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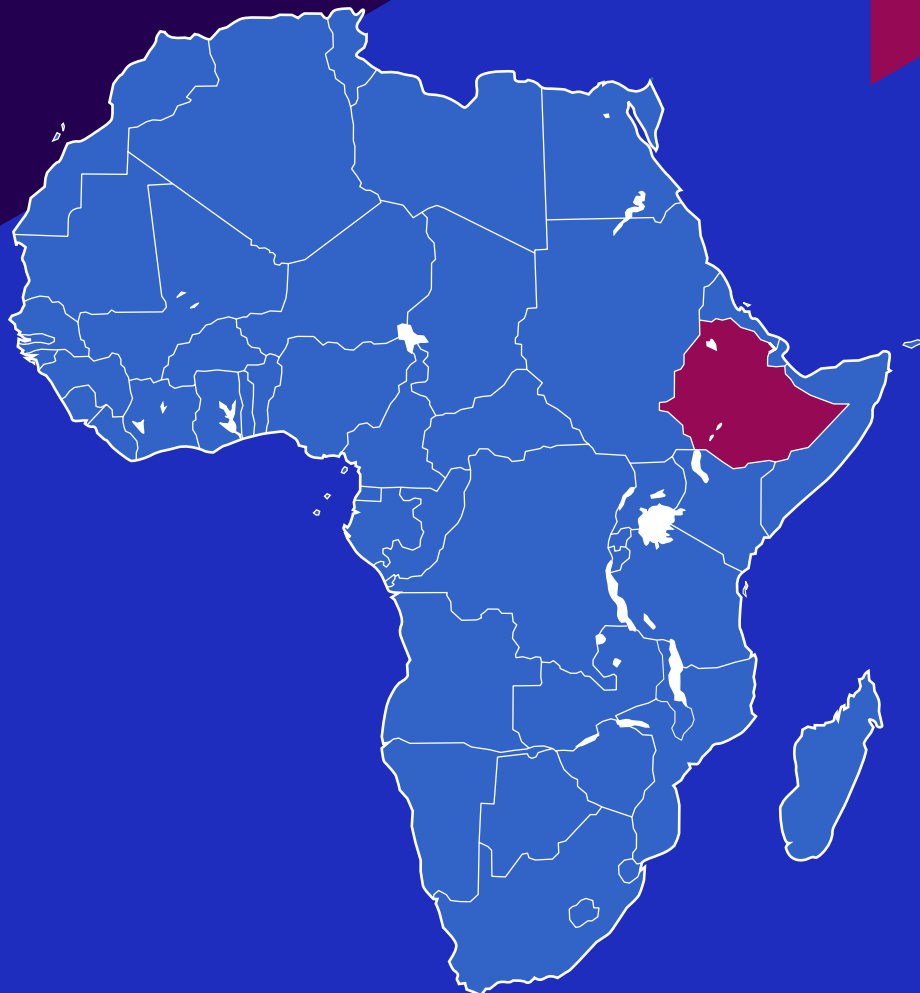
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

▶ Digitalization in teaching and education in the context of COVID-19: Ethiopia

Digitalization, the future of work and the teaching profession project

Moges Yigezu

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International Labour Office • Geneva

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▶ Abbreviations

▶ **D-TEST**	Digital Technology for Education Sector Transformation
▶ **ESDP**	Education Sector Development Programme
▶ **ICT**	information and communication technology
▶ **UNICEF**	United Nations Children's Fund
▶ **WHO**	World Health Organization
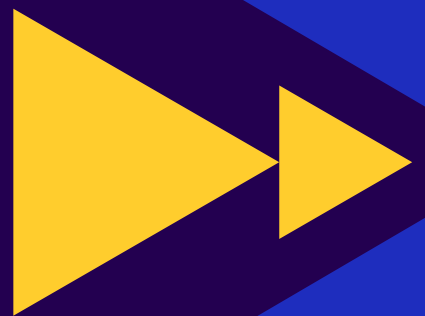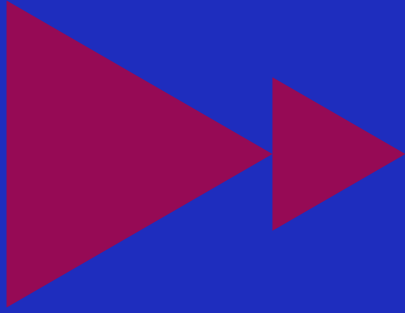
▶ 1. Introduction

In Ethiopia, the use and integration of digital technologies in education has been going through transformations since the announcement of the first case of the coronavirus disease 2019 (COVID-19) in March 2020. As in other countries, schools and universities were closed and the mobility of people and economic activities were placed on lockdown in response to the pandemic. Despite an infrastructural deficit, this was followed by an upsurge in the use of digital technologies. Private primary and secondary schools shifted to online platforms and messaging applications (such as WhatsApp and Telegram) to reach students and continue teaching and learning activities. Radio and television learning programmes were primarily used by public schools to reach secondary and primary school students. Seminars, workshops, meetings and examinations began to be conducted through videoconferencing platforms such as Zoom and Skype. Although the uptake has been ad hoc and uncoordinated, a new way of delivering education via digital technologies is taking shape. This study assesses the impact of COVID-19 on the education sector in the immediate and medium term, and its effect on long-term planning in light of the challenges presented by the pandemic. The study will also look at the impact of the crisis on the teaching profession.
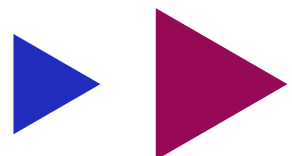
▶ 2. Methodology

The methodology applied in this study included a review and analysis of official government and non-governmental documents, media reports and information posted on the website of the Ministry of Education. Some of the documents reviewed included the concept note for the Education Sector COVID-19 Preparedness and Response Plan, the Education Development Plan 2020–2030 and the Education Sector Development Programme (ESDP) VI 2020–2025.
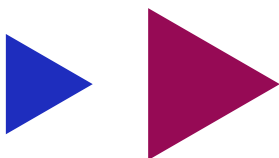
▶ 3. COVID-19 and Ethiopian education context

Following the first case of COVID-19 in March 2020, the Government of Ethiopia issued a five-month state of emergency in April 2020. It ordered high-risk government employees to work from home, reduced the number of people in vehicles, closed borders, released more than 1,500 prisoners and championed hand-washing. Interregional state transportation systems were halted from the end of March to mid-April 2020. There was a complete halt of the transportation system in towns that registered COVID-19 cases early. In Addis Ababa, the country's capital, public transportation was allowed to operate with passenger volumes at half capacity. Furthermore, bars and nightclubs were shut down. Despite these efforts, by 5 November 2020, Ethiopia had registered 98,391 cases, with 39,767 active cases and 1,508 total deaths, and had conducted over 1.5 million COVID-19 tests. All regional states, zones and woredas have reported at least one case of COVID-19, with Addis Ababa being the epicentre of the crisis.

The general education system in Ethiopia includes pre-primary, primary and secondary school levels. Preschool education is mainly implemented by the private sector in urban areas, while primary and secondary education are predominately delivered by the public sector. As a result, more than half of children do not have access to pre-primary education in Ethiopia (UNICEF 2019). Less than 5 per cent of the total population of primary school students attend private schools (World Bank 2020). The education sector is led by the Federal Ministry of Education at the federal government level and regional education bureaus at regional state level. There are more than 26 million students and 688,887 teachers in 86,231 schools in Ethiopia.[1]

In 2018–19, only 27 per cent of primary schools had access to electricity, only 38 per cent had available radios and only 27 per cent had access to water supply, most of which are located in urban areas (Government of Ethiopia 2019). The absence of electricity and infrastructure makes it difficult to introduce digital technologies and competencies in the classroom and complicates remote teaching and learning. Without access to water supply, ensuring a safe and healthy return to schools during the COVID-19 pandemic is compromised.

There is only one telecommunications operator in Ethiopia, the government-owned Ethio telecom, and internet coverage is low. Only 19 per cent of the total population had access to the internet as of January 2020.[2] Most of the internet connectivity is via mobile phones. There were only 212,000 fixed broadband subscriptions as of June 2020 in Ethiopia (Ethio telecom 2020), a country with a population of 114,000,000 (United Nations 2019). Out of 79 countries ranked in terms of connectivity by the Global Connectivity Index, Ethiopia is ranked last.[3]

Due to the need for data and connectivity during the COVID-19 emergency period, Ethio telecom introduced a "stay at home" package during working hours and reduced the cost of fixed broadband connection rates. Even with this initiative, internet costs remain high, rendering the service inaccessible to the majority of households in Ethiopia. For example, broadband connections at the minimum speed per month cost close to the minimum wage of a public servant. Higher speeds are not affordable to any public servants working in government non-financial services in Ethiopia. This is especially challenging for the country's education system, as it makes it difficult to conduct virtual teaching and learning.

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1   Federal Ministry of Education statistics: http://www.moe.gov.et/en.

2   Digital 2020 Ethiopia: https://datareportal.com/reports/digital-2020-ethiopia.

3   Global Connectivity Index: https://www.huawei.com/minisite/gci/en/.

▶ 4. Education sector COVID-19 response

4.1 Immediate impact and responses

The World Health Organization (WHO) declared the COVID-19 virus a pandemic on 12 March 2020. The first case was recorded in Ethiopia on 13 March 2020 and, three days later, on 16 March 2020, the Office of the Prime Minister of Ethiopia announced that schools, sporting events and public gatherings would be suspended for 15 days. This was followed by the declaration of a state of emergency, which lasted for five months (April–August 2020). The Ministry of Education developed a concept note for the Education Sector COVID-19 Preparedness and Response Plan on 3 April 2020, the objective of which was "to pursue education disrupted by the incidence of COVID 19 pandemic for about more than 26 million students" (Government of Ethiopia 2020a, 4). In the response plan, the Ministry of Education declared its commitment "to quickly mitigate the current disorder of the academic calendar through introduction of innovative technology, creating awareness on hygiene and sanitation and facilitating a support program for needy and vulnerable children in collaboration with development partners, civic society and the community" (Government of Ethiopia 2020a, 5).

Following the closure of schools, the COVID-19 Preparedness and Response Plan was announced, with different actors in the education sector implementing diverse but related measures to connect students with lessons. Regional education bureaus initiated the use of educational radio programmes and television learning programmes. For instance, the Addis Ababa Education Bureau initiated a programme called "Education at my home", which reached secondary school students at home through the Telegram application and the AfriHealth satellite TV channel,[4] while primary school students were reached through radio programming via FM 94.7. Approximately 5.2 million primary and secondary school children have been reached throughout the country via distance learning programmes with the support of the United Nations Children's Fund (UNICEF) and other partners (Mekonnen 2020). With the support of UNICEF, Save the Children and Société Européenne des Satellites (SES), the Ministry of Education and regional education bureaus managed to launch nine new educational TV channels on the Ethiosat TV platform.[5] The channels were broadcast in eight languages (SES 2020).

These response measures were not without challenges, the first being lack of infrastructure and devices for internet connection. More than half of mobile devices in Ethiopia are not connected to the internet, with total connectivity being less than 20 per cent.[6] The lack of devices and internet connectivity make it difficult to reach the majority of students via the internet. In terms of television programmes, most of the rural population, which accounts for 79 per cent of the total population, does not have access to television.

Another challenge encountered was a lack of coordinated response in the education sector. Given the lack of infrastructure, devices and internet connectivity, schools and education bureaus worked with what was available to them. Primary and secondary education lessons provided via the Telegram application were not properly planned and lacked structure. Schools shared sections of textbooks and assignments in PDF and Word formats through the Telegram application, as well as 15–30 minute video lessons. However, there was no regular schedule and lessons were sent to students and parents sporadically. The TV and radio lessons were better structured, as they had a defined schedule both in terms of subjects and time of broadcast.

Even for those reached via the internet and TV and radio programmes, no monitoring system was developed to track and ensure student learning. Students complete the assignments, but there is no system in place to provide feedback on the work. Parents are expected to work with their children as the assignments are shared with them via their phones and Telegram accounts. There is no direct communication between

4   AfriHealth TV is an Ethiopian entertainment, free-to-air, satellite TV channel. For more information, visit: https://www.afrihealth.net/.

5   Ethiosat is a free-to-air TV platform that delivers private and public channels exclusively to Ethiopian direct-to-home services via NSS-12 satellite. For more information, visit: https://www.ses.com/case-study/ethiosat.

6   Digital 2020 Ethiopia: https://datareportal.com/reports/digital-2020-ethiopia.

students and their teachers, but rather between parents and the school administration responsible for sending the lessons and assignments.

Students in pre-primary education have been overlooked during the pandemic, with many not being provided with opportunities to continue learning during centre closures.[7] Furthermore, almost no support has been put in place to help students, teachers and parents deal with the fear, anxiety and stress resulting from the COVID-19 pandemic and its various response measures.

Other major concerns that have arisen as a result of the COVID-19 pandemic include an increase in the risk of early marriage of girls as well as boys, with reports of more than 500 girls rescued from child marriage in northern Ethiopia (Jones et al. 2020; Wuilbercq 2020). Regardless of these challenges, following the outbreak of the COVID-19 pandemic, the state of education is changing rapidly and a major paradigm shift in the mode of teaching is taking place.

4.2 Medium-term impact and responses

In order to resume face-to-face teaching and learning in schools, the Ministry of Education passed the decision to allow all students to move on to the next grade level, except those sitting for national examinations (grades 8 and 12). The Ministry of Education also decided that schools needed to provide revision classes for the content that should have been covered during the second semester of the 2019–20 academic year. It was further decided that national examinations for grades 8 and 12 would not cover content meant to be taught after 16 March 2020, the date when schools were closed due to the COVID-19 crisis. These decisions were based on an assessment by the Ministry of Education that the initiatives undertaken to continue learning at home did not materialize for the majority of the students.

Following recommendations from the Ministry of Health, which gave the go-ahead for the reopening of schools with appropriate COVID-19 prevention measures, the Ministry of Education issued plans and procedures for the safe reopening of schools. Technical committees were established from the federal level to the lowest administration levels in all parts of the country, which were tasked with examining the level of preparedness of every school and granting permission to reopen. School compounds that were used as quarantine stations were disinfected. Mask wearing and thermal screening have been made mandatory. In order to ensure social distancing, class sizes have been limited to 20–25 students, with one student per bench. These measures require more teachers, with regional bureaus of education undertaking efforts to ensure provision of sufficient numbers of teachers. Since July 2020, tens of thousands of new classrooms have been built by the government and the community to ensure social distancing. For instance, in the Oromia region, more than 32,000 classrooms have been built.[8] Access to water and electricity has been improved in schools throughout the country. The Ministry of Education purchased 50 million washable masks from manufacturers in industrial parks in Ethiopia and has begun distributing two masks per student. About 500,000 masks were planned to be distributed to teachers (Addis Fortune 2020). The government has also finalized preparations to provide sanitizers and handwashing facilities in all public schools. All these efforts took WHO guidelines and recommendations into consideration.

The Ministry of Education planned to reopen schools step by step, taking into account geography and grade levels. In terms of geography, the first to reopen were rural schools because of the low spread of the pandemic in those areas. This was followed by regional townships and cities. Schools in Addis Ababa were last to reopen. In terms of grade level, grades 8 and 12 were first to start school, as they needed to sit for national examinations. The reopening of schools for the other grade levels was delayed due to security issues in the country. This step-by-step reopening is also tied to resource utilization of classrooms and teachers. Secondary schools could be utilized to teach primary students and vice versa, depending on necessity and availability.

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7   Most of the pre-primary schools in Ethiopia are operated by the private sector. Parents have been obliged to pay 75 per cent of tuition fees. Schools cannot fire teaching staff in private pre-primary, primary and secondary schools.

8   Fana Broadcasting Corporation.

4.3 Long-term plans and projections

The Ministry of Education prepared a ten-year (2020–2030) Education Development Plan, one of the core components of which is the utilization of digital technology in the education sector (Government of Ethiopia 2020b).[9] The plan takes note of current advances in technology and the need to adopt technology not only to respond to emergency situations and crises such as the COVID-19 pandemic but also to prepare students for employment in the twenty-first century. There are four components to the plan:

▶ utilization of digital technology for assessment and examination;

▶ digital technology for online training for teachers and school leaders;

▶ utilization of technologies for data acquisition, processing and management in education sector;

▶ creating digitally intensive schools and increasing interconnectivity between schools.

The plan is to be implemented in both primary and secondary schools within a ten-year period. The Education Sector Development Programme (ESDP) VI 2020–2025 has adopted these four components, with the last component also including digital learning for inclusive educational access (Government of Ethiopia 2020c). The components are summarized as follows.

▶ Utilization of digital technology for assessment and examination includes creating an online learning outcome assessment platform and an online national examination platform. The national examination platform is projected to save millions of dollars that is spent on allowances for examiners, publication of examination papers and transportation costs. It will save the country from damages amounting to US$130 million due to internet shutdown implemented by the government to prevent cheating.

▶ Digital technology for online training for teachers and school leaders includes two subcomponents. The first is the establishment of a teleconferencing system to make all meetings virtual from the federal to the woreda level; the second is development of a digital training and licensing system through which a total of 508,168 school and college leaders and teachers will be licensed and relicensed online by 2025.

▶ Utilization of technologies will assist with data acquisition, processing and management of school facilities, student information and statistics, schooling statistics, academic information and statistics and teachers' profiles.

▶ Creation of digitally intensive secondary schools includes developing information and communication technology (ICT) infrastructure, mainly high-speed internet connectivity; improving the capacity of digital technology utilization by developing digital policies, standards and strategies; and digital content development so that content can be delivered through different portable formats such as videos, pictures, and audio and electronic books.

The plan to digitalize the education sector is now in the implementation phase, with an elaborated project titled Digital Technology for Education Sector Transformation (D-TEST). The D-TEST scheme includes the four components of ESDP VI as well as two additional components: creation of educational sector digital IDs for students, teachers, non-teaching professionals and support staff; and development of a national educational cloud, which includes development of cloud infrastructure and services provided by the cloud.[10] The Ministry of Education has announced that digital IDs will be issued to 5 million students in the 2020/21 academic year.

Decisions have already been made with regard to the selection of technology, hardware and connectivity for short-term implementation, which will start in the 2020/21 academic year. The national examination platform will be functional in the 2020/21 academic year for grade 12 national examinations. Android-powered tablets, which have a built-in face recognition system, longer battery life and are impact proof, have been secured. The tablets will be preloaded with cheating avoidance and examination result reporting

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9   The ten-year plan is part of a wider reform agenda of the government, which coincided with the outbreak of the COVID-19 pandemic. The plan is technology oriented in its approach, but has a wider agenda.

10   Digital Technology For Education Sector Transformation (D-TEST): http://www.moe.gov.et/en/Dtest.

systems. Due to a lack of internet connectivity in rural areas, the short-term plan is to use satellite internet connection with a minimum speed of ten megabits per second. Table 1 summarizes the key activities that have taken place in relation to the COVID-19 pandemic in the education sector.

▶ **Table 1. Key COVID-19-related events and activities impacting the education sector**

No.	Date	Event or activity	Responsible body
1	16 March 2020	Indefinite closure of schools	Office of the Prime Minister
2	3 April 2020	Concept note for Education Sector COVID-19 Preparedness and Response Plan	Federal Ministry of Education
3	10 April 2020	Proclamation 3/2020: A State of Emergency Proclamation Enacted to Counter and Control the Spread of COVID-19 and Mitigate Its Impact	House of Peoples' Representatives
4	18 September 2020	Ministry of Health recommended the reopening of schools in a report to the House of Peoples' Representatives	Federal Ministry of Health
5	19 October 2020	Reopening of schools in rural areas and district towns for grade 8 and 12 students	Federal Ministry of Education
6	26 October 2020	Reopening of schools for zonal and regional cities; schools reopened for grade 8 and 12 students in Addis Ababa	Federal Ministry of Education
7	28 November 2020	Reopening of private schools for grade 1–12 students in Addis Ababa and in urban locations surrounding Addis Ababa	Federal Ministry of Education
8	7 December 2020	Reopening of public schools in Addis Ababa for grades 5 and above	Addis Ababa Education Bureau
9	21 December 2020	Reopening of public schools in Addis Ababa for grades 1–4; reopening of pre-primary schools in Addis Ababa	Addis Ababa Education Bureau
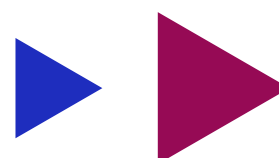
▶ 5. Impact of COVID-19 on the teaching profession

The COVID-19 crisis has had an impact not only on students but also on teachers. The majority of teachers stayed at home during the emergency period. All public sector employees, including teachers, maintained their jobs and salaries during the pandemic. The Government of Ethiopia put in place regulations requiring private educational institutions to continue paying teachers' salaries and parents to pay partial tuition fees for the education of their children.[11]

One of the requirements for the reopening of schools is a limit on the number of students per class. This will require more teachers due to the increased workload. The Ministry of Education, through its State Minister, appealed to former teachers, who are now politicians, civil servants in other sectors or employed by private institutions, to provide voluntary services. The Minister himself volunteered to teach physics to grade 12 students and started teaching at Menelik II Secondary School in Addis Ababa, which is walking distance from the Office of the Ministry of Education.[12]

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11   Fana Broadcasting Corporation.

12   Government of Ethiopia, "ሚኒስትሩ በ ሚኒሊክ 2ኛ ደረጃ ትምህርት ቤት የፈዚክስ ትምህርትን ለ12ኛ ክፍል ማስተማር ጀመሩ።", Ministry of Education, 26 October 2020. Available at: http://www.moe.gov.et/ViewNews/86#amn.

▶ 6. Governance and COVID-19 response

It is not clear to what extent the Ministry of Education consulted with the teachers' association, parents and schools in the development of the *Education Sector COVID-19 Preparedness and Response Plan: School Reopening Plan, Guidelines and Strategies* (Government of Ethiopia 2020d). The decision to reopen schools did not seem to have involved key education stakeholders (Mekonnen 2020). The establishment of the School Reopening Supervision Committee, however, involved education and health sectors, as well as administration experts, teachers and parents. Every school is to be inspected by locally established supervision committees and the decision to reopen a school is to be made locally. In the reopening of private schools, parent committees have been given the responsibility to confirm the schools' readiness. The government has tried to engage both public and private actors in the construction of additional classrooms. In addition, the Ministry of Education conducted a workshop at which radio journalists, regional communication experts, mini-media representatives and media experts participated to contribute to awareness on public health issues and school reopenings.[13]

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13   Government of Ethiopia, "የመ���ና ብዙኃንና የህዝብ ግንኙነት ባለሙያዎች ለትምህርት ቤቶች ዳግም መከፈት የበኩላቸውን ኃላፊነት እንዲወጡ የትምህርት ሚኒስቴር አሳሰበ", Ministry of Education, 9 October 2020. Available at: http://www.moe.gov.et/ViewNews/77#amn.
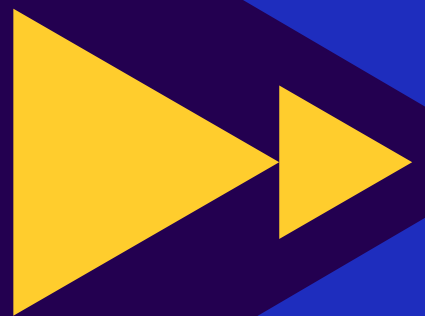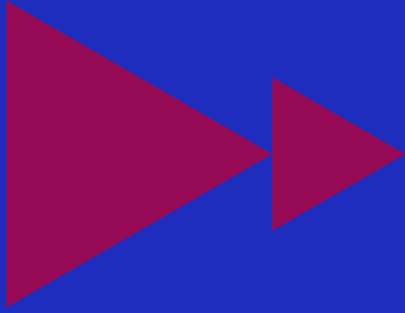
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