

2

The impact of COVID-19 on educational inequalities in Sub-Saharan Africa

Adedeji Adeniran
Thelma Obiakor
Emmanuel Nwugo
Tikristini Olawale



Introduction

In 2020, UNESCO reported that globally nearly 1.6 billion students were unable to attend school during the peak of COVID-19 lockdowns. An additional 168 million students could not access in-person education for a full year, stretching from March 2020 to March 2021 (United Nations Educational, Scientific, and Cultural Organization [UNESCO], 2021). These concerning statistics provide context for the dire situation in sub-Saharan Africa (SSA), a region where the pandemic has exacerbated long-standing challenges, most notably elevated numbers of out-of-school children (OOSC), gender-based educational disparities, and low learning outcomes.

SSA has generally lagged behind other regions in key educational indicators. The region has the largest number of OOSC globally and is the only region where that population has been growing steadily for the past two decades, increasing from approximately 88 million in 2000 to 95 million in 2019 (UNESCO, 2022). According to UNESCO (2023), this number is projected to steadily rise in the coming years. UNESCO estimates that in 2019, approximately 20% of primary school-age children were out of school in the region, with a rate of 21% among female children and 20% among male children. United Nations International Children's Emergency Fund [UNICEF] (2020), reports that 12 out of 17 countries worldwide that have not achieved gender parity in primary education are in SSA. All 20 countries that have not achieved gender parity in lower secondary education are also in the region. Furthermore, learning levels for in-school children were also low pre-pandemic, with the World Bank's Learning Poverty Index suggesting that about 87% of school-age children in SSA were learning poor in 2019, with variations across demographic and socio-economic groups (World Bank, 2021)¹. These pre-pandemic exclusions and structural inequalities in educational access and outcomes in SSA have hindered progress toward achieving the targets of Sustainable Development Goal 4 (inclusive and quality education).

COVID-19 has underscored the depth and severity of inequalities in demographic and socio-economic characteristics, while also fostering new inequalities such as digital exclusion and disparities in system resilience (specifically the ability of education systems to continue to operate in adverse situations). Studies such as Aina and Adekunle (2022), Adugna et al. (2022), Alesina et al. (2021), and Kasirye et al., (2020) have also highlighted barriers faced by students with disabilities, from ethnic minority groups, and from low-income households to accessing education.

Governments across SSA implemented several mitigation measures to curb the impact of the COVID-mandated lockdowns on education, such as the provision of remote learning, digital devices, and various forms of targeted support to vulnerable students (UNICEF Malawi, 2023; World Bank, 2022; Uwizeyimana, 2022; Bulawayo, 2021). However, measures implemented to mitigate the impact of school closures and reduce learning loss in fact highlighted and exacerbated existing inequalities, while also revealing new dimensions of inequalities and exclusion, such as low levels of digital skills

¹ According to the World Bank, learning poverty refers to the share of children who are unable to read a simple story by age 10 (~primary 5).



The pandemic has highlighted the fragility of education systems in the region, revealing significant weaknesses in how education systems operate and are managed across the region.

and highly stratified access to digital resources (Mo Ibrahim Foundation [MIF], 2021).

The exacerbation of structural inequalities in SSA education systems resulting from COVID-19 has led to a crisis within a crisis. If unaddressed, this could set the region back in terms of the modest gains that had been made, specifically around access to education, making the quest for an inclusive education system more elusive than ever. Understanding the manner in which COVID-19 has amplified existing structural inequalities and created new ones will be crucial if SDG 4 targets are to be met in SSA. Additionally, the pandemic has highlighted the fragility of education systems in the region, revealing significant weaknesses in how education systems operate and are managed across the region. For example, most countries in the region were unprepared for the rapid shift to digital learning, teachers were not equipped to transition to online teaching, and traditional methods of assessments, such as standardised testing, were problematic during the pandemic. Analysing the varying experiences and policy responses of different SSA countries can provide important lessons and offer guidance for future shocks to the education system in terms of supporting national and multilateral efforts towards building resilient education systems in the region.

To that end, this report seeks to understand the state of educational inequalities in SSA in relation to COVID-19, specifically in terms of the key drivers of inequality, and the effectiveness of government mitigation strategies across the region. The objectives are to:

1. understand the state and dimensions of pre-pandemic educational inequalities in SSA;
2. analyse how COVID-19 impacted student learning and performance;
3. analyse COVID-19-induced education policy responses in the region and assess their impact on education inequalities; and
4. examine how existing policy responses can be improved to better target and address inequalities.

As part of this regional study, three research teams conducted country case studies in Nigeria, Benin, and Tanzania to provide an in-depth national-level analysis². The country selection reflects regional variation (West and East Africa) and diverse population and demographic structures. While this report employs evidence from these individual country case studies, the purpose is to speak extensively on the entire region and discuss the short- and long-term educational inequalities emerging from the pandemic.

In this chapter, we focus only on the impact of the pandemic on primary and lower secondary education, as this foundational stage of learning serves as a fundamental building block for all subsequent learning. Failure to understand and address prevailing disparities and marginalisation at this foundational stage could have far-reaching consequences. We highlight trends, dimensions, and drivers of educational inequalities in SSA to provide valuable insights into how COVID-19 interacts with existing structural concerns to generate new inequalities or deepen existing ones. Tracking the evolution of education inequalities in this way

² See the full country case studies in the 'Additional publications of the State of the SDGs initiative' section..

will be crucial to understanding regional progress made on SDG 4 and other Goals.

The rest of chapter 2 is organised as follows: Section 2 provides an overview of the state and drivers of pre-COVID inequalities in education (Objective 1). It also discusses the immediate impact of the pandemic on education and the policy responses by governments to curb the impact of the pandemic on education (Objective 2). Section 3 discusses the methodology and data collection method used for the study. Section 4 further discusses the findings and assesses the effect of COVID-19 and the education policy responses on learning, inequalities, and exclusions (Objective 3). Section 5 discusses how existing policy responses can address and target educational inequalities and exclusions (Objective 4).

Background

Overview of education performance pre-COVID-19

Over the past 20 years, SSA has made significant strides in improving educational outcomes across several indicators. Most countries have made progress towards universal primary enrolment in the context of the Millennium Development Goals (MDGs) and SDGs. For example, the out-of-school population has dropped significantly in some countries, such as in Ethiopia where it dropped from 6.7 million in 2000 to 3 million in 2017, a 54% decrease (UNESCO, 2022a). In 2019, SSA had a gross enrolment rate of nearly 99% at the primary school level, compared to 82% in 2000.³ World Bank Development Indicator data show that at least 30 of the 48 SSA countries achieved increases in gross enrolment from 2000 to 2019. Yet despite such progress, enrolment rates still fall short of global benchmarks. In 2019 (the year before the onset of COVID), global gross enrolment rates were 101% for primary, 76% for secondary, and 39% for tertiary education, according to the World Development Indicators (World Bank, 2022). In comparison, SSA enrolment rates for the same year were 99% for primary, 44% for secondary, and 9% for tertiary education which, while an improvement from 2000 figures (66%, 32%, and 6%, respectively), still lag behind global levels. Moreover, enrolment figures have been criticised for often masking the true state of education in the region. By exploring changes in enrolment over time, Lewin and Sabates (2012) reveal that in some SSA countries, progress has been very uneven, and overall expansion in enrolment may conceal large increases in lower grades and little change in completion rates. Lewin and Sabates argue that despite improved gross enrolments, a good number of school-age children are still out of school, only two-thirds reach the last grade of primary school, and many of those enrolled are overage, repeat years, or unable to complete a full basic education cycle, particularly where lower secondary grades are included.

Thus, as of 2018, average years of schooling in Africa stood at approximately 5.6, compared to the global average of 8.5

³ Note that the gross enrolment rate includes children of all ages attending primary school, as opposed to the OOSC rate, which captures primary school-age children (6-11 years old) who are currently out of school.

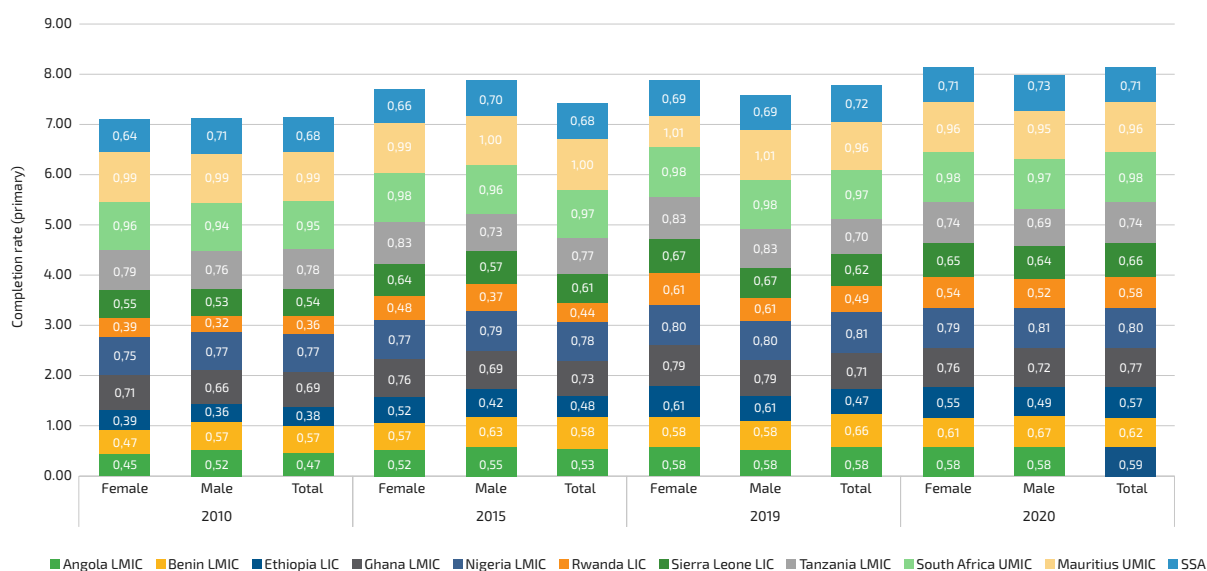
(Nabassaga, 2020). In the decade leading up to the pandemic, an 18-year-old from the SSA region had an expected 8.3 years of schooling, which is below the benchmark of 14 years and less than in regions like North America (13.4), Europe (13.1), Latin America (12.1), and the Middle East and North Africa (11.6) (World Bank, 2021).

Moreover, despite improvements in access to education, learning levels remain low, with adult literacy rates still below 50% in many countries in the region (Roser & Ortiz Ospina, 2016)⁴. The poor quality of learning has been attributed to factors such as the lack of well-trained teachers, inadequate learning materials and related infrastructure, and distance from home to school (Musau, 2018).

Additionally, education inequality is rife in the region. Studies have documented high levels of variation in educational access and outcomes between SSA countries, between the region and the rest of the world, and between socio-economic groups within countries in the region (UNESCO Institute for Statistics, 2021a). As can be seen in Figure 2.1, school completion rates in SSA varied across countries in the decade leading up to the outbreak of COVID-19. While the regional completion rate has moderately improved over the years, from 64% in 2010 to 71% in 2020, it remains low, with disparities between genders and countries, particularly by income groups. Countries like Mauritius, South Africa, Nigeria, and Ghana, which are ranked higher in income classification (middle income), have higher completion rates than those ranked lower; and for each country, there is a clear gap between male and female completion rates over the years (See Figure 2.1).

⁴ According to World Bank data, there are 11 countries in SSA where adult literacy rates are below 50%: Benin (42), Burkina Faso (39), Central African Republic (37), Chad (22), Guinea (40), Guinea-Bissau (46), Liberia (48), Mali (31), Niger (35), Sierra Leone (43), and South Sudan (35).

Figure 2.1. Primary school completion rate for selected SSA countries

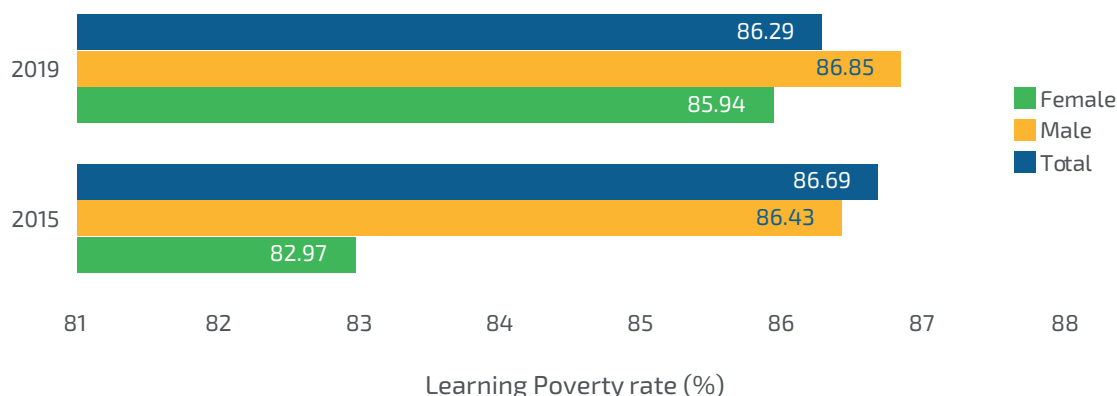


Note. Adapted from Data for the Sustainable Development Goals by UNESCO Institute for Statistics (2021a).

Gender inequalities are also manifested in other education indicators. For example, UNESCO out-of-school figures show that more females (48.9 million) than males (46.01 million) were out of school in 2019. In addition, in relation to learning levels, Figure 2.2 shows that while the learning poverty rate dropped marginally between 2015 and

2019, it has increased along gender lines, with a slightly higher rate among boys than girls, according to World Bank data. However, information from other indicators like the Harmonized Test Scores (HTS) have found that boys perform better than girls in most SSA countries, making it difficult to draw clear conclusions in relation to gender disparities (World Bank 2021).

Figure 2.2. Learning poverty in SSA, 2015 and 2019



Note. Adapted from the 2015 and 2019 Gender Statistics DataBank by World Bank (2023).

Sources/drivers of inequalities and exclusions pre-COVID-19

Educational inequalities predate the impact of the pandemic on education systems and are among the factors that have stalled progress towards attaining SDG 4 (inclusive and equitable education). Existing literature provides insight into some of the key drivers of educational inequalities and exclusions in the region (for example, see Alesina et al., 2021; Azomahou & Yitbarek, 2021; Manea & Naso, 2020; Somasse, 2020; Nevo & Egenti, 2019). Available studies suggest that the persistence of these inequalities is underscored by several interconnected factors that can broadly be grouped into two categories: demographic and socioeconomic factors.

Demographic drivers

Gender disparities

Gender is a key driver of educational inequalities in SSA, with boys benefitting disproportionately from emerging educational opportunities. According to Psaki et al. (2018), SSA not only has the lowest level of regional education attainment in the world, but also the highest degree of educational inequality in favour of boys. Twelve (out of 17) and 15 (out of 20) countries in the world where girls have not yet caught up with boys in primary and lower secondary school enrolment, respectively) are found in SSA (UNESCO, 2020). Males in the region have a higher literacy rate (74%) than females (61%), and as shown in Figure 2.1, a higher primary school completion rate (73%) than females (69%)⁵.

⁵ These are adult literacy rates as reported on the World Bank Database.

These disparities result from the interaction of many factors, including cultural norms and traditions, religious beliefs, poverty and economic constraints, as well as different forms of discrimination and gender-based violence in schools, all of which combine to create an atmosphere that is more favourable for boys than girls. Table 2.1 shows gender differences in the number of out of school children (OOSC) across ten representative SSA countries. Specifically between 2010-2019, the number of female OOSC has consistently surpassed the corresponding male numbers in all countries except South Africa and Mauritius (both of which are upper middle-income countries).

Table 2.1. Total out-of-school children in selected SSA countries by gender (2010, 2015, 2019)

Country	2010 (000s)			2015 (000s)			2019 (000s)		
	Female	Male	Total	Female	Male	Total	Female	Male	Total
Angola	547	279.1	809.2	712.7	595.3	1,250	752.8	714.9	1,400
Benin	122.7	99.76	214.4	158.6	167.1	336	144.8	128.9	280.4
Côte d'Ivoire	911.6	759.9	1,683	608	492.6	1,105	318.7	250.9	567.3
Ethiopia	2,335	2,145	4,486	1,787	1,504	3,292	1,758	1,402	3,044
Ghana	357.6	367.7	713.3	285.8	262.4	591.6	385.4	392.2	787.2
Mauritius	194.7	655.9	703.4	78.02	476.5	423.7	27.87	304	199.7
Nigeria	3,992	3,610	7,468	4,319	4,087	8,382	4,601	4,751	9,532
Rwanda	58.11	76.04	135.4	39.85	51.12	92.64	40.81	53.52	93.97
Senegal	303.7	349.5	658.9	370.3	446.4	820.9	379.4	487.3	866.4
Sierra Leone	141.4	143.7	290.8	103.2	117.4	230	96.9	113.7	218.1
Tanzania	453.3	575.3	1,002	753.5	938	1,690	858.2	1,008	1,918
South Africa	213.1	279	489.1	198.8	264.6	457	265.5	349.6	605.4

Note. Adapted from *Data for out of the school* by UNESCO Institute for Statistics (2021b).

Type of settlement/geographical location:

Rural dwellers have been found to have varying and disproportionate access to educational opportunities as compared to their urban counterparts. This is a result of many factors, but especially the fact that rural populations are more likely to be poor and have lower levels

of education. The poverty rate in rural SSA is about 46%, compared to 18% in urban areas (Beegle et al., 2016), and parents of children in rural areas have lower levels of education (Irvin et al., 2011). Education tends to be valued less in rural areas, where child marriage and child labour rates are higher, with parents often compelling their children to work at home or on the farm without providing them the necessary support for schooling (Chinyoka & Naidu, 2014; Sumida, 2017). Secondly, rural areas oftentimes have inadequate infrastructure for learning, including a lack of technology and digital facilities, which negatively impacts the quality of learning for children in those contexts (Agbor, 2012). Zhang (2006) found that, given the same socio-economic and learning conditions as urban students, sixth graders in rural schools in Mauritius and Seychelles could outperform their urban counterparts in literacy and mathematics, and the performance gaps between the two groups dropped by over 50% in Botswana, Malawi, Zanzibar, and Zambia when adjustments were made for differences in learning conditions and students' backgrounds.

Third, there is a general lack of quality teachers in rural areas. According to The Brookings Institution (Agbor, 2012), rural schools generally have less qualified teachers and not enough teachers for the number of children enrolled, as evidenced by the high teacher-pupil ratios in most rural regions of Africa. Teachers, especially those with more experience and better qualifications, prefer urban to rural schools since the former offer greater opportunities and better salaries (Sumida & Kawata, 2021). As a result, findings by Brookings (Agbor, 2012) suggest that schooling in rural parts of SSA means students are less likely to learn critical writing, reading, and maths skills. This is most pronounced in countries like Uganda, South Africa, Malawi, Botswana, Lesotho, and Zimbabwe, where the rural-urban learning disparity is most prominent (Agbor, 2012).

Socioeconomic drivers

Poverty and uneven resource allocation

Low income levels and high poverty rates are two of the region's most prominent drivers of education inequality. According to UNESCO, poverty is one of the most significant factors preventing students from enrolling in school (UNESCO Institute for Statistics [UIS], 2019). There is also the challenge of inadequate infrastructure (marked by overcrowded classrooms, dilapidated school buildings, and a lack of computer facilities and science laboratories) and under-resourced schools where there are underpaid and poorly trained teachers and a lack of basic teaching and learning tools such as textbooks, blackboards, and pens and paper (Hillman & Jenkner, 2004). Of the 33 sub-Saharan African nations examined by the United States Agency for International Development [USAID] (2015), 21 lacked sufficient teaching and learning resources, especially textbooks. Students were required to share materials with at least one of their peers in 11 of the 33 countries for which recent data are available.

Furthermore, the pupil-teacher ratio (PTR) in primary education across SSA remains poor, despite improving over the last two decades. On average, there is only one trained teacher for every 58 students in primary schools, dropping to around 43 pupils per trained teacher at the secondary level. This figure varies widely across countries, however, ranging from 20:1 in Mauritius to 80:1 in the Central African Republic, with two-thirds of SSA countries having official PTRs of over 40:1 (USAID, 2015). According to UNESCO (2021), the implication of such high PTRs is that students will have less one-on-one time with their teachers and receive less personalised teaching, which will decrease the quality of their learning. UNESCO (2021) estimates that SSA countries must recruit a total of at least 15 million teachers to reach the SDG 4 education targets by 2030.

Religion and social norms

Cultural practices and religious beliefs have also played key roles in shaping historical inequalities in education between male and female students, for instance, and between individuals in general across SSA. Studies have shown that while some cultures and religions are hostile towards education, regardless of social class, others encourage, promote, and support formal and inclusive learning. For example, Archibong (2018) and Ukiwo (2007) show that persistent educational inequality in Nigeria is associated with unequal distribution and access to economic and political resources due to religion and ethnicity. The southern part of the country, for example, had early exposure to western education which has generated norms supportive of school participation. In contrast, religious and cultural factors in the northern part of the country mean religious (Islamic) education is prioritised over formal education (Dev, Mberu, & Pongou, 2016), and so there are higher numbers of OOSC, accounting for 67% of total OOSC in the country.

An examination of global data by Norton and Tomal (2009) shows that the enforcement of religious beliefs, coupled with cultural norms, can negatively impact education attainment, revealing how religious and social/cultural norms can shape the educational achievement of individuals and groups, and how this has been an important driver of educational inequalities between groups in the SSA region even before the pandemic. Further evidence from Nunn (2014) and Montgomery (2017) has also shown that these differences are, in part, a result of the colonial experience of the different religious, ethnic, and social groups.

Methodology and data collection

This study adopts a two-pronged methodological approach—a quantitative method involving descriptive data analysis of education indicators of interest with data collected from the individual case studies already conducted in Nigeria, Benin, and Tanzania and a qualitative analysis involving an extensive secondary research and a review of findings from existing literature (Folarin et al., 2023; Mpapalika & Katera, 2023; Talba et al., 2023).

The qualitative method complements the quantitative analysis to provide nuance and insight into the causes and effects of the

various forms of educational inequalities that emerge through the descriptive analysis.

Finally, we also draw insights from country case studies already conducted in Nigeria, Benin, and Tanzania, which followed a similar methodological approach (Folarin et al., 2023; Mpapalika & Katera, 2023; Talba et al., 2023). The quantitative analysis for the three countries involved regression analysis using secondary data from nationally representative surveys (the National Living Standard Surveys) and administrative data in estimating the trends in and dimensions of educational inequalities pre- and post-COVID-19.

Findings

Mitigation measures adopted in response to COVID-19 to allow continued learning

To limit the impact of school closures on student learning, governments across SSA implemented several mitigation measures aimed at ensuring the continuity of learning during the pandemic. In countries like Ghana, Kenya, Nigeria, Burkina Faso, Côte d'Ivoire, and Egypt, technical committees and working groups were formed at national and sub-national levels to develop alternative approaches for learning. These groups collaborated with other government bodies and key education stakeholders in the private sector, civil society organisations (CSOs), and development partners to provide online platforms, tools, and applications to sustain learning (Association for the Development of Education in Africa [ADEA], 2020). The implementation of mitigation measures also came about through partnerships with private radio and TV media houses, education technology (Ed-tech) and information and communications technology (ICT) companies, and network service providers (see Box 2.1 below for examples).

The mitigation measures and support from governments, CSOs, and international organisations came in different forms. Below, we discuss them in three sections: (a) support provided nationally to facilitate learning during school closures, (b) support provided nationally to promote access and learning when schools reopened, and (c) support provided by international organisations. These measures aimed to sustain educational accessibility and support digital access and skills during and after school closures, help individuals navigate the challenges of COVID-19, and mitigate vulnerabilities (such as loss of learning opportunities) that resulted from associated lockdowns across the region.

National support for learning during school closures

Many countries in SSA adopted distance learning strategies, such as online classes, radio and television broadcasts, and take-home assignments, to ensure students could continue learning even when schools were closed. While the initiatives had some similarities, there were peculiarities in their design, timing, and implementation across countries (see Box 2.1). Broadly, multi stakeholder partnership between



Many countries in SSA adopted distance learning strategies, such as online classes, radio and television broadcasts, and take-home assignments, to ensure students could continue learning even when schools were closed.

government, telecommunication, EdTech industry and donors were prevalent across the region.

Some SSA countries went further, providing digital devices such as laptops and tablets to students who did not have access to these resources at home, with an eye to promoting distance learning. For example, in South Africa, the government promised to provide up to 730,000 laptops to learners from poor households to support remote learning during the pandemic (Van der Merwe, 2020). By July 2021, about 170,000 laptops had been ordered and 90,060 had arrived in the country, ready for distribution⁶.

Box 2.1. Summary of SSA country approaches to learning continuation during COVID-19.

Kenya: The government introduced remote learning through television and radio broadcasts, as well as online platforms, such as Eneza Education, that offer mobile-based learning services.

South Africa: The government launched the “Catch-Up Plan” program to provide extra support to learners with textbooks, workbooks, and study guides. The program also included a national tutoring initiative and teacher training on remote teaching.

Rwanda: The government developed a distance learning program with televised lessons, radio broadcasts, and online learning platforms. The program also distributed printed learning materials to students in rural areas without access to technology.

Senegal: The government partnered with local television and radio stations to broadcast educational content, including lessons in maths, science, and language arts. They also distributed printed learning materials and worked to ensure that students had access to devices and the Internet.

Ghana: The government introduced a program called “Ghana Learning TV,” which broadcasts educational content for students in grades KG to 12. The program is broadcast on free-to-air television channels and is also available online.

Uganda: The government introduced a program called “Skilling Uganda,” which provides vocational and technical training for students who cannot continue their academic studies due to the pandemic. The program includes online and in-person training with appropriate safety measures.

Tanzania: The government has partnered with telecommunications companies to provide free access to online educational materials, including video lessons and

⁶ In 2021, about 1,123 laptops were delivered to schools for pick up by students, while about 5,000 students had already received laptops via the South African Post Office (SAPO) (South African Government News, 2021).

e-books. The government has also encouraged teachers to use social media platforms like WhatsApp to communicate with their students and share learning materials.

Nigeria: The government launched a program called "Nigeria Radio School," which provides educational content to students in primary and secondary schools through radio broadcasts. The program also includes interactive components like quizzes and assignments to keep students engaged.

Zimbabwe: The government developed a distance learning program that included online learning platforms and television and radio broadcasts. The government also provided printed learning materials to students who did not have access to technology.

Ethiopia: The government developed a program called "Education Cannot Wait," which provides emergency support to vulnerable students affected by the pandemic. The program includes funding for remote learning and distributing learning materials and hygiene supplies to students and schools.

National support to promote access and inclusion when schools reopened

Support for vulnerable groups

Governments across SSA provided learning materials, study guides, scholarships, and school fee subsidies for the most affected groups. For example, in Burkina Faso, priority was given to ensuring the security of the examination/graduation class (especially those affected by conflicts and unable to learn from home) by grouping and relocating them to more secure localities where preparatory remedial classes were organised for them (ADEA, 2020). In addition, some SSA countries provided targeted support for vulnerable students, such as those with disabilities, orphans, and girls who were at risk of dropping out of school. For example, the Ugandan government, in partnership with the Starkey Foundation, successfully carried out a countrywide assessment of learners with hearing impairments and was able to aid learning by supplying hearing devices to about 1,554 students from 296 primary schools in 79 districts across Uganda (World Bank, 2020). This helped to drive access to learning and inclusion for vulnerable students.

The COVID-19 pandemic heightened cases of child abuse, neglect, and exploitation, and as a result affected students struggled with learning as schools reopened (Louis, et.al., 2022). Governments across SSA increased efforts to protect children and provided mental health support for students who may have experienced anxiety, stress, or other mental health challenges

caused by the pandemic. Examples of these measures include the establishment of a national toll-free mental health helpline in Rwanda to provide counselling services to children and adolescents that provided round-the-clock free and confidential counselling services (Louis et al., 2022). Also, Kenya launched a child-protection hotline in December 2020 to provide an avenue for children to report cases of abuse or neglect (Wambui, 2021).

Investments in the education system

To ensure that schools reopened and remained safe for students, governments across SSA invested in improving school infrastructure through the provision of water, sanitation, and hygiene (WASH) facilities on school premises as a measure to help mitigate the impact and prevent the spread of the virus (Giné-Garriga et al., 2021). For example, hand-washing facilities were made available for schools in Benin, including hygiene kits, soap, face masks, water, as well as training for school infirmary staff (Global Partnership for Education [GPE], 2022).

Several governments also implemented programs to support teaching when schools reopened. The pandemic had a significant impact on teachers, school leaders, and support staff who faced numerous challenges in adapting to the new learning environment (McLeod & Dulsky, 2021). Teachers were faced with an increased workload, often developing new digital skills to adapt to remote learning and develop innovative ways to deliver learning remotely. This was particularly challenging in areas with limited access to technology and internet connectivity. Measures to support teachers included, for example, the government of Benin, in partnership with GPE, training teachers in digital skills to improve the quality of teaching and learning, and some state governments in Nigeria supporting teachers through the provision of palliatives in the form of food items, to help them cope with the effects of the pandemic (GPE, 2022).

Overall however, despite the commendable efforts discussed above by governments and stakeholders to mitigate the effects of school closures during the COVID-19 pandemic, significant concerns remain about learning loss and reduced access to education in SSA. According to the World Bank, it is estimated that school closures in the region resulted in an average of 0.4 to 0.6 years of lost learning, with some countries experiencing losses of up to a year. Additionally, the net attendance rate in the region dropped from 91% in 2019 to 58% in 2020, according to UNESCO (2021). These statistics highlight the devastating impact of the pandemic on education in the region. They also underscore the urgent need to understand who was most impacted, and for sustained and targeted efforts and investments to address the resulting learning loss and access challenges.

Support from international organisations and agencies

To help countries recover from COVID-related losses in education, the international community provided financial support to some SSA countries, such as Burkina Faso, the Democratic Republic of Congo,

and Nigeria, among others. Funding heavily relied on external sources from, for example, GPE, the World Bank, UNICEF, and Education Cannot Wait (ADEA, 2022) (See Table 2.2). For instance, GPE has also provided USD 250 billion of support to 67 developing countries (35 of which are in Africa) to mitigate the impact of the pandemic on education (ADEA, 2020).

Table 2.2. Donor support to education sector during COVID-19

International Organisation/Agencies	Support/Aid Provided	Cause	Recipient Country	Source
Education Cannot Wait	USD 15 billion	To support the COVID-19 global humanitarian response	Burkina Faso and the Democratic Republic of Congo	ADEA, 2022
Global Partnership for Education (GPE)	USD 250 billion	To mitigate the impact of the pandemic on education	35 African Countries	ADEA, 2020
Global Partnership for Education (GPE)	USD 70,000	To support the Ministry of Education with the development of a COVID-19 response plan, including the broadcast of lessons via radio	Benin	GPE, 2022
UNICEF	Technical Support	To enhance the effectiveness of home-based learning programmes	Nigeria	Nasir, 2020
World Bank	USD 7 million	To support the back-to-school agenda, specifically the provision of handwashing facilities for schools	Benin	GPE, 2022

Note. Elaborated by the authors.

Impact of COVID-19 on education inequalities in SSA

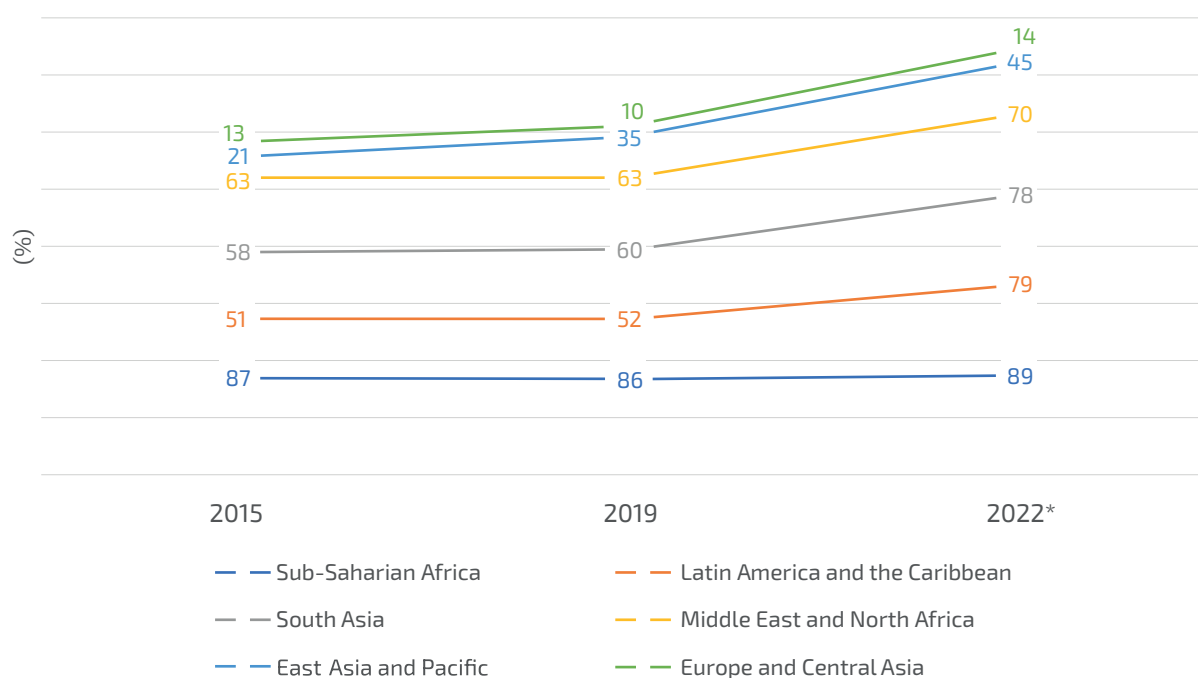
Based on the preceding discussion of the structural inequalities preceding COVID-19 and government interventions during the pandemic, we turn next to evaluate how those persistent inequalities interacted with COVID-19 shocks to produce multifaceted effects on education systems in SSA. Firstly, we examine how COVID-19 has affected education outcomes, shedding light on the intricate mechanisms linking the pandemic to educational disruptions. We then investigate the root causes underlying the unprecedented challenges faced by educational systems worldwide. We additionally explore how different student groups have been diversely impacted by disruptions in education in terms of access to and quality of learning. As we explore these dimensions, we also assess their interconnectedness, unveiling a complex web of interactions which together explain the pandemic's influence on education. Finally, we underscore the role of resilience as a moderating factor, examining its potential to mitigate the adverse effects of the pandemic on education outcomes, and offer insights into strategies for building more robust education systems in the face of future crises.

Impact of COVID-19 on learning

While the mitigation strategies employed during COVID-19 evidenced concern to support students and facilitate learning during lockdowns, the effectiveness of the measures was hindered by pre-existing problems with education systems in the region. Most importantly, there were concerns about how equitable the measures were, particularly in terms of their impact on already marginalised groups, such as the physically-challenged and those from less-privileged economic backgrounds. This is particularly salient in SSA, given that inequalities in access to education and learning outcomes were already pronounced.

The number of children that are considered learning poor has increased across all regions of the world, with SSA recording the lowest percentage point increase between 2019 and 2022 (World Bank, 2022). However, not only has the region's learning poverty rate (89% in a 2022 simulation) increased in the post-COVID period, which indicates that initial progress made between 2015 to 2019 has been lost, it has also maintained the highest level of learning poverty compared to other regions (see Figure 2.3 below). Consequently, the severity of children's inability to read a simple text has also remained most severe in the region at 21.4% in 2022, which is at least 6% points greater than in any other region. Children with such learning challenge have also remained 26.7% behind the minimum proficiency level (higher than any other region), as measured by the learning poverty gap (World Bank, 2022)

Figure 2.3. Learning poverty levels across the world between 2015 and 2022

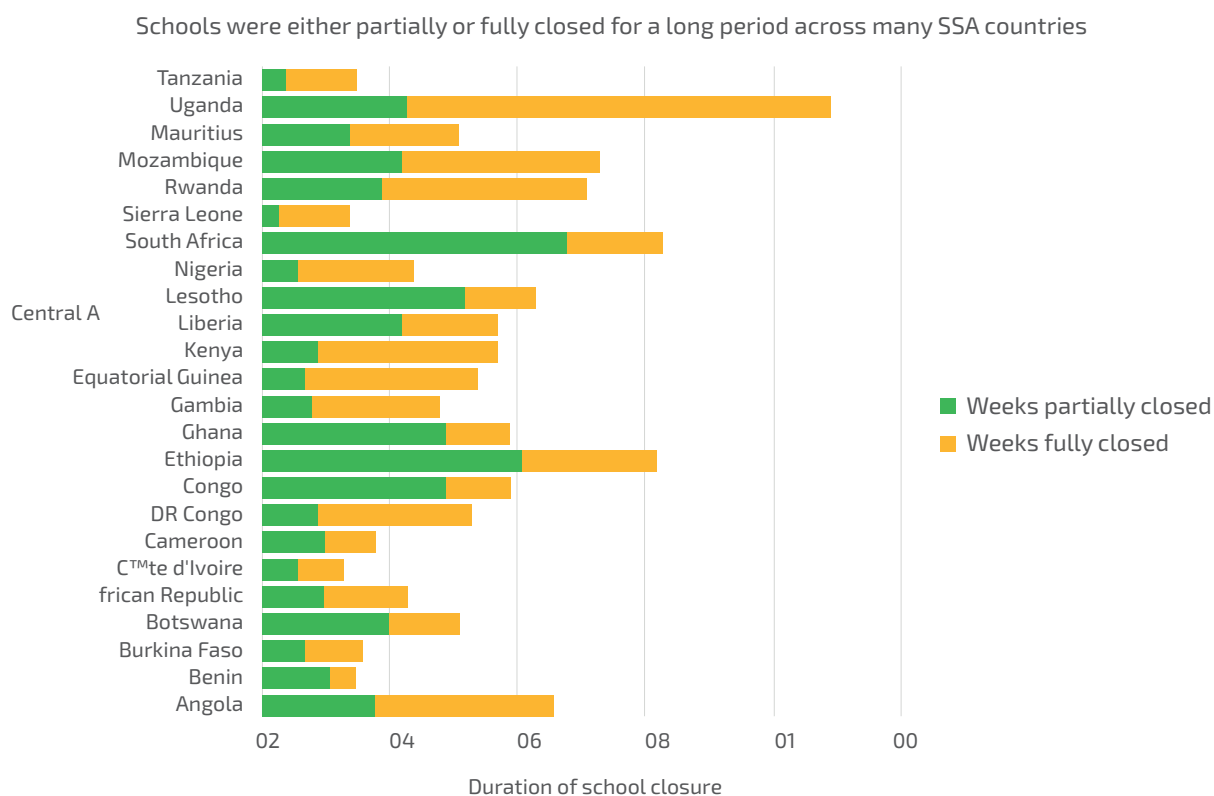


Note. Elaborated by the authors.

Impact of sudden school closures

For most countries, school closures were announced in March 2020 as part of efforts to contain the spread of the virus. Schools reportedly closed completely in over 90% of countries globally, with a median closure time of 17 weeks (UNESCO & Global Education Coalition, 2021). In many SSA countries, academic calendars were interrupted, with many schools being closed for extended periods. On average, SSA schools were closed for at least 26 weeks, with variation within and between countries. UNESCO COVID-19 monitoring data (UIS, 2022)⁷.

Figure 2.4. Duration of school closure across some SSA countries



Note. Adapted from COVID-19 Education Response Country Dashboard by UNESCO UIS (2022).

These school closures have had high social and economic costs, such as the loss of instructional time, causing many students to fall behind in their studies, prolonged years of schooling, and increased dropout rates. Impacts are particularly severe for the most vulnerable and marginalised boys and girls and their families (UNESCO, n.d.). Although the lack of robust and comparable datasets on student learning in SSA is a challenge, emerging evidence shows that COVID-19 and the attendant school closures have been associated with a substantial loss in learning (Moscoviz & Evans, 2022). In South Africa, for example, grade 2 pupils lost 57%-70% of a learning year, while grade 4 pupils lost 62%-81% of a learning year compared to their peers in the pre-pandemic period (Ardington et al., 2021). In Uganda (where schools were closed for about two years), the share of pupils unable to read alphabet letters will double by

⁷ UIS has a database that tracked school closures caused by the COVID-19 pandemic for every country up to March 2022.

2021 (Sandefur, 2022). In Malawi, students' learning across English, maths, and Chichewa was found to be 97 percentage points lower than the expected level, had the school closures not occurred. This is equivalent to a total of about two years of learning loss when compared to the pre-pandemic learning levels (Asim et al., 2022). In some countries, such as Chad and South Sudan, expected total years of schooling increased by as much as 10% and 16%, respectively, as a result of the closures (Evans et al., 2021). School dropout rates also increased in a number of countries when schools reopened. For example, Malawi recorded a dropout rate of 4.3%, compared to a pre-pandemic rate of 1.7%, while in Kenya, researchers found that the risk of dropping out tripled, particularly among girls of secondary school age, increasing from 3.7% before the pandemic to 9.4% (Moscoviz & Evans, 2022). Combining data from the National Longitudinal Phone Survey (NLPS) with information on when schools closed indicates that Nigerian children may have lost up to 0.29 adjusted years of schooling, considering both the increase in dropouts and the imperfect mitigation of school closures (Lain & Vishwanaath, 2022). School enrolment in Nigeria dropped from 90% in 2019 to 82% after schools were reopened in 2020 (Dessy et al., 2021). In line with this, Fore and Malpass (2021) observed that many children in SSA did not return to school after the lockdown, mostly due to increased child labour, early marriage, teenage pregnancy, and lack of money to pay school fees.

Impact of the technology and digital divide on learning

While governments intervened speedily, they did not have sufficient time to plan, and this led to inefficiencies in the measures implemented. In many cases, lockdowns were imposed suddenly and indefinitely, leaving little time for schools to prepare and students to transition to alternative modes of learning (eLearning-Africa & EdTech Hub, 2020). For example, in Malawi, the government implemented a radio-based programme to reach students during school closures. While the programme was initially successful in reaching a large number of students, there were concerns about the quality and effectiveness of the learning materials and lack of radios for some students, particularly those in rural areas (UNICEF Malawi, 2023). Similarly, in Kenya the government provided online learning resources by partnering with telecommunication companies to make educational materials available and broadcast lessons to students. Notwithstanding, there were concerns about the accessibility of these resources, particularly for students who lacked access to reliable internet and digital devices (Gichuhi & Kalista, 2022).

A major constraint to educational access and achievements in SSA is the glaring digital divide between and within groups. Technology and digital infrastructure are key to improved access to quality education (U.S. Department of Education & Office of Educational Technology, 2017; Haleem et al., 2022). However, technology adoption in education systems in most African countries remains poor. Where technology is present, it is generally accessible only to rich and urban populations.

According to World Bank development indicators, internet penetration in Africa stood at 29% in 2020, well below the global coverage of 60%.

This implies that more than two-thirds of the region's population lacks internet access, a figure which could be even higher considering that many people hold multiple devices. Disparities also exist across sub-regions (see Table 2.3) and between countries, ranging from 6% of the population with internet access in Uganda, to as high as 79% in Seychelles, with South Sudan (7%), Rwanda (24%), Nigeria (36%), and South Africa (70%) lying in between. Most of those with internet access are from urban and high-income households, whose children can attend expensive private schools where digital facilities are used to aid teaching and learning, thus giving these children a learning advantage over their counterparts from less-privileged backgrounds (Azubuike et al., 2021). In fact, only 27% of rural dwellers and 34% of women have access to the internet across SSA (Statista, 2023). Overall, children from rural and low socio-economic backgrounds tend to have limited access to the internet, computers, mobile phones, functional ICT skills, and active parental support (Azubuike et al., 2021).

Table 2.3. Share of school-age children with no internet connection by sub-region

Sub-region	School-age children 3-17 years old without internet access at home
West and Central Africa	95% (n=194 million)
East and Southern Africa	88% (n=191 million)
Middle East and North Africa	75% (n=89 million)
Global	67% (n=1.3 billion)

Note. Adapted from *COVID-19: A Catastrophe for Children in Sub-Saharan Africa: Cash Transfers and a Marshall Plan Can Help* by UNICEF (2020).

A study conducted by MIF (2021) reported that across SSA, 89% of learners had no access to household computers, 82% lacked access to the internet, and 20% lived in areas with no mobile network at all. In fact, about 28% of teachers in Nigeria reported that their students were not actively learning during the school closure period due to a lack of the necessary digital learning tools (The Education Partnership [TEP] Centre, 2020).

The need to continue learning while at home has significantly increased the adoption of technology for education and provision of EdTech services in Africa. SSA witnessed a surge in the use of digital alternatives to traditional, in-person learning. For example, the EdoBEST⁸ initiative was fully adapted to support remote learning in Edo state in Nigeria during lockdown (Dawodu, 2021), while eLimu⁹ in Kenya recorded an increase in subscriptions and time spent on the platform, as did Nigerian-based uLesson¹⁰ and SimbiBot¹¹ (Ugwuede, 2020). The use of technology for education is expected to become more widespread even after COVID-19 (eLearning Africa & EdTech Hub, 2020), which while potentially beneficial for the educational system in the region, could also exacerbate inequalities in learning.

8 EdoBest is an online initiative of the Edo State government in Nigeria, to ensure that every child in the state can continue learning while schools are closed.

9 eLimu is a personalised learning app where kids between the ages of 5 and 12 years can access basic education and learn in a fun and interactive manner.

10 uLesson is an online tutoring app for students in primary (4 – 6) school.

11 SimbiBot app is an e-learning platform that helps students learn and familiarise themselves with any topic across all subjects (maths, basic science, English, etc).

Impact of COVID-19 on poverty and economic hardship

The COVID-19 pandemic took a great toll on incomes and food security, causing economic hardship in several SSA households due to job loss and restrictions on movement that affected economic and business activities. High levels of job losses were recorded across the region, from 62% in Kenya and 61% in Gabon to 42% in Democratic Republic of Congo, 33% in Central Africa, and 29% in Ghana (Paci, 2021). This indicates a significant fall in employment earnings for many households. Other income sources such as agriculture, remittances, and household businesses were also affected. In fact, Paci (2021) reported that revenues from household businesses dropped by over 70% in Uganda, Gabon, Zambia, South Sudan, Malawi, and Mali. These impacts on livelihoods resulted in harder economic conditions. According to UN estimates, while the number of poor people in SSA was already projected to grow from 2020 to 2021, the pandemic is estimated to have doubled the rate, pushing an additional 30 million people into extreme poverty in the region (UN, 2021).

As a result, families in SSA have found it difficult to maintain pre-pandemic consumption levels, including being able to support learning for their children during school closures, as well as meet other needs such as school fees when schools reopened. This has had an immediate post-pandemic effect, with child labour, teenage pregnancy, and early marriage becoming more pronounced and leading to higher school dropout rates and a decrease in enrolment rates, especially for the most vulnerable groups such as girls and children from poorer socio-economic backgrounds (Fore & Malpass, 2021; Moscoviz & Evans, 2022; Dessy et al., 2021). This has all affected educational inequalities, with research suggesting that COVID-induced learning loss is generally concentrated among the poorest children (Moscoviz & Evans, 2022).

Impact of education disruption on different groups

In this section, we explore how disruptions in education affected different groups in SSA. Specifically, we explore the impact according to four interconnected characteristics: rural-urban residence, gender, socio-economic background, and school type (public vs. private), and the implications of these differentiated impacts for educational inequalities in the region.

Rural and urban households

The inception of remote learning, which followed school closures across most countries, highlighted the extent of the digital divide between urban and rural areas. As discussed above in section 4.2.1, digital infrastructure—comprising the availability of computers and other ICT devices, internet connection and access, stability of power supply, and affordability of data bundles for internet connection—is unevenly distributed, with urban areas having wider coverage than rural areas (Choung & Manamela, 2017; Ogbo et al., 2017; Olanrewaju et al., 2021). Students from urban households were more likely to engage in some form of remote learning than

students from rural schools with limited access to remote learning technologies, as shown by evidence from Kenya, Nigeria, and Burkina Faso (Human Rights Watch, 2020). A study on Nigeria, Tanzania, and Rwanda (Chair & De Lannoy, 2018) found that young people, particularly those in rural areas, were without internet facilities resulting in low educational attainment, low income, and a lack of digital skills. This lack of digital access and learning opportunities made it difficult for such students to learn during lockdowns, resulting in a greater risk of learning loss than among their urban counterparts, and of the gap in learning outcomes between rural and urban students widening further (Aoyagi, 2021).

Moreover, studies have shown that about 14-20% of households in SSA suffered a net loss of at least one source of income due to COVID-19 (Maredia et al., 2022). Although research finds no significant difference in income loss between rural and urban areas in Kenya, Mali, Nigeria, and Senegal, higher and more pervasive poverty in rural areas means that rural households have struggled more than urban households to survive the economic hardships caused by the pandemic (Maredia et al., 2022). This has made it difficult for them to afford fees and learning materials, leading to a higher propensity for students to drop out of school in rural than urban areas. Evidence from Nigeria and Ethiopia shows that during the COVID-19 pandemic students from rural families were more likely to work in order to support their families, and so had little or no time to engage in learning (Aoyagi, 2021). For girls, early marriage, teenage pregnancy, and violence further combined to increase dropout rates as compared to boys, especially in rural areas (UNICEF, 2020). For example, in countries such as Uganda (Molek & Bellizzi, 2022) and Kenya (Zulaika et al., 2022), teenage girls were found to be more vulnerable to sexual and reproductive harm during the pandemic (see below).

Socioeconomic characteristics

School closures had a disproportionate effect on children from lower-income families both during the closures and after schools reopened. Students from wealthy homes recorded higher rates of online enrolment and lower levels of learning loss during COVID-19, compared to children from low-income households (Folarin et al., 2023; Mpapalika & Katera, 2023; Dang et al., 2022; Azubuike et al., 2021). In Nigeria, Azubuike et al. (2021) found differences in the types of digital technologies that low- and high-income households had access to for learning. Students from low-income households had access only to basic technology such as radio, television, and social media platforms (such as WhatsApp). Their counterparts from higher-income households had access to digital technologies like laptops, smartphones, education applications, and other interactive learning platforms like Zoom, which provided different avenues for learning.

Studies in Tanzania (Mpapalika & Katera, 2023; Feruzi & Li, 2020) found that learning through television and radio platforms was not very effective due to constant power outages and a lack of student-teacher interaction on these media. This is likely to have had a greater



Studies in Tanzania found that learning through television and radio platforms was not very effective due to constant power outages and a lack of student-teacher interaction on these media.

impact on children from lower-income households who relied on these means of learning, and who lacked access to alternative sources of power. The Nigerian and Tanzanian case studies also show that students from low-income households spent less time on learning at the peak of the pandemic compared to those from wealthier households (Folarin et al., 2023; Mpapalika & Katera, 2023). This was attributed to children from wealthier families having access to learning through alternative channels, both at school, being more likely to attend high-cost private schools with the resources and readiness to pivot to online learning, and at home, with greater access to resources that facilitated online learning such as computers, electricity, and internet connectivity. This has further perpetuated gaps in access to learning between the rich and the poor, with the disparities taking a new form based on access to technology.

Another key socioeconomic characteristic that influences education is the education status of parents. The literature on intergenerational mobility in education shows that children from educated families are more likely to go to school than those from less educated families (Alesina et al., 2021). This pattern was evident during COVID-19, as educated parents either employed private teachers or acted as teachers themselves for their children in order to ensure that the students remained engaged in learning. In contrast, children from poor households, where education levels among parents were lower, were mostly left with the option of learning with the assistance of their educated older siblings or neighbours, if any. In the absence of these options, the education of children of poorer households was completely disrupted by the pandemic (Folarin et al., 2023).

While alternative learning methods are less effective than face-to-face methods (Angrist et al., 2021), the importance of continuous learning indicates that learning loss among students with access to alternative means of learning would be lower than those without those means. This suggests that students from poor households are the worst hit by the pandemic in terms of learning loss (Moscoviz & Evans, 2022). Without targeted programmes to tackle this, unequal access to learning and differences in learning performance along socio-economic lines are likely to translate into accumulated disadvantages in learning at higher levels. Such educational inequalities also risk perpetuating socio-economic inequalities, since children from less educated and less-privileged homes are more likely to drop out of school, which in turn increases the out-of-school population, results in lower adult literacy rates, and leads to widening opportunity gaps in the labour market.

Gender

The disruption in learning caused by school closures affected girls in particular ways, who were more likely to experience early marriages, increased teen pregnancies, and increased domestic responsibilities. The school dropout rate increased markedly among girls; for example, it was found that girls in Malawi (82%) were less likely to re-enrol in school after the lockdown, compared to boys (89%), and this gap persisted even after controlling for marriages and child-bearing

(Kidman et al., 2022). The Mo Ibrahim Foundation (2021) estimated that over one million girls in the region will not be going back to school due to pregnancy during the lockdown. In Uganda, teenage pregnancies increased by 28% during the first lockdowns in 2020 (Molek & Bellizzi, 2022). In Kenya, Zulaika et al. (2022) found that girls who experienced pandemic lockdowns faced twice the risk of getting pregnant before the end of secondary school, and were three times more likely to drop out of school. They also found that these girls were more likely to be sexually active, and more likely to be sexually assaulted. In Gauteng, the most populous province in South Africa, the Ministry of Health reports that there was a 60% jump in teenage pregnancies between April 2020 and March 2021 (Bhengi, 2021).

The effect of the pandemic on girls also extended into psychological effects due to factors such as increased domestic violence and female genital mutilation. According to UNICEF (2020), incidents of gender based violence (GBV) against girls and women increased across different parts of SSA during the lockdown, as did the number of forced/child marriages. In particular, Ghana, Burkina Faso, Kenya, Madagascar, Malawi, South Africa, Uganda, and Zimbabwe recorded increased numbers of rape and other forms of GBV during the lockdown (UNICEF, 2020). In Tanzania, Grant (2020) reported that these issues can have short- and long-term psychological effects on girls, including on their attitude towards going back to school and their disposition toward furthering their education.

School type

Education is a public good, meaning the government is responsible for ensuring it is accessible to school-age children (Locatelli, 2018; Daviet, 2016). However, there is also private provision of education at all levels in African countries, including at the foundational level (Evans & Mendez, 2020), meaning that the type of school a child attends (public or private) has been a further source of disparity in learning in SSA. Prior to the pandemic, the average learning performance in private schools was perceived by parents to be higher than in government-owned schools (Evans & Mendez, 2020). However, the differences in performance are not clear, given that other factors beyond school type might contribute to the observed differences in student performance, including parental commitment and self-selection bias (which arises when private schools attract better performing students or students from higher socio-economic backgrounds) (Evans & Mendez, 2020). Nevertheless, because private schools are fee-charging, they have been found to be better resourced than public schools, and attract students from better resourced families (Gunnlaugsson et al., 2021). As a result, private schools were more likely to adapt to remote learning more efficiently.¹²

The perceived ineffectiveness of governments' interventions to support learning pushed private schools across the region to go a step further to support their students' learning. For example, some private schools in Tanzania combined home teaching packages (where students were given pre-prepared subject material and assignments) with online learning to boost effective learning among students (Mpapalika & Katera, 2023). The home teaching package



12 This specifically addresses 'elite' private schools. A more nuanced conversation of the low-cost private sector is outside the scope of this study. Additionally, the impact of the pandemic on low-cost private school study is currently under-researched.



The alternative learning system adopted in certain private schools, especially high-cost schools, would result in learning disparity.

involved teachers preparing topics and assignments for the students to answer. Also, in Nigeria, private schools adopted WhatsApp as the medium of learning for the students when schools were closed (Folarin et al., 2023).

These innovations implemented by some private schools at the peak of the pandemic to engage their students indicate that private school students spent less time away from learning, which in turn would increase their performance in subsequent academic sessions. In fact, Azubuike et al. (2021) found in the case of Nigeria that school type significantly explains whether a student was able to access remote learning during the lockdown, and whether they faced any challenges in the process: 71% of students who said they were not academically engaged during school closures were from government schools, compared to 29% from private schools; of those who were able to learn remotely, 54% attended government schools, compared to 46% from private schools.

Angrist et al. (2021) find that even if there was no learning gap by school type prior to the pandemic, the alternative learning system adopted in certain private schools, especially high-cost schools, would result in learning disparity. Students who attended private schools where innovative tools were adopted to sustain learning, would likely perform better than those attending either government schools or private schools where no alternative learning arrangements were available. Although this is still an under-researched area, available evidence provides an indication of how school type can influence educational outcomes, and how it contributed to educational inequalities related to the COVID-19 pandemic.

Interconnectedness of the dimensions

The different dimensions discussed above did not manifest in isolation. The intersection of poverty, rurality, and gender have resulted in more entrenched levels of exclusion by creating multiple barriers to accessing learning during and after school closures, including physical, economic, and social obstacles. For example, children from rural and low-income households were most likely to have limited access to learning. This was compounded by gendered norms and practices such as forced marriages and GBV that further limit young girls' chances of returning to school. As a result, girls from lower income households and rural communities were not only less likely to be able to access learning during the school closures, but also more vulnerable to dropping out altogether, perpetuating a cycle of exclusion and marginalisation.

Conclusions and implications

In 2020, the global education sector experienced unprecedented shocks with COVID-19 directly and indirectly affecting the school system. In the context of the pandemic, several pre-pandemic structural challenges in the education sector have acted as pre-existing conditions that made some segments of the population more vulnerable and susceptible to the effects of the pandemic than others. The combined effect of the pre-pandemic and pandemic structural challenges in the sector have deepened pre-existing conditions, resulting in the most vulnerable segments of the population being disproportionately affected. The pandemic has further created new challenges in many other areas. In this chapter, we have evaluated the various dimensions and channels through which the pandemic affected the education sector in the region and how this prolonged the education crisis within the region.

During the COVID-19 pandemic in SSA, various factors played a pivotal role in helping certain groups of people to overcome the challenges posed to traditional education systems. Differences in economic, social, and technological capacities interact with the shock in driving the observed outcomes. Prior to the onset of COVID, the capacity gap within the region had created a tiered system in which education problems tend to be concentrated among poor and vulnerable populations. In essence, the capacity gaps also determine the level of impact and resilience to the pandemic.

One notable group that benefited during the pandemic was families with higher socioeconomic status. These households were often better equipped to facilitate uninterrupted learning. They possessed essential resources, including digital devices, reliable internet connectivity, and a conducive home learning environment. These advantages allowed their children to seamlessly engage in online learning and access educational materials, effectively mitigating the disruptions to their education.

Urban populations also enjoyed relative advantages in terms of access to infrastructure and educational resources compared to their rural counterparts. Urban schools typically had the infrastructure and resources required to transition to online or remote learning, ensuring that students in these areas had a smoother transition and more readily available educational support.

Parents with higher levels of education emerged as another group that excelled in supporting their children's learning needs during the pandemic. Their educational background enabled them to provide additional guidance, assist with assignments, and proactively seek out supplementary educational resources, thereby creating a more enriching home learning environment.

Additionally, households with access to television and radio reaped significant benefits through educational broadcasts. In response to the pandemic, governments and organisations in some SSA countries launched radio and television programs designed to support remote learning. Individuals with access to these media sources could

readily engage with educational content, follow lessons, participate in quizzes, and continue their educational journey from the safety of their homes.

However, it is important to recognise that despite these advantages, the pandemic underscored a key lesson regarding the crucial role of technology in improving both the student and teacher learning and teaching experience. While many countries around the world adapted to school closures by leveraging various forms of technology for educational delivery, several countries in SSA still face challenges in achieving universal access to educational technology. This digital divide continues to make remote learning a formidable challenge in the region, highlighting the urgent need for equitable access to educational resources and technology in SSA to ensure that all students have the opportunity to learn effectively, regardless of their socio-economic or geographic circumstances.

Impact of accelerated mitigation policies on inequality in learning and access to education

The rapid policy responses implemented in response to the COVID-19 pandemic have unintentionally exacerbated inequalities in learning and access to education in SSA. School closures, while necessary to curb the spread of the virus, imposed significant social and economic costs. They led to the loss of valuable instructional time, causing many students to lag behind in their studies, leading to prolonged schooling years and a surge in dropout rates. Regrettably, the impacts of these closures have been most acutely felt by the most vulnerable and marginalised segments of society (UNESCO, n.d.). As highlighted by Azubuike et al. (2021), the uneven access to digital infrastructure further compounded these disparities, as the pandemic deepened the divide in access to education and learning resources between students with access to remote learning tools and those without such access.

A significant number of studies illuminate the gendered implications of the pandemic on education outcomes in SSA, where it exacerbated existing disparities, meaning girls encountered significant obstacles to continuing their education.

Learning losses have had a profound impact on learning poverty levels at both the individual country and regional levels. Furthermore, even though schools began reopening in most countries by 2021, data from the World Bank in 2022 indicates that learning in most SSA countries had not yet fully returned to pre-pandemic levels or pace (Asim et al., 2022).

In this complex landscape, the intersection of factors such as rurality, gender, and socioeconomic status has given rise to a web of exclusions and deep-rooted inequalities in many SSA societies. It is evident that without targeted policies and interventions addressing these multifaceted barriers to education, numerous children will continue to be marginalised, unable to access the benefits of a quality education, and will be prevented from realising their full potential.

The role of resilience

The disruptions caused by COVID-19 tested the resilience of school systems across Africa. The impact of school closures on educational inequalities largely depended on the ability of education systems to sustain learning during school closures. A resilient system, according to Raghunathan et al. (2022), can adapt to change and grow; for the education sector, the pandemic was a dramatic shock, and a wake-up call in terms of its ability to absorb that shock. Resilience would mean that a system would continue to function, albeit in different ways. The environment (i.e. the processes, hierarchies, and complex social connections within the system) contributed to the system's resilience. Thus, the measure of resilience in education has three main dimensions: people, the technology that facilitates the process, and the process environment (Raghunathan et al., 2022). Using different platforms created by governments and private entities, such as radio and television broadcast, online and internet-enabled platforms like WhatsApp and Zoom, and other innovative technological solutions, teachers were able to switch to remote teaching and learning for their pupils in many countries in the region, including the Gambia, Ghana, Nigeria, South Africa, Rwanda, Mauritius, Namibia, and Kenya, among others (UNESCO & Global Education Coalition, 2021). While this response ensured that learning did not stop entirely, it also created new forms of inequalities in learning, given that the skills and facilities needed for distance learning were not equally available to all groups of learners and households. Those who could not afford home lessons or who lacked the devices and infrastructure (internet and electricity) for remote learning were at risk of exclusion (Human Rights Watch, 2020; Chair & De Lannoy, 2018; Aoyagi, 2021).

For households, resilience meant finding alternative means for sustaining livelihoods (owing to increased poverty and economic hardship caused by the pandemic) and finding new learning options for their children. Many parents who could afford to hire private tutors to provide personalised home schooling for their children. Some parents (especially highly educated ones) assumed the role of teachers to support their children's learning at home, just as older students assisted younger siblings in learning (Folarin et al., 2023). On the other hand, other children had to work to contribute to family income amidst the economic hardship imposed by the pandemic. However, this particular coping measure had negative consequences, as it led to losses in educational development of children due to their early transition to the labour market (child labour), as was also the case for increased rates in early/child marriage, teenage pregnancy, and increased school dropouts (Molek & Bellizzi, 2022; Fore & Malpass, 2021; Moscoviz & Evans, 2021; Dessy et al., 2021; Zulaika et al., 2022).

Policy recommendations

The dynamics of the persistence of education inequality in SSA can only be addressed through proactive policy interventions and investments. The effect of the COVID-19 shock on education is likely to translate

into long-term economic losses and require both short- and long-term interventions. Our policy recommendations targeting educational inequality in SSA are centred around addressing access to education and learning over the short and long terms.

How to recover access

Short-term

1. Restore and expand auxiliary school support services that have attracted enrolment: With enrolments and school completion rates declining at the basic level, innovative measures are needed to expand access again. This will require revising the toolbox that has supported enrolment increases in the past, such as free education policy and school feeding programmes. The scalability and effectiveness of these interventions in the past make them easily-solved challenges for policymakers. In low-income countries, only about 18% of school children are covered by school feeding programmes, compared to 60% in high-income countries.¹³ Scaling this up can restore access to education, provide a complementary source of nutrition for children, and support the local economy where the food is sourced.
2. Ease transition and reintegration programme into schools: The problem of access to education during and after COVID-19 relates to various factors including early labour market transition, early child pregnancy, and parental income loss. The administrative and cultural barriers (fees, stigmatisation) to children's return to school need to be removed. This will require a tracking programme to identify children who are affected and to work with school administrators to provide a conducive environment for reintegration. Better information sharing will also help in this regard for communities and households to access return opportunities for their children.

Long-term

1. There is a need to increase the resilience of the school systems to cope with shocks in order to reduce dropout rates. First, a shift is needed from conventional thinking that views school as the only place of learning toward the building of a more inclusive learning environment at home and within communities. Second, a blended school environment should be created to ensure learning continuity at all times, irrespective of any shocks to the system. This will ensure that the education sector will be better prepared for future shocks.
2. Universal access is the central goal of the MDGs, but this is yet to be achieved despite a shift in SDGs from access to learning. Innovative approaches to schooling must be created to ensure this. Countries such as Nigeria, Ghana, and Sierra Leone, among others, have in recent years used a model of accelerated education designed for overage children

13 <https://reliefweb.int/report/world/state-school-feeding-worldwide-2022>

to support their reintegration into schools. Governments also need to identify other demand and supply barriers to access.

How to recover learning

Short term

1. Tracking learning: It is important to know who is not learning, and this requires periodic learning assessment data. Data-driven policy intervention is needed to address the learning gap. This will allow governments to identify disadvantaged groups and their learning deficiencies.
2. Support teachers to increase the quality and quantity of teaching: Learning recovery requires contact time between learners and teachers to recover lost time and foundational learning. This is more important for children in deprived areas such as rural areas, or from low-income households that rely more on face-to-face teaching, where technology is absent. Remedial programmes that focus on foundational skills and ensure adequate coverage of curriculum losses are needed. This will entail keeping children in school longer to cover subject areas that have been missed due to the COVID-19 disruptions.

Long term

- Reorienting the education system for learning alignment: Before COVID-19, the majority of in-school children were not proficient in basic knowledge; hence, the goal of policy interventions should not be to restore the status quo. Evidence of learning recovery in Africa during COVID-19 points to the importance of blended learning, a focus on foundational learning, and digitally prepared teachers and learners. Going forward, these elements represent the foundation to reorient the education system. A key role in achieving this lies with governments in policy formulation around what school systems should prioritise. However, parents, communities, and the private sector can be further supportive by contributing resources and collaborating to facilitate policy implementation.
3. Stable funding for education: Funding for education is on the decline in most African countries (World Bank, 2022). Funding challenges extend to donor support, which has also shrunk with the global economic downturn (World Bank, 2022). Education systems require infrastructural support and incentives and training for teachers, among others. Achieving this requires huge financial support which governments alone cannot provide.

References

- Adunga, M., Ghahari, S., Merkley, S. & Rentz, K. (2022). Children with disabilities in Eastern Africa face significant barriers to access education: a scoping review. *International Journal of Inclusive Education*. <https://doi.org/10.1080/13603116.2022.2092656>
- Agbor, J. (2012). Poverty, Inequality, and Africa's Education Crisis. *Brookings*. <https://www.brookings.edu/opinions/poverty-inequality-and-africas-education-crisis/>
- Aina, J. K., & Adekunle, A. R. (2022). Inequality Of Educational Opportunities In Nigeria: Impacts On The National Development. *Asian Journal of Arts, Humanities and Social Studies*, 5(2), 28-34. https://www.researchgate.net/publication/368365292_INEQUALITY_OF_EDUCATIONAL OPPORTUNITIES_IN_NIGERIA_IMPACTS_ON_THE_NATIONAL_DEVELOPMENT
- Alesina, A., Hohmann, S., Michalopoulos, S., & Papaioannou, E. (2021). Intergenerational Mobility in Africa. *Econometrica, Journal of Econometric Society*, 89(1),1-35. <https://doi.org/10.3982/ECTA17018>
- Angrist, N., De Barros, A., Bhula, R., Chakera, S., Cummiskey, C., DeStefano, J., Floretta, J., Kaffenberger, M., Piper, B. & Stern, J. (2021). Building back better to avert a learning catastrophe: Estimating learning loss from COVID-19 school shutdowns in Africa and facilitating short-term and long-term learning recovery. *International Journal of Educational Development*, 84, 102397. <https://doi.org/10.1016/j.ijedudev.2021.102397>
- Aoyagi, C. (2021). *Effects of COVID-19 on Regional and Gender Equality in Sub-Saharan Africa: Evidence from Nigeria and Ethiopia*. (International Monetary Fund Working Paper No. 2021/169). <https://www.imf.org/en/Publications/WP/Issues/2021/06/18/Effects-of-COVID-19-on-Regional-and-Gender-Equality-in-Sub-Saharan-Africa-Evidence-from-460912>
- Archibong, B. (2018). Historical Origins of Persistent Inequality in Nigeria. *Oxford Development Studies*, 46(3), 325-347. <https://www.tandfonline.com/doi/abs/10.1080/13600818.2017.1416072>
- Ardington, C., Wills, G., & Kotze, J. (2021). COVID-19 Learning Losses: Early Grade Reading in South Africa. *International Journal of Educational Development*, 86, 102480. <https://doi.org/10.1016/j.ijedudev.2021.102480>
- Asim, S., Gera, R., & Singhal A. (2022, April 19). Learning Loss from Covid in Sub-Saharan Africa: Evidence from Malawi. World Bank Blogs. <https://blogs.worldbank.org/education/learning-loss-covid-sub-saharan-africa-evidence-malawi>
- Association for the Development of Education in Africa. (2020). *Impact of COVID-19 on Africa's Education: Reflecting on Promising Interventions and Challenges, towards a New Normal*. (Final Report). <https://www.adeanet.org/en/publications/impact-covid-19-africa-education-reflecting-promising-interventions-challenges-towards>

- Azomahou, T. & Yitbarek, E. (2021). Intergenerational mobility in education: Is Africa different? *Contemporary Economic Policy*, 39(3), 503-523. <https://doi.org/10.1111/coep.12495>
- Azubuike, O. B., Adegboye, O., & Quadri, H. (2021). Who Gets to Learn in a Pandemic? Exploring the Digital Divide in Remote Learning During the COVID-19 Pandemic in Nigeria. *International Journal of Educational Research Open*, 2, 100022. <https://doi.org/10.1016/j.ijedro.2020.100022>
- Beegle, K., Christiaensen, L., Dabalen, A. & Gaddis, I. (2016). *Poverty in a Rising Africa*. World Bank. <https://doi.org/10.1596/978-1-4648-0723-7>
- Bhengu, L. (2021, August 17). Gauteng Records More than 23,000 Teen Pregnancies in One Year, Some Moms as Young as 10. *News24*. <https://www.news24.com/news24/southafrica/news/gauteng-records-more-than-23-000-teen-pregnancies-in-one-year-some-moms-as-young-as-10-20210817>
- Bulawayo, B. (2021, September 12). Zimsec Reopens Exam Registration. *The Sunday mail*. <https://www.sundaymail.co.zw/zimsec-reopens-exam-registration>
- Chair, C., & De Lannoy, A. (2018). *Youth, Deprivation and the Internet in Africa* (Policy Paper No. 4). Research ICT Africa. https://researchictafrica.net/after-access-survey-papers/2018/After_Access:_youth_and_digital_inequality_in_Africa.pdf
- Chinyoka, K. & Naidu, N. (2014). Influence of Home-Based Factors on the Academic Performance of Girl Learners from Poverty-Stricken Families: A Case of Zimbabwe. *Mediterranean Journal of Social Sciences*, 5(6),223–232. <https://www.richtmann.org/journal/index.php/mjss/article/view/2410>
- Choung, M., & Manamela, M.G. (2018). Digital Inequality in Rural and Urban settings: Challenges of Education and Information in South African Youth Context. *Bangladesh e-Journal of Sociology*, 15(2), 186-197. https://www.researchgate.net/publication/333132846_Digital_Inequality_in_Rural_and_Urban_settings_Challenges_of_Education_and_Information_in_South_African_Youth_Context
- Dang, H., Huynh, T., & Nguyen, M. (2020). Does the COVID-19 Pandemic Disproportionately Affect the Poor? Evidence from a Six-Country Survey. IZA Discussion Papers No. 13352. <https://www.iza.org/publications/dp/13352/does-the-covid-19-pandemic-disproportionately-affect-the-poor-evidence-from-a-six-country-survey>
- Daviet, B. (2016). *Revisiting the Principle of Education as a Public Good*. Education Research and Foresight Series, No. 17. UNESCO. <http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/rethinking-education/erf-papers/>
- Dawodu, S. M. (2021, December 8). Remote Learning During COVID-19 Lockdown is Preventing Learning Loss in Nigeria. *World Bank*.

<https://www.worldbank.org/en/news/feature/2021/12/08/remote-learning-during-covid-19-lockdown-is-preventing-learning-loss-in-nigeria>

Dessy, S., Gninafon, H., Tiberti, L., & Tiberti, M. (2021). *COVID-19 and Children's School Resilience: Evidence from Nigeria*. (Policy Research Working Paper No. 9736). World Bank. <https://openknowledge.worldbank.org/entities/publication/13ca5d3d-b027-56b7-be82-6756378fa436>

Dev, P., Mberu, B. U., & Pongou, R. (2016). Ethnic Inequality: Theory and Evidence from Formal Education in Nigeria. *Economic Development and Cultural Change*, 64(4), 603–660. <https://www.jstor.org/stable/26545106>

eLearning-Africa & EdTech Hub. (2020). *Impact de la pandémie de COVID-19 sur l'éducation en Afrique et incidence sur le recours aux technologies*. https://www.elearning-africa.com/conference2024/ressources/pdfs/surveys/The_effect_of_Covid-19_on_Education_in_Africa_fr.pdf

Evans, D. K. & Mendez, A. (2020). *Education in Africa: What Are We Learning?* (Center for Global Development Working Paper No. 542). <https://www.cgdev.org/sites/default/files/education-africa-what-are-we-learning.pdf>

Evans, D. K., Hares, S., Mendez Acosta, A., & Saintis, C. (2021, February 10). It's Been a Year Since Schools Started to Close Due to COVID-19. *Centre for Global Development*. <https://www.cgdev.org/blog/its-been-year-schools-started-close-due-covid-19>

Feruzi, S. M., & Li, Y. (2020). Application of EdTech in Tanzania: Effectiveness of radio and television in teaching and learning amid COVID-19 pandemic. *International Journal of Advanced Engineering Research and Science*, 7(8), 314–323. <https://doi.org/10.22161/ijaers.78.35>

Folarin, O., Adenira, A., Aladesanmi, O., Nwugo, E. (2023). COVID-19 and Rising Educational Inequalities in Africa: Evidence from Nigeria (Occasional Paper No. 80). Southern Voice. <https://southernvoice.org/svss-covid-19-and-rising-educational-inequalities-evidence-from-nigeria-2/>

Fore, H. & Malpass, D. (2021, December 20). Reversing the Pandemic's Education Losses. *World Bank Blogs*. <https://blogs.worldbank.org/voices/reversing-pandemics-education-losses>

Gichuhi, L. and Kalista, J. (2022). *The Kenya Ministry of Education's Response to the COVID-19 Pandemic. Case Study. What Influences Ministry of Education Leadership During Crises?* UNESCO International Institute for Educational Planning. <https://unesdoc.unesco.org/ark:/48223/pf0000381092/PDF/381092eng.pdf.multi>

Giné-Garriga, R., Delepiere, A., Ward, R., Alvarez-Sala, J., Alvarez-Murillo, I., Mariezcurrena, V., Göransson, H., Saikia, P., Avello, P., Thakar, K., Ibrahim, E., Nouvellon, A., El Hattab, O., Hutton, G., & Jiménez, A.

- (2021). COVID-19 Water, Sanitation, and Hygiene Response: Review of Measures and Initiatives Adopted by Governments, Regulators, Utilities, and Other Stakeholders in 84 Countries. *Science of the Total Environment*, 795, 148789. <https://doi.org/10.1016/j.scitotenv.2021.148789>
- Global Partnership for Education. (2022). Transforming Education: Benin, Covid-19 Response. <https://www.globalpartnership.org/where-we-work/benin>
- Gunnlaugsson, G., Baboudóttir, F. N., Baldé, A., Jandi, Z., Boiro, H., & Einarsdóttir, J. (2021). Public or Private School? Determinants for Enrolment of Adolescents in Bissau, Guinea-Bissau. *International Journal of Educational Research*, 109, 101851. <https://doi.org/10.1016/j.ijer.2021.101851>
- Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the Role of Digital Technologies in Education: A review. *Sustainable Operations and Computers*, 3, 275-285. <https://doi.org/10.1016/j.susoc.2022.05.004>
- Hillman, A. L. & Jenkner, E. (2004). Educating Children in Poor Countries. (Economic Issue Series No.33). *International Monetary Fund*. <https://www.imf.org/external/pubs/ft/issues/issues33/>
- Human Rights Watch. (2020). *Impact of Covid-19 on Children's Education in Africa* (Submission to The African Committee of Experts on the Rights and Welfare of the Child: 35th Ordinary Session). https://www.hrw.org/sites/default/files/media_2020/08/Discussion%20Paper%20-%20Covid%20for%20ACERWC.pdf
- Irvin, M. J., Meece, J. L., Byun, S. Y., Farmer, T. W. & Hutchins, B. C. (2011). Relationship of School Context to Rural Youth's Educational Achievement and Aspirations. *Journal of Youth and Adolescence*, 40(9),1225-1242. <https://doi.org/10.1007/s10964-011-9628-8>
- Kasirye, I., Ntale, A., & Venogupal, G. (2020). *Implementation progress of the SDGs: Sub-Saharan Africa regional survey*. (Occasional Paper No. 66). Southern Voice. <http://southernvoice.org/implementation-progress-of-the-sdgs-sub-saharan-africa-regional-survey-2/>
- Kidman, R., Breton, E., Behrman, J., & Kohler, H. P. (2022). Returning to School after COVID-19 Closures: Who is Missing in Malawi? *International journal of educational development*, 93, 102645. <https://doi.org/10.1016/j.ijedudev.2022.102645>
- U.S. Department of Education & Office of Educational Technology. (2017). *Reimagining the Role of Technology in Higher Education: A Supplement to the National Education Technology Plan*. <https://tech.ed.gov/files/2017/01/Higher-Ed-NETP.pdf>
- Lain, J. & Vishwanath, T. (2022). COVID-19 and Nigeria's Human Capital Crisis. Wathi. <https://www.wathi.org/wathinote-sante-nigeria-2023/covid-19-and-nigerias-human-capital-crisis-jonathan-lain-and-tara-vishwanath-brookings-2022/>
- Lewin, K. M., & Sabates, R. (2012). Who Gets What? Is Improved Access to Basic Education Pro-Poor in Sub-Saharan Africa? *International*

Journal of Educational Development, 32(4), 517-528. <https://doi.org/10.1016/j.ijedudev.2012.02.013>

- Locatelli, R. (2018, February). *Education as a public and common good: reframing the governance of education in a changing context*. Education Research And Foresightworking Papers Series No. 22, UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000261614>
- Louis, E. F., Eugene, D., Ingabire, W. C., Isano, S., & Blanc, J. (2022). Rwanda's Resiliency During the Coronavirus Disease Pandemic. *Frontiers in Psychiatry*, 12, 589526. <https://doi.org/10.3389/fpsyt.2021.589526>
- Manea, R. & Naso, P. (2020). School Fee Elimination and Educational Inequality in Tanzania. The Centre for International Environmental Studies (Research Paper 64). http://repec.graduateinstitute.ch/pdfs/ciesrp/CIES_RP_64.pdf
- Maredia, M. K., Adenikinju, A., Belton, B., Chapoto, A., Faye, N. F., Liverpool-Tasie, S., Olwande, J., Reardon, T., Theriault, V., & Tschirley, D. (2022). COVID-19's Impacts on Incomes and Food Consumption in Urban and Rural Areas are Surprisingly Similar: Evidence from Five African Countries. *Global food security*, 33, 100633. <https://doi.org/10.1016/j.gfs.2022.100633>
- McLeod, S., & Dulsky, S. (2021). Resilience, Reorientation, and Reinvention: School Leadership During the Early Months of the COVID-19 Pandemic. *Frontiers in Education*, 6, 637075. <https://doi.org/10.3389/feduc.2021.637075>
- Mo Ibrahim foundation. (2021). 2021 Forum Report. COVID-19 in Africa, One Year On: Impact and Prospects. <https://mo.ibrahim.foundation/our-research/data-stories/covid-19-impacts-prospects>
- Molek, K., & Bellizzi, S. (2022). Teenage motherhood in Africa: The epidemic in the COVID-19 pandemic. *International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics*, 158(1), 218–219. <https://doi.org/10.1002/ijgo.14144>
- Montgomery, M. (2017). Colonial Legacy of Gender inequality: Christian Missionaries in German East Africa. *Politics & Society*, 45(2), 225-268. <https://doi.org/10.1177/0032329217704432>
- Moscoviz, L. & Evans, D. K. (2022, March). *Learning Loss and Student Dropouts during the COVID-19 Pandemic: A Review of the Evidence Two Years after Schools Shut Down*. (Centre for Global Development Working Paper No. 609). <https://www.cgdev.org/sites/default/files/learning-loss-and-student-dropouts-during-covid-19-pandemic-review-evidence-two-years.pdf>
- Mpapalika, J., and Katera, L. (2023). *The Impact of the COVID-19 Pandemic on Educational Inequalities in Tanzania* (Occasional Paper No. 85). Southern Voice. <https://southernvoice.org/the-impact-of-the-covid-19-pandemic-on-educational-inequalities-in-tanzania/>
- Musau, Z. (2018). Africa Grapples with Huge Disparities in Education. *Africa Renewal*. <https://www.un.org/africarenewal/magazine/>

december-2017-march-2018/africa-grapples-huge-disparities-education

- Nabassaga, T., Chuku, C., Mukasa, A. & Amusa, H.(2020). *How Does Educational Inequality Affect Income Inequality in Africa?* (Working Paper Series No. 343). African Development Bank. https://www.afdb.org/sites/default/files/documents/publications/wps_no_343_how_does_educational_inequality_affect_income_inequality_in_africa_-2.pdf
- Nasir, A. (2020). Home-Based Learning in the Wake of Covid-19. *UNICEF*. <https://www.unicef.org/nigeria/stories/home-based-learning-wake-covid-19>
- Nevo, C.M.; Egenti, S. (2019). A Disaggregated Analysis of Wealth Status and Educational Attainment in Nigeria Using the Multinomial Logit Approach. *Economies*, 7(2), 39. <https://doi.org/10.3390/economies7020039>
- Norton, S. W. & Tomal, A. (2009). Religion and Female Educational Attainment. *Journal of Money, Credit and Banking*, 41(5), 961-986. <https://www.jstor.org/stable/40271588>
- Nunn, N. (2014). Gender and Missionary Influence in Colonial Africa. In E. Akyeampong, R. Bates, N. Nunn & J. Robinson (Eds.), *Africa's Development in Historical Perspective* (pp. 489-512). Cambridge University Press.
- Ogbo, E. R., Brown, T., & Sicker, D. (2017). Understanding Mobile Service Substitution and the Urban-Rural Digital Divide in Nigeria. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2944367>
- Olanrewaju, G. S., Adebayo, S. B., Omotosho, A. Y., & Olajide, C. F. (2021). Left Behind? The Effects of Digital Gaps on E-Learning in Rural Secondary Schools and Remote Communities Across Nigeria During the COVID-19 Pandemic. *International Journal of Educational Research Open*, 2, 100092. <https://doi.org/10.1016/j.ijedro.2021.100092>
- Psaki, S., McCarthy, K., & Mensch, B. (2018). Measuring gender equality in education: Lessons from trends in 43 countries. *Population and Development Review*, 44(1), 117-142. <https://doi.org/10.1111/padr.12121>
- Paci, P. (2021, January 7). How Livelihoods Deteriorated in Sub-Saharan Africa Due to COVID-19. *World Bank Blogs*. <https://blogs.worldbank.org/african/how-livelihoods-deteriorated-sub-saharan-africa-due-covid-19>
- Raghunathan, S., Darshan S., A. & Sharma, B. (2022). Study of Resilience in Learning Environments During the COVID-19 Pandemic. In *Frontiers in Education* (Vol. 6). *Frontiers Education*, 6, 677625 . <https://doi.org/10.3389/feduc.2021.677625>
- Roser, M. & Ortiz-Ospina, E. (2016). Global Education. *OurWorldInData.org*. <https://ourworldindata.org/global-education>

- Sandefur, J. (2022, February 3). Uganda's Record-Breaking Two-Year School Closure Led to... No Decline in the Number of Kids Who Can Read? *Centre for Global Development*. <https://www.cgdev.org/blog/ugandas-record-breaking-two-year-school-closure-led-to-no-decline-number-kids-who-can-read>
- South African Government News. (2021). Distribution of Laptops. <https://www.sanews.gov.za/>
- Somasse, G. (2020). Free Education, Schooling Outcomes, and Wages: An Inequality Analysis in Benin after the 2006 Free Tuition Policy. In M. Ndulo, N. Assié-Lumumba (Eds.) *Education and Development* (pp.47-78). Palgrave Macmillan. https://doi.org/10.1007/978-3-030-40566-3_4
- Statista (2023). Internet Usage in Africa - Statistics & Facts. Accessed at: <https://www.statista.com/topics/9813/internet-usage-in-africa/#topicOverview>
- Sumida, S. & Kawata, K. (2021). An Analysis of the Learning Performance Gap between Urban and Rural Areas in Sub-Saharan Africa. *South African Journal of Education*, 41(2). <https://www.ajol.info/index.php/saje/article/view/209374>
- Sumida, S. (2017). Obstructive and Promotive Factors for Access to School and Learning in Primary School in Zambia. *International Journal of Comparative Education and Development*, 19(1), 2–19. <https://doi.org/10.1108/IJCED-10-2016-0020>
- Talba, L., Eyebiyi, E-S., Dagniho, M. (2023). *COVID-19 and educational inequality in Benin*. (Occasional Paper No. 87). Southern Voice.
- The Education Partnership Centre (2020). *Learning in a Pandemic: Nigeria's Response to Teaching and Learning During the COVID-19 Pandemic*. https://tepcentre.com/publications/Learning-in-a-Pandemic-Report_TEP-NESG_2020.pdf
- Ugwuede, K. (2020). EdTech in post-COVID Africa. *Techcabal*. <https://techcabal.com/2020/04/06/edtech-in-post-covid-19-africa/>
- Ukiwo, U. (2007). Education, Horizontal Inequalities and Ethnic Relations in Nigeria. *International Journal of Educational Development*, 27(3), 266–281. <https://doi.org/10.1016/j.ijedudev.2006.10.016>
- United Nations Educational, Scientific and Cultural Organization & Global Education Coalition. (2021). Recovery, Resilience and Reimagining Education in Africa. <https://unesdoc.unesco.org/ark:/48223/pf0000377514>
- United Nations Educational, Scientific and Cultural Organization. (2021, July 26). The Persistent Teacher Gap in Sub-Saharan Africa is Jeopardizing Education Recovery. <https://www.unesco.org/en/articles/persistent-teacher-gap-sub-saharan-africa-jeopardizing-education-recovery>
- United Nations Educational, Scientific and Cultural Organization. (2023, June 21). UNESCO's Education Response to COVID-19. <https://www.unesco.org/en/covid-19/education-response/initiatives>

- United Nations Educational, Scientific and Cultural Organization. (n.d.). Adverse Consequences of School Closures. <https://web.archive.org/web/20220626123501/https://en.unesco.org/covid19/educationresponse/consequences>
- UNESCO Institute for Statistics. (2019, September). *New Methodology Shows that 258 Million Children, Adolescents and Youth Are Out of school*. (Fact Sheet No. 56). <https://uis.unesco.org/sites/default/files/documents/new-methodology-shows-258-million-children-adolescents-and-youth-are-out-school.pdf>
- UNESCO Institute for Statistics. (2021a). *Data for the Sustainable Development Goals*. <https://uis.unesco.org/>
- UNESCO Institute for Statistics. (2021b). *Out of school Data*. <https://education-estimates.org/out-of-school/data/>
- UNESCO Institute for Statistics. (2022). *COVID-19 Education Response: Country Dashboard*. <https://covid19.uis.unesco.org/global-monitoring-school-closures-covid19/country-dashboard/>
- United Nations International Children's Emergency Fund. (2020, November). *COVID-19: A Catastrophe for Children in Sub-Saharan Africa: Cash Transfers and a Marshall Plan Can Help*. <https://www.unicef.org/esa/media/7626/file/COVID-19-A%20Catastrophe-for-Children-in-SSA.pdf>
- United Nations International Children's Emergency Fund Malawi. (2023). *For Every Child: Quality Learning and Protection*. <https://www.unicef.org/malawi/media/8651/file/For%20every%20child%20Quality%20Learning%20and%20Protection%20-%20UNICEF%20Malawi%20-%20Pillar%20%20Brief.pdf>
- United States Agency for International Development. (2015). *Effective Teaching and Education Policy in Sub-Saharan Africa: A Conceptual Study of Effective Teaching and Review of Educational Policies in 11 Sub-Saharan African Countries*. https://pdf.usaid.gov/pdf_docs/pa00km8x.pdf
- Uwizeyimana, D. E. (2022). Analysing the Importance of E-Government in Times of Disruption: The Case of Public Education in Rwanda During Covid-19 Lockdown. *Evaluation and Program Planning*, 91, p.102064. <https://doi.org/10.1016/j.evalprogplan.2022.102064>
- Van der Merwe, C. (2020, May 7). Government promises laptops for all needy students. *Research Professional News*. <https://www.researchprofessionalnews.com/rr-news-africa-south-2020-5-government-promises-laptops-for-all-needy-students/>
- Wambui, M. (2021). Kenya: How DCI Toll Free Line Helps Combat Child Abuse. *allAfrica*. <https://allafrica.com/stories/202106100053.html>
- World Bank. (2023.) *Gender Statistics - DataBank*. <https://databank.worldbank.org/source/gender-statistics/Series/SE.LPV.PRIM.FE>
- World Bank. (2020, February 7). *Education For All: Making Education Inclusive, Accessible to Uganda's Children with Special Needs*.

<https://www.worldbank.org/en/news/feature/2020/02/07/education-for-all-making-education-inclusive-accessible-to-ugandas-children-with-special-needs>

World Bank (2021). *The Human Capital Index 2020 Update: Human Capital in the Time of COVID-19*. World Bank. <https://doi.org/10.1596/978-1-4648-1552-2>

World Bank.(2022). School Enrolment, Primary (% gross). [Data file]. <https://data.worldbank.org/indicator/SE.PRM.ENRR?locations=ZG>

World Bank (2022, June 28). Financing for Education Stagnant or Declining Despite Chronic Learning Needs Post-COVID-19. <https://www.worldbank.org/en/news/press-release/2022/06/28/financing-for-education-stagnant-or-declining-despite-chronic-learning-needs-post-covid-19>

Zhang, Y. (2006). Urban Rural Literacy Gaps in Sub Saharan Africa: The Roles of Socioeconomic Status and School Quality. *Comparative Education Review*, 50(4), 581–602. <https://doi.org/10.1086/507056>

Zulaika, G., Bulbarelli, M., Nyothach, E., van Eijk, A., Mason, L., Fwaya, E., Obor, D., Kwaro, D., Wang, D., Mehta, S. D., & Phillips-Howard, P. A. (2022). Impact of COVID-19 Lockdowns on Adolescent Pregnancy and School Dropout Among Secondary Schoolgirls in Kenya. *BMJ global health*, 7(1), e007666. <https://gh.bmj.com/content/7/1/e007666>