use of EdTech. Key findings were also drawn from other research studies for other sub-Saharan African countries not covered in the GCE EdTech Scoping Study. The aim is to identify the usefulness of EdTech ruing the covid-19 pandemic, its adaptivity in Nigeria, Key EdTech initiatives, significance to the Nigeria educational system, challenges, and the way forward.

[1] What Is EdTech? Definition, Example, Pros & Cons (investopedia.com)
[2] Železný-Green & Metcalfe (2022), “Harnessing EdTech in Africa: Scoping Study” Global Campaign for Education
[3] A look at EdTech in Nigeria - Global EdTech (global-edtech.com)

How helpful was EdTech during the pandemic?

Eastern Africa

Burundi

Even though Burundi's government refused to initiate school closures like other countries, the country was prepared to adopt the Early Grade Reading Project through the help of the World Bank and Columbia University. The project adopted the use of home-based radio learning as well as classroom learning (Kabongo et al., 2021).

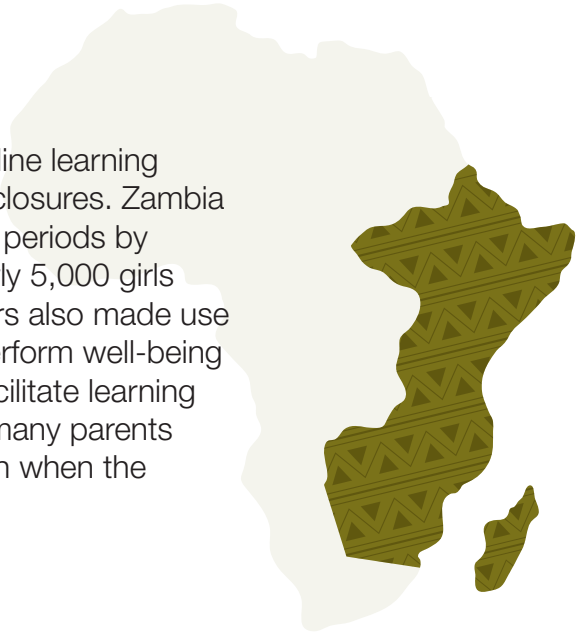
Madagascar

With support from Education Development Center (EDC) and UNESCO, Madagascar built on its experience with radio-based instruction to launch further radio programming at the start of the pandemic (Dreesen et al., 2020). In addition to the use of paper-based learning, the government leveraged the use of Television and Youtube to deliver maths education to primary school students. In total, 600,000 children as of July 2020; and 300,000 paper-based schooling packages were distributed by the same time representing 13% of the school children (UNICEF Madagascar Country Office, 2020).

How helpful was EdTech during the pandemic?

Zambia

The Zambian government focused on the online learning portal to educate its students during school closures. Zambia focused the girl-child education during these periods by distributing paper-based study packs to nearly 5,000 girls (GEC, 2021). The government and its partners also made use of “WhatsApp, Google Meet and Zoom to perform well-being checks on the girls in their network and to facilitate learning delivery” (FHI360, 2021). Due to job losses, many parents could not pay the tuition fees for their children when the schools re-opened.



Rwanda

The country that has a 71% mobile penetration rate in Africa, Rwanda shifts its focus away from paper-based to the use of radio, television, and online learning content to support learners during periods of school closures. The country adopted the use of “smartphones WhatsApp and ensure more affordable access to high-speed internet and digital skills development opportunities, respectively, to support digital learning” (Byishimo, 2021). Despite these efforts, affordability posed a threat as many students could not afford to access the educational contents.

How helpful was EdTech during the pandemic?

Central Africa

Angola

In Angola, school closures negatively impacted school children. Despite the country's vast oil and gas resources, it suffers from a deficit in digital infrastructures needed for education. A large number of students and teachers do not have access to the internet, or the devices needed to continue learning hence the reason why EdTech was not implemented during the pandemic (UNCTAD, 2021)[4].

Chad

School shutdown in Chad means over 3 million learners from pre-primary to secondary schools will not be able to further their studies. However, the government with support from Global Partnership on Education funded a $7million project to provide paper-based resources, mobile phones, radio, TV and online learning platforms. The project also provide training for teachers to prepare them for multi-modal distance learning system[5]. According to UNICEF, by "April 2021, 968,077 pupils aged 7 to 19 (370,616 girls), or 32 per cent of the 3 million affected children, benefited from distance education programmes delivered via radio, television and mobile phone" .

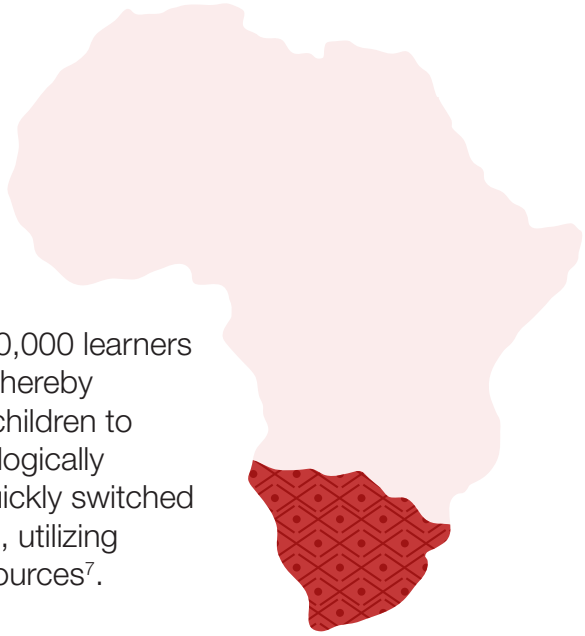
Cameroon

Over 6 million primaries to secondary education were paralysed as a result of the school closure ordered by the government at the start of the pandemic (UNSD, 2020). This prompted the government to initiate a distance learning platform such as radio, TV, and online for continued learning. However, despite the effort of the government, a study by the Solidarity and Development Initiative (2021) shows that "students were similarly split regarding their satisfaction with the quality of their education during the pandemic. 31.63% of students indicated some level of satisfaction with their education during this time frame and 44.90% had some level of dissatisfaction" Akame et al (2021).

[4] Economic and social impact of COVID-19 in Angola 2021 (unctad.org)
[5] Education in Chad | Global Partnership for Education
[6] Accelerating school reopening in Chad using an integrated approach..pdf (unicef.org)

How helpful was EdTech during the pandemic?

Southern Africa



South Africa

According to UNICEF, around 400,000 to 500,000 learners dropped out of school during the pandemic thereby increasing the total number of out of school children to 750,000 in the country. As one of the technologically advanced countries in Africa, South Africa quickly switched to mix mode of learning during the pandemic, utilizing online learning, radio and TV educational resources[7].

Botswana

In order to prevent learning loss during the pandemic, Botswana's government deploys the use of radio and television as well as bulk short message service (SMS) to broadcast the national school curriculum during school closures. In remote areas where the use of EdTech is not feasible, the schools opted to continue the use of paper-based learning (Rodriguez, Cobo, Muñoz-Najar & Sánchez, 2020).

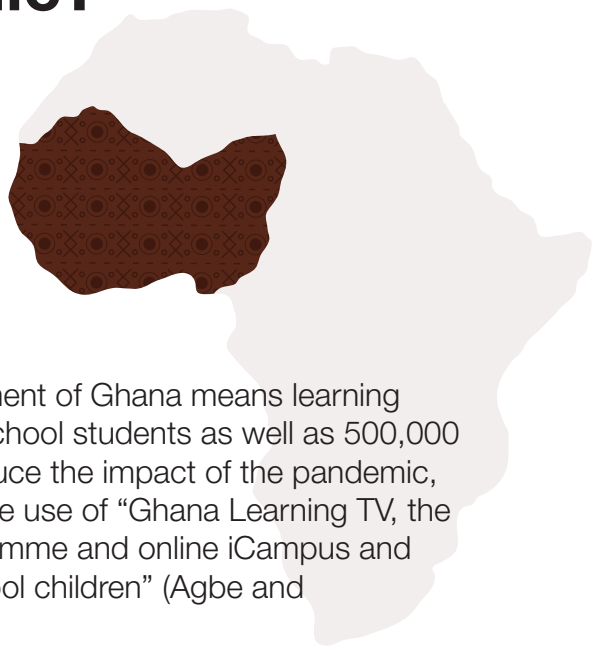
Namibia

Namibia utilized various means of delivering education to its primary and secondary school students. The country made use of platforms created by the government, created by other stakeholders, paper, television, radio, social media and SMS (Rodriguez, Cobo, Muñoz-Najar & Sánchez, 2020). About 5 million paper-based instructional materials to 600,000 primary and pre-primary students. Aside from these 6,700 learners with a visual disability were also given access to educational materials in Braille (Mueenuddin, 2021).

[7] Learners in South Africa up to one school year behind where they should be (unicef.org)

How helpful was EdTech during the pandemic?

Western Africa



Ghana

The school closure initiated by the government of Ghana means learning disruption for 9.2 primary and secondary school students as well as 500,000 tertiary students across the country. To reduce the impact of the pandemic, the government initiated EdTech through the use of "Ghana Learning TV, the Ghana Learning Radio and Reading Programme and online iCampus and iBox to ensure continuous learning for school children" (Agbe and Sefa-Nyako, 2020).

In addition, the World Bank supported Ghana with "in-service teacher training for targeted instruction and rapid student assessment to over 70,000 teachers (41 percent of whom are women) in 10,000 beneficiary schools through the Ghana Accountability for Learning Outcomes Project (GALOP). The project an estimated 4.45 million students provided over 5.8 million children with daily school meals and sanitation kits[8].

Senegal

At the start of the pandemic school closures, around 3.5 million pre-primary to high school students attending 16,235 schools found themselves at home without learning. The Senegalese government in a partnership with the Global Partnership provided $6million to "training of school principals and teachers in the use of distance learning materials and practices (digital, television, audio); design and broadcast of educational programs via radio and television; support for deconcentrated management of COVID-19 coordination and response[9]".

[8] Ghana: Online Education for Delivering Learning Outcomes during the COVID-19 School Closure (worldbank.org)
[9] Senegal: Learning at home during the COVID-19 pandemic | Blog | Global Partnership for Education

Nigeria and the EdTech during the Covid-19 Pandemic

During the COVID-19 pandemic, more than 50 million children remained at home in Nigeria (UNICEF 2020) . The education system was faced with low participation and learning achievements, the closure increased the challenge for children's education and created a setback in bringing children back to school for several months. The Federal Ministry of Education used online and offline platforms, television, radio, and take-home materials to keep children learning. Nigeria's response to the COVID-19 pandemic disruption of learning was through strategic partnerships with shareholders such as for-profit and not-for-profit organizations to provide e-learning platforms to teachers and students. Most distance education initiatives rely on technology, which depends on electricity supply and internet connectivity . The infrastructure to support e-learning is poor in the country with only 57% of Nigerians having access to electricity during the Covid-19 pandemic , and 44.7 percent broadband penetration rate as of October 2022[14].

EdTech Initiatives in Nigeria during Covid-19 Pandemic

Radio and Television Platforms

These platforms were widely used during the Covid-19 pandemic. The subnational state governments used this platform to broadcast lessons for the students both in the rural and the urban centres. Both are the most patronized platforms by learners during the pandemic. These initiatives were mostly driven by the government. They require no data but radio and television devices and electricity. While radio is widely used, learners have various challenges regarding TV, especially the lack of a stable power supply. However, after the pandemic, the use of these platforms has been greatly reduced and nonexistent in many states for communicating lesson to the pupils.

[10] COVID-19: Education transformed through remote learning | UNICEF Nigeria
[11] COVID-19: Education transformed through remote learning | UNICEF Nigeria
[12] Education initiatives using distance learning technology - PubMed (nih.gov)
[13] UN puts Nigeria's electricity access rate at 57% — Nigeria — The Guardian Nigeria News – Nigeria and World News
[14] What a near 50% broadband penetration means for Nigeria - (businessday.ng)

Online eLearning Platforms (Apps, Website, Portal etc.)

This is another major Edtech platform deployed by the government and private companies before, during, and after the Covid-19 and pandemic. It is aimed at exposing learners and tutors to digital learning at their convenience. It is largely driven and managed by private tech companies within and outside the countries. Several of the eLearning platforms in Nigeria during Covid-19 includes HITCH, Learn at Home, School Gate Ng, uLesson, Pass.ng, etc. Most private schools used WhatApp as the primary means of exchanging lessons through the use of the learners' parent phones, tablets other available devices. Largely, they require internet access for accessibility. As of Q1, 2020 when the Federal government of Nigeria declared lockdown as a result of the Covid-19 pandemic, there were 136 million active internet mobiles (GSM) for all networks[15]. As of December 2022, Nigeria has 45.02% broadband penetration rate. Non-affordability of data bundles, poor awareness, and low digital literacy skills are the major challenges against the utilization of these online learning platforms.

[15] Reports | National Bureau of Statistics (nigerianstat.gov.ng)

Table 1: EdTech Initiative in Nigeria During the Covid-19 Pandemic

S/N	EdTech Initiatives	Description
1	HITCH	Designed specifically for Nigeria, which ensures that students from Primary 1 through SSS3 – can access video resources that will ensure they don't miss out on their education[17].
2	Learn at Home	An Educational portal that provides global standard education for millions of Nigerians from the comfort of their homes in the wake of the COVID-19 inspired reality and shutdown of schools across the nation. It combines the traditional radio classes with embedded free interactive SMS quiz and IVR based personalized learning where students can learn without the internet[18].
3	School Gate NG[19]	The portal offers both online and offline video learning and materials to students of all levels. The two government partners backing SchoolGate are the FME and the state ministries of education.
4	uLesson	Personal learning tablets for children in primary and secondary school to learn anywhere, anytime, and excel academically. The app has live lessons, mock exams, hom work helps, text and quiz, learning report[20]
5	SchoolonAir	Unified, controlled computer programme where studied videos incorporating school subjects, covering science, social science, and Arts Student based on the prescribed curriculum[21].
6	Passnownow	Social interaction website that supports learning by providing curriculum-based test materials to users for a small charge[22].
7	Pass.ng	Web and mobile platform that helps candidates in Nigeria practice and prepare for national examinations by way of suggestive coaching and adaptive testing[23].
8	LearnAM	It is a ScholarX mobile application product that provides learning materials in English, Yoruba, Hausa and Igbo[24].
9	PrepClass	A home tutoring service that offers quick test taking strategies and targeted examination practice for students. They also provide access to personal home tutors trained to meet your academic needs. It's like an Uber for home tutoring[25]
10	Nigeria Learning Passport	An application that enables continuous access to quality education both online and offline in conjunction with the State Ministry of Education[26].

[16] file (ncc.gov.ng)
[17] Educational Videos On Demand | HITCH
[18] Home - Learn At Home
[19] SCHOOLGATE NIGERIA | EdTech Open Atlas
[20] uLesson | No. 1 Learning App for Primary, Junior Secondary & Senior Secondary school Students
[21] Educational Technology (EdTECH) Summit 2020 - FEDERAL MINISTRY OF EDUCATION
[22] A look at EdTech in Nigeria - Global EdTech (global-edtech.com)
[23] A look at EdTech in Nigeria - Global EdTech (global-edtech.com)
[24, 25] ScholarX | Home
[26] Lagos, UNICEF Launch e-learning offline and mobile platform. - Radio Nigeria Lagos

Phones SMS and Take-Home Materials

The phone SMS was also used by the tutors to exchange lessons with students. Many schools especially private ones, create opportunities for the students' continuous learning through bulk short message service (SMS) or phone calls. The paper-based materials were also distributed to the students for practice during the pandemic. This was done in partnership with the government, private sector, and NGOs.

Learners' Digital Awareness

The awareness of the learner is critical to harnessing the opportunity in an online learning platform. Not all students have this privilege. Learners from rural or urban communities without educated guidance or supportive tutors found it very difficult to answer the question of what, where, when, and how with regard to the online learning apps, websites, and portals to access. Except for the off learning such as the "Nigeria Leaning Passport", learners with no access to gadgets and data bundles could not access the online platform. It could be argued that even when online learning was prioritised and rolled out, some learners lacked digital awareness of what it entailed. Looking at their learning space. They would often respond to tasks but fail to complete them.

Learners' Digital Knowledge and Skills

There are many EdTech platform online. They require necessary knowledge and skills. Many students could not access some of these platforms because it was not integrated into their school curriculum prior to the pandemic. Some students were unable to access and navigate the portal. These students not only missed most of their content they also missed online assessments such as chats and discussion forums as well as quizzes. Others would access them but failed to do only what was necessary to complete tasks.

Some struggled to complete tasks due to their limited digital skills while who has such skill often manage to complete task. This creates a wider gap between the student who has the skill and those who do not.

Significance of EdTech to the Nigeria Education System

EdTech is a fundamental mechanism for learners in the 21st century. Knowing how to use technology and the internet is now required in almost every job. Teachers can help the students improve their digital literacy through the incorporation of EdTech in the school curriculum.

EdTech safe teachers' teaching time and also improve their teaching method through lesson recording and online engagement.

EdTech aids virtual learning. Teachers can deliver lecture without necessarily being present physically, so far, the school has the required facilities that drive the process such as projector, computer, and various meeting apps such as Google Meet, Zoom, WhatsApp and Telegram videos, and Facebook live among others. Tutors can also enhance interaction with learners using a well-designed learning management system like Google Classroom.

EdTech will increase the productivity of any school with the use of automated applications. Human error can be prevented in accounting, registration, employment and other divisions within education.

EdTech exposes learners and tutors to emerging educational technology. It allows them to learn new digital skills and even create wealth at a younger age.

It fosters creativity and collaboration in the classroom. Both theoretical and practical subjects are easier to comprehend when taught with pictures, videos and animation. It's widely recognized as best to teach topics with visual arts than with traditional textbooks. With EdTech tools such as those provided by Microsoft and Google, students can properly utilize the internet and go online to make presentations and complete tests and assignments[27].

It reduces paperwork and access to computer frequently improve learners typing skills.

EdTech create opportunity for both the learners and the tutors. It makes them compete with their peers across the globe.

[27] A look at EdTech in Nigeria - Global EdTech (global-edtech.com)

Challenges of EdTech in Nigeria during the Covid-19 Pandemic

01 Poor awareness of pandemic-Era EdTech interventions

02 Private Sector EdTech support was minimal

03 Uncoordinated learning curriculum

04 Ineffectiveness of EdTech used, but WhatsApp works

05 The lack of infrastructure facilities is a significant barrier to EdTech success in Nigeria

06 Low digital literacy among teachers and most of them were unprepared for the distance instruction method.

07 Parents with low digital literacy

08 Pandemic job losses squeezed finances; parents were unable to afford devices for children schooling

09 Lack of government distance learning plans for educational continuity in the emergency periods.

10 Most EdTech platforms are not inclusive. They do not take into consideration the need of people with disabilities.

Way Forward

- Create policies to ensure connectivity, including internet access, in all schools.
- Invest in Wi-Fi-capable devices for student and teacher use, while preloading these devices with learning materials that cover the curriculum for an entire year in rural settings.
- Train and retrain teachers in further professional development, including using modern digital tools" (UNESCO, 2021).
- Sufficient awareness campaigns for both teachers and parents
- For EdTech to work, significant investment in alternative sources of energy such as solar energy is needed to address the lack of electricity in most schools in both the rural and the urban areas.
- Tax relief on EdTech gadgets such as laptops, projectors, desktop computers, and mobile phones will promote affordability.
- Cybersecurity policies need to be enhanced to prevent cyberbullying.
- Publishers should be mandated to provide digital versions of textbooks as paper-based versions.
- Governments should continuously monitor and evaluate their EdTech interventions to assess the reach and measure the impact of these interventions.
- We recommended a post covid-19 pandemic EdTech study to understand what has changed in terms of progress and development in the use of EdTech by both the private and the public sectors. This study will also identify the efforts of the private sector after the pandemic.
- Adequate public and private investment in EdTech.
- Government should monitor activities of the private EdTech providers to ensure that their educational content is in line with the Nigeria educational standards.

References

Agbe, E., & Sefa-Nyarko, C. (2020). Ghana's education response during the COVID-19 crisis: EdTech to the rescue? Case study. EdTech Hub. https://edtechhub.org

Akame et al (2021): Cameroon's COVID-19 Pandemic Education Response and the shift to Distance/Digital Learning. A publication of the Solidarity and Development Initiative

Akogun, I., Olojede, O., Adesina, A., & Akogun, O. (2020). Education technology in the COVID-19 response in Nigeria. Case study. EdTech Hub. https://edtechhub. org.

All in School - The global initiative on out-of-school children. Retrieved March 31, 2022, from http://allinschool.org/

Byishimo, B. (2021, November 17). Rwanda partners with Google to fast-track digital transformation. The New Times | Rwanda. Retrieved March 31, 2022, from https://www.newtimes.co.rw/news/rwanda-partners-google-fast-track-digital-transformation

Dreesen, T., Akseer, S., Brossard, M., Dewan, P., Giraldo, J.-P., Kamei, A., Mizunoya, S., & Ortiz, J. S. (2020). Innocenti Research Brief. UNICEF. Retrieved March 30, 2022, from https://www.unicef-irc.org/publications/pdf/IRB%202020-10.pdf

Duarte, C., & IMF. (2021). Africa goes digital – IMF F&D. International Monetary

FHI360. (2021, October 4). Making progress on girls' education in Zambia. FHI 360. Retrieved March 31, 2022, from https://www.fi360.org/news/making-progress-girlseducation-Zambia

Fund. Retrieved March 31, 2022, from https://www.imf.org/external/pubs/ft/fandd/2021/03/africas-digital-future-after-COVID-19-duarte.htm

GEC. (2021). Country briefing: Zambia. Girls' Education Challenge. Retrieved March 31, 2022, from https://girlseducationchallenge.org/media/bejn1wiy/gec_country_briefng_zambia_march- 21_fnal.pdf

Kabongo, V., Saavedra, J., Kamil, H., Twinomugisha, A., & Liberman, J. (2021, September 17). Burundi reopens schools after Covid break. Africanews. Retrieved March 30, 2022, from https://www.africanews.com/2021/09/17/burundi-reopens-schoolsafter-covid-break//

Kainja, J. (2021, May 20). Malawi Telcos further reduce data prices but affordability concerns remain. CIPESA. Retrieved March 30, 2022, from https://cipesa.org/2021/05/malawi-telcos-further-reduce-data-prices-but-afordabilityconcerns-remain/

Mueenuddin, L. (2021). Namibia. UNICEF. Retrieved March 30, 2022, from https://www.unicef.org/esa/media/8566/fle/RTA-Phase1-Nambia.pdf

Munoz-Naja, A., Gilberto, A., Cobo, C., Azevedo, J. P., & Akmal, M. (2021). Remote learning during COVID-19: Lessons from today, principles for tomorrow. Retrieved March 30, 2022, from https://documents1.worldbank.org/curated/en/160271637074230077/pdf/Remote-Learning-During-COVID-19-Lessons-from-Today-Principles-for-Tomorrow.pdf

Rodriguez, M. B., Cobo, C., Munoz-Najar, A., & Ciarrusta, I. S. (2020). World Bank Document. World Bank Document. Retrieved March 30, 2022, from https://documents1.worldbank.org/curated/en/668741627975171644/pdf/Remote-Learning
During-the-Global-School-Lockdown-Multi-Country-Lessons.pdf

Rodriguez, M. B., Cobo, C., Munoz-Najar, A., & Ciarrusta, I. S. (2020). World Bank Document. World Bank Document. Retrieved March 30, 2022, from https://documents1.worldbank.org/curated/en/668741627975171644/pdf/Remote-Learning
During-the-Global-School-Lockdown-Multi-Country-Lessons.pdf

Saka, T. W. (2021). Digitalization in teaching and education in the context of COVID-19: Malawi. ILO. Retrieved March 30, 2022, from https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/publication/wcms_783729.pdf

Searcey, Forsythe, & Lipton. (2021, November 20). A power struggle over cobalt rattles the clean energy revolution. New York Times. Retrieved March 30, 2022, from https://www.nytimes.com/2021/11/20/world/china-congo-cobalt.html

Trucano, M. (2015b, July 24). Banning and unbanning phones in schools. World Bank Blogs. Retrieved April 1, 2022, from https://blogs.worldbank.org/edutech/banningand-unbanning-phones-schools

Tshiamala, S. T. (2021, December 10). Mines : « La RDC a tout pour devenir un champion des voitures électriques » – Jeune Afrique. Jeune Afrique. Retrieved March 30, 2022, from https://www.jeuneafrique.com/1279122/economie/mines-la-rdc-atout-pour-devenir-un-champion-des-voitures-electriques/

UNESCO & Global Education Coalition. (2021). The digital learning turn in Africa: The role of local ecosystems. Global Education Coalition celebrates Africa Day 2021. Retrieved March 30, 2022, from https://unesdoc.unesco.org/ark:/48223/pf0000377725

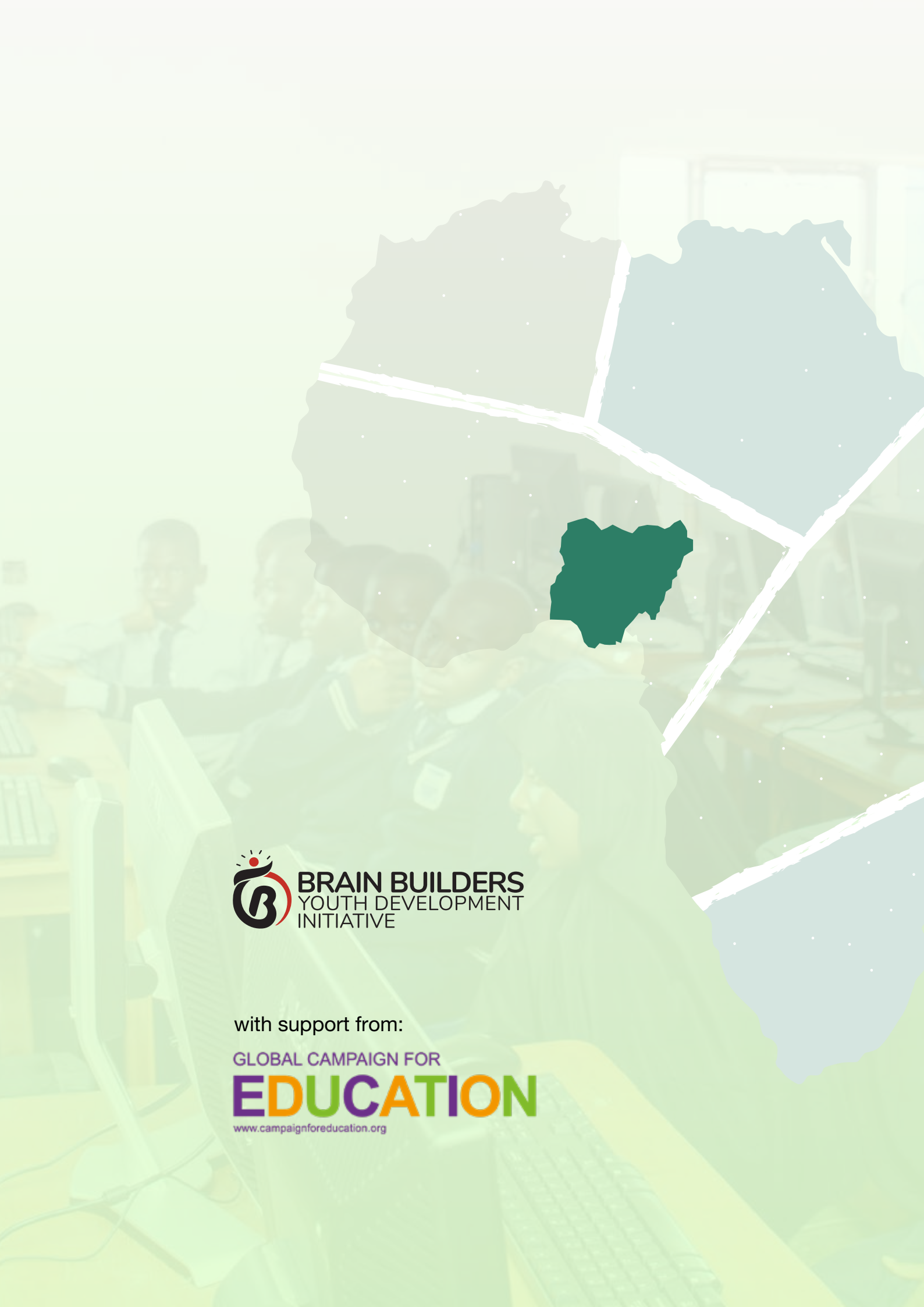
UNESCO (2020), National Learning Platforms and tools. Retrieved from https://en.unesco.org/Covid-19/educationresponse/nationalresponses

UNICEF (2021).Education & COVID-19 Case Study Chad – Accelerat.ing school reopening in Chad using an integrated approach https://www.unicef.org/chad/media/1586/file/Accelerating%20school%20reopening%20in%20Chad%20using%20an%20integrated%20approach..pdf

UNESCO. (n.d.a). Data for the Sustainable Development Goals. http://www.uis.unesco.org/Education/Documents/fs-31-out-of-school-children-en.pdf

UNICEF Madagascar Country Office. (2020, August 19). UNICEF COVID-19 case study Madagascar. UNICEF. Retrieved March 30, 2022, from https://www.unicef.org/lac/en/media/20191/fle

Vegas, E., Shah, S., & Fowler, B. (2021). Ed tech and educational opportunity during the COVID-19 school closures. Brookings. Retrieved March 31, 2022, from https://www.brookings.edu/wp-content/uploads/2021/08/Ed-tech-and-educationalopportunity-during-COVID-19-school-closures-FINAL-1.pdf



BRAIN BUILDERS
YOUTH DEVELOPMENT
INITIATIVE

with support from:

GLOBAL CAMPAIGN FOR
EDUCATION
www.campaignforeducation.org