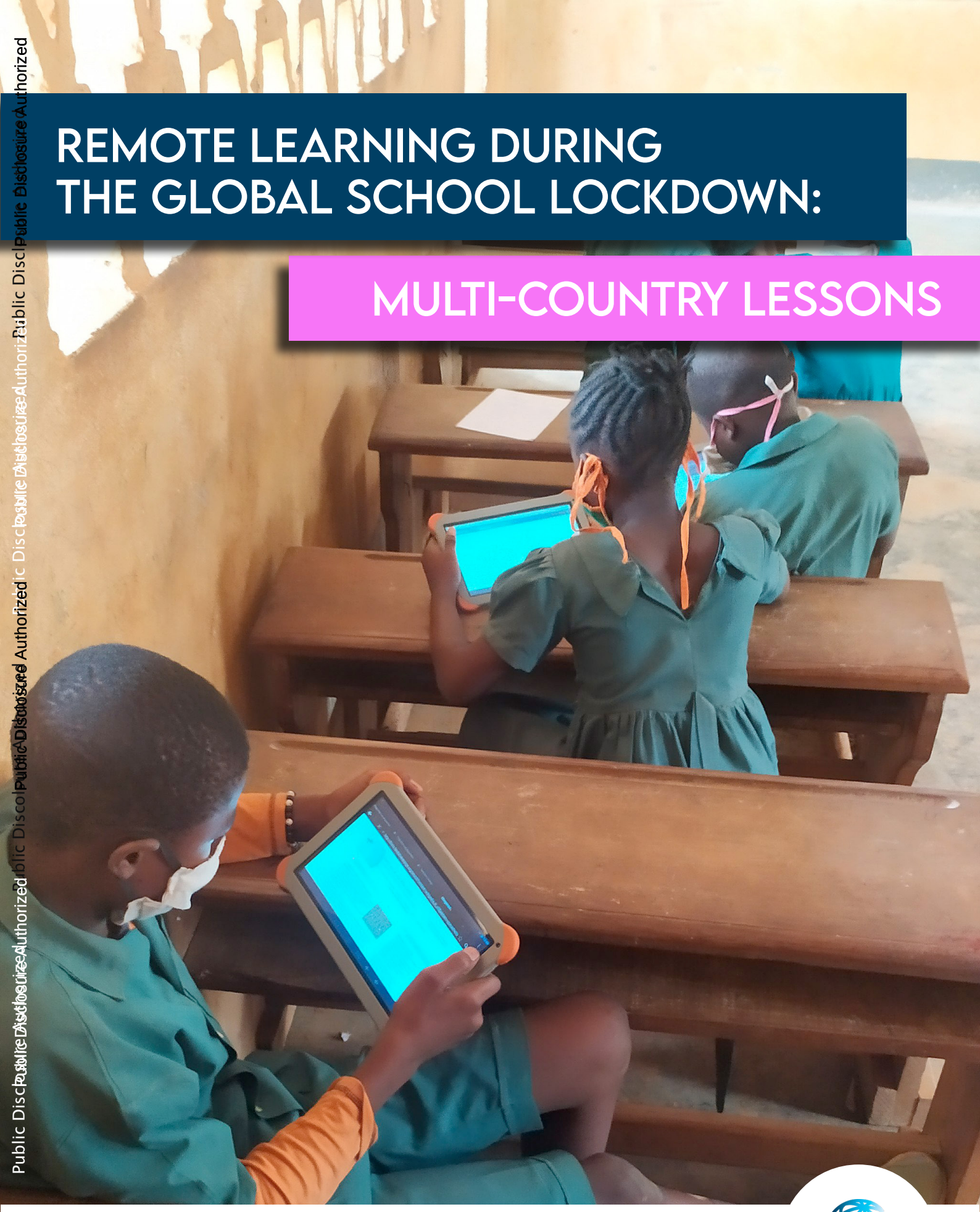
REMOTE LEARNING DURING THE GLOBAL SCHOOL LOCKDOWN:

MULTI-COUNTRY LESSONS



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EXPLORING THE DEPLOYMENT, PERCEIVED EFFECTIVENESS, AND MONITORING OF REMOTE AND REMEDIAL LEARNING

WORLD BANK GROUP

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EXECUTIVE SUMMARY

The COVID-19 pandemic is severely affecting education systems across the world. While schools are closed (or partially closed), simulations across different countries suggest that learning gains previously achieved by students will be partly lost. Children from disadvantaged backgrounds have suffered these shocks even more and can be at a higher risk of dropping out of school. To better understand the effects of these shocks, as well as to analyze the perceived effectiveness of remote learning solutions,[1] the World Bank Group's Technology and Innovation in Education (EdTech) team conducted a qualitative exploratory study synthesizing the main national education actions deployed by a group of selected countries to mitigate learning losses. This report is guided by the principles developed by the World Bank in the report Reimagining Human Connections, and the framework of the report The COVID-19 Pandemic: Shocks to Education and Policy Responses.

This study includes three main sections that have been organized in a chronological order within this report: the first one, "What can we learn from education emergency responses in low- and middle-income countries?" analyzes the emergency education responses to the COVID-19 pandemic of over 120 governments from April until May, 2020. The second section, "Is remote learning perceived as effective? An in-depth analysis across five countries" discusses the main national education responses deployed by Brazil, Kenya, Nigeria, Sierra Leone, and Peru, as well as the perceived effectiveness of these strategies conducted from May until August, 2020. The third section, "What works with remote and remedial strategies? an analysis across 13 countries" builds on key lessons learned during the analysis of the five multi-country experiences and presents global trends of remote learning implemented during school closures and the actions governments adopted to get ready for remedial learning, conducted from August until December 2020. The countries prioritized for the third section are IDA borrowing countries of which six are low-income countries: Afghanistan, Haiti, Malawi, Mozambique, Niger, and Rwanda; and five are lower-middle-income countries: Cambodia, Cameroon, Kenya, Nepal, and Pakistan. Additionally, two high-income countries, Estonia and Uruguay, have been included in the report (see Exhibits 1, 2, 3, and 4 for further information on the selected countries).

The overall study follows a qualitative research approach with the motivation to understand the perceptions of education experts regarding the effectiveness of remote and remedial learning programs implemented in their respective countries. When referencing the term effectiveness, this study follows a holistic approach by not only associating effectivity to learning outcomes, but also to the effect of remote education programs and policies to increase student engagement, increase coverage and usage, and reduce implementation costs and time. As this study seeks to answer exploratory questions, a qualitative study is best suited for this research context because it allows understanding of the perceptions that participants (education experts in each of the selected countries) attach to different categories related to remote and remedial learning, such as the effectiveness of delivery systems and the adjustment of the curriculum, among other categories detailed below. This research approach also provided an in-depth understanding of the context in which the research took place (see box 1.1).[2]

The main trends across this report are discussed below and have been grouped in five themes: (1) Adopt **delivery systems** with an inclusive approach; (2) **Adjust the curriculum** to ensure effectiveness; (3) Secure sustained **teacher training** and in-service support; (4) Leverage institutional capacities while ensuring **sustained monitoring and evaluation**; and (5) Consolidate national strategies to **remediate learning** losses.

[1] In the context of school closures, the most common remote learning solutions or delivery systems were based on video, audio/radio, computer technologies, and/or printed material.
[2] Economies are currently divided into four income groupings: low, lower-middle, upper-middle, and high. Income is measured using gross national income (GNI) per capita, in U.S. dollars, converted from local currency using the World Bank Atlas method.

1. ADOPT DELIVERY SYSTEMS WITH AN INCLUSIVE APPROACH

Multimodal delivery systems are effective to increase coverage but need to be complemented with a clear communication strategy and contextualized according to the local needs. For instance, in the state of São Paulo in Brazil, the multimodal remote learning program reached a high percentage of the student population, as the strategy was complemented with a proactive communication campaign that included (1) ads on TV and social media to keep teachers and families informed about learning activities, (2) a task force that contacted families of students who were out of reach, and (3) daily conversations between
the State Education Secretary and teachers.

While a clear communication strategy is a critical first step to let students and caregivers know the program, equally important is adjusting the delivery systems to the local needs to ensure an effective use by the target population. Access to the devices needed for remote learning, internet connectivity, prior experience with the delivery system, teacher preparedness and capacity, and quality of contents are among the contextual factors that need to be evaluated when designing and deploying remote education programs. Cambodia's government understood the country's infrastructure limitations and with support from the Global Partnership for Education (GPE) **provided school block grants to procure basic equipment** to support continuous learning, including paper-based learning materials for the most vulnerable students. This large- scale paper-based strategy was complemented with short message services (SMSs) and Telegram, a free instant messaging software, as the mobile penetration was high both in urban and rural areas.

Sierra Leone's Teaching Service Commission (TSC) followed a similar approach by implementing a radio learning program as access to these devices were widely available. Moreover, the TSC **had prior experience with radio learning programs** that were implemented during the Ebola crisis back in 2015, and the Ministry Radio Broadcast House had invested in infrastructure required for this program, such as a **radio studio that was built with support from the United Nations Children's Fund (UNICEF)**.

Equally important was to implement delivery systems following a Universal Design for Learning (UDL) approach to effectively reach a diverse student population. As students within a classroom have diverse needs, the UDL approach recognized that delivery systems should follow a design that took into consideration students' needs. In Peru, TV learning sessions were supported with sign language, the web was adapted for students with special needs, and the radio content was delivered in nine native languages. Likewise, in Mozambique, TV programs were supported with sign language, self-study materials were distributed to reach vulnerable children, and radio learning programs had content both in Portuguese and other local languages (IPS News Agency, 2020).

2. ADJUST THE CURRICULUM TO ENSURE THE EFFECTIVENESS

Adjustments to the curriculum and content curation are effective to reduce costs and use time more efficiently. Especially for countries that were experiencing distance education for the first time, lacked a repository of contents, or had limited TV or radio airtime, content curation and curriculum adjustments were necessary. For example, in Nepal, education experts perceived that adjusting the curriculum was a highly effective strategy to reduce costs when implementing remote learning programs; in fact, Nepal's Ministry of Education worked in collaboration with the Curriculum Development Center and nonprofit organizations to adjust the curriculum to just focus on core subjects and foundational knowledge for preprimary and primary schools (UNESCO, 2020a). In Afghanistan, education experts perceived that selecting core subjects, such as mathematics and science and prioritizing foundational contents within those subjects effectively reduced implementation time. Finally, while education experts in some countries perceived that curriculum adjustments and content curation were effective strategies to either reduce costs or use time more efficiently, other countries experienced both benefits. For example, Pakistan's Ministry of Federal Education selected English, mathematics, and sciences as core subjects to be prioritized through the TeleSchool remote learning program, and according to education experts in the country, this strategy enabled the education departments to reduce costs, be more responsive, and ensure that the content was rolled out quicker. Thus, investing time in researching content that already existed and curating it around the curriculum's learning objectives were perceived as more effective strategies than creating new content that takes time and costs money.

Curriculum adjustments should not only focus on academic competencies that are examinable but also on competencies that are relevant in the current situation of the pandemic. Policy makers have to consider prioritizing nonacademic competencies to support students coping with challenging situations they might be facing at home due to the COVID-19 pandemic. For example, self-directed learning, care for oneself and others, and social-emotional skills are among those noncognitive competencies that are critical to ensure students' socio-emotional development and well-being. Countries that have considered these competencies have seen students **gain autonomy and discover new ways of learning.** For example, in Estonia, a study conducted by the Independent Polling System of Society (IPSOS) and the World Childhood Foundation has shown that approximately 90 percent of students were satisfied with remote learning, and they were happier, healthier, and enjoying remote independent learning during the period of school closures due to higher levels of self-directed learning.

3. SECURE SUSTAINED TEACHER TRAINING AND IN-SERVICE SUPPORT

Sustained professional development through preservice and in-service teacher training, as well as remote coaching programs, are effective to equip teachers with the tools required for remote and remedial teaching–learning. The state of Edo in Nigeria trained all **11,000 primary school teachers** who were part of the Edo-BEST program in the past two years to effectively use digital technologies in the classroom. Uruguay's **Institute for in-Service Teacher Training** (IFS—Spanish acronym) took a coaching program online that provided pedagogical support to teachers prior to COVID-19. Moreover, **Uruguayan teachers could access a comprehensive toolkit of teaching resources** such as discussion forums, virtual training, and guidelines for remote teaching through CREA, a Learning Management System that teachers had been using for several years. Over **90 percent of Uruguayans were satisfied or very satisfied** with the remote training received during the pandemic. Thus, prior training and coaching worked to pivot toward remote teaching–learning during COVID-19.

While preservice and in-service teacher training were relevant, during the pandemic, guidelines for remote education have helped to clarify the enhanced role for teachers, but an excessive administrative workload may generate burnout and reduce pedagogical effectiveness. In specific cases, this study found that the pandemic evidenced the need to recalibrate how teachers divide their time between direct teaching and an administrative workload, because too much attention was given to the latter. For instance, in some of the selected countries of this study, teachers were asked to complete frequent administrative reports of their lesson plans and the results of students' progress; thus, well-intentioned teacher support systems resulted in generating emotional and physical exhaustion. For example, in Peru, according to a survey conducted by the Ministry of Education's Monitoring & Evaluation Unit, 40 percent of teachers said that they were performing a very hard job, as they had to submit **daily reports of their remote work with students.** Estonia's Ministry of Education officials raised the concern that teachers' time allocation has changed, and distance learning affected well-being and burnout rates due to enormous pressures of dealing with COVID-19. In Brazil, according to **a survey conducted by Instituto Peninsula**, 83 percent of teachers did not consider themselves being prepared to teach remotely, 67 percent were anxious and 38 percent felt tired, while less than 10 percent were happy or satisfied. A similar situation applied in other countries, such as England, where **headteacher job satisfaction has fallen** because they were worried about school budgets, keeping staff and students safe from COVID-19, and finding cover for sick or self-isolating teachers. In Chile and other Latin American countries, **the quality of life perception among female teachers was affected** due to the COVID-19 confinement, and several studies reported that female teachers in the region did more hours of housework than male teachers. Countries took note of these problems and redesigned the reporting system to reduce the "burnout" problem. Efforts to free teachers' time from administrative tasks were critical in a time when students needed not only support to catch up but to deal with socio-emotional issues.

4. LEVERAGE INSTITUTIONAL CAPACITIES WHILE ENSURING SUSTAINED MONITORING AND EVALUATION

Prior experience with distance learning programs has allowed education systems to rapidly implement their existing solutions as a response to COVID-19. Some of the countries that were part of this study pivoted toward remote learning because their governments had been building technical and digital capacity for several years. For example, Sierra Leone leveraged an existing radio learning program and launched it on April 6, 2020, within less than one week after schools were closed in the country. Similarly, Uruguay's Ceibal at-home program was launched immediately after school closures were announced because it could draw on the pre-existing systematic deployment of Plan Ceibal's digital resources. Malawi leveraged an existing Interactive Radio Instruction program, which was adapted to the COVID-19 context, and the lessons were then more child-centered and clearly structured (Gondwe, 2020). Policy makers from the countries analyzed in this study showed interest in leveraging the experience gained prior to and during the pandemic to ensure learning continuity as schools started to reopen under a blended approach. This work entailed being aware of the context, strengthening the content repository and infrastructure, understanding the costs, and securing funding for setup and maintenance.

While leveraging institutional capacities gained prior to and during the pandemic was critical to ensure learning continuity, equally important were to continually monitoring and evaluating education processes and outcomes to understand if the whole remote education strategy is effective to reach all students, sustain learning engagement, and increase learning outcomes. Most of the selected countries for this study focused on the supply side by designing and implementing remote learning programs and monitoring processes, while fewer focused on monitoring the demand side, such as the usage of delivery systems for education, the engagement of students while studying remotely, and student learning. Since April 2020, Peru's Ministry of Education started regularly supervising the adoption of the national remote learning program, students' satisfaction with remote learning, and the proportion of teachers providing constant feedback to students, among other key indicators. In a smaller set of countries, schools and teachers started conducting formative and summative assessments. For example, in Estonia, as of June 2020, 71 percent of students used online formative assessments and 64 percent received feedback from teachers. As countries innovated in their monitoring and assessment solutions, it was again critical to consolidate institutional capacities to process and use the data gathered for guiding decision-making and make adjustments.

5. CONSOLIDATE NATIONAL STRATEGIES TO REMEDIATE LEARNING LOSSES

Several countries planned to or implemented extra support programs to remediate learning losses as schools started reopening. Some governments took an "ex post" approach toward remedial learning by postponing these programs until after schools reopened and students were assessed to identify the magnitude of the learning loss problem. For example, Rwanda's government designed a national diagnostic assessment for primary and lower secondary schools to identify students with low scores for remedial learning. After assessments took place, a remedial learning program targeted students with a poorer rate of academic progress and those at risk of repetition or dropout. In contrast, other countries followed an "ex ante" approach in which first students were supported to catchup and avoid dropping out by introducing remedial learning or accelerated learning programs, under the assumption that a large group of students were affected by school closures. For example, Mozambique's government adjusted the school calendar to first focus on catch-up strategies for students who were falling behind, especially for grades 7, 10, and 12, as students in these grades had to sit for examinations.

The specific strategies used in the selected countries to support students in catching up varied considerably. This study identifies four main packages to remediate learning losses. First, a group of countries linked its **curriculum adjustment** efforts with the remedial programs implemented. That is, adjustments to the curriculum were not only considered for remote learning during school closures, but also for remedial learning as schools start reopening through the prioritization of core subjects and selection of foundational competencies and contents. Second, governments **adjusted the schedules** to remediate learning losses by extending class time at the end of the day or during weekends and extending the calendar year by introducing summer classes. Third, **the learning format** followed to remediate learning losses varied by country. While some education systems reopened schools fully to conduct such programs in classrooms with reduced class sizes, others implemented remedial programs through a blended learning approach. Fourth, countries implemented **targeted catch-up programs** to support students. While some countries implemented remedial programs that targeted students with a poorer rate of academic progress and were generally designed to give them the individual attention needed, others implemented accelerated learning programs designed to be completed quickly through short, intensive, and rigorous phases of learning.

Therefore, the COVID-19 pandemic presents unique opportunities to innovate the traditional school model. Countries should seize these opportunities to build more inclusive, efficient, and resilient education systems, but avoid replicating the failures of pre-COVID-19 education systems. This crisis revealed that governments can rethink how to simplify the curriculum, adjust high-stakes examinations, and invest in building effective data gathering systems to monitor processes and learning outcomes

CHAPTER 1

WHAT CAN WE LEARN FROM EDUCATION EMERGENCY RESPONSES IN LOW- AND MIDDLE-INCOME COUNTRIES?

Tamandani-Lungu

I. WHAT CAN WE LEARN FROM EDUCATION EMERGENCY RESPONSES IN LOW- AND MIDDLE-INCOME COUNTRIES?

According to the United Nations Educational, Scientific, and Cultural Organization's (UNESCO's) Institute for Statistics data, as of June 2020, 123 countrywide closures were still affecting 1.1 billion students, which was approximately 62 percent of total enrollment (UNESCO 2020c). Even though schools were closed, most governments around the world designed and implemented nationwide remote learning initiatives during the COVID-19 pandemic. This section of the report compiles the main education emergency actions that were deployed by different low- and middle-income countries (LMICs) to enable learning during school closures (UNESCO Institute for Statistics, 2020).

School closures and the economic downturn severely affected education systems. While schools were closed, learning gains that students previously achieved were partially lost. Children from disadvantaged backgrounds suffered these shocks even more, and were at a higher risk of dropping out of school (World Bank 2020a). However, several LMICs reacted quickly to mitigate these shocks to their respective education systems. The first section of this report analyzes governments' education responses to the COVID-19 pandemic from April until May 2020.[3] As of this date, most countries were focused on coping with the emergency by designing and implementing remote learning programs aimed at reaching all students and teachers, but less on monitoring progress and designing programs for remedial learning (see further information in table 1.1).

Table 1.1: Education Emergency Responses in Five Main Themes

Delivery systems	Curriculum adjustments	Teacher support	Monitoring and evaluation	Remedial programs
Most countries implemented multimodal learning solutions aimed at reaching all students, but the type of systems used varied across regions	It was not a priority to adjust the curriculum at the beginning of the pandemic, but remote education programs were aligned to the curriculum	Governments and third-sector organizations implemented support systems and training programs for teachers to help them adapt to this new normal	Few countries demonstrated plans to conduct diagnostic evaluations or monitor progress	By assessing learning loss, systems should develop remedial programs to prevent an exacerbation of the achievement gap
Zambia Strengthened its radio learning program and distributed solar radios, leveraging the program "Learning at Taonga Market"	Note: At the time this section of the study was conducted, no data on curriculum adjustments were gathered	**Costa Rica** Created a digital toolbox to support teachers with pedagogical resources, such as a guide for autonomous work	**Nagaland (India)** Developed an online evaluation portal accessible through any device, even in 2G internet connections	**Brazil** "Acelera" remedial program (pre-COVID-19) identified students who were lagging and supported them to gain the basic skills to pass

Source: Own elaboration with data from secondary sources obtained from the following links Zambia, Costa Rica, India and Brazil.

[3] This disclaimer informs readers that the opinions expressed in the text belong to the author, and not necessarily to the World Bank. The information contained in this first section of the study was collected between April and May, 2020, and given the space and time constraints, it does not guarantee completeness of country responses to COVID-19.

This report follows a framework developed by the World Bank (2020b) to help countries mitigate short- and long-run costs to education through three overlapping phases: (1) coping, (2) managing continuity, and (3) initial policy takeaways. This report also draws on the World Bank's guiding principles to design and implement remote learning strategies through different channels: offline, broadcast, and online (World Bank 2020c). While evaluating the design and delivery of distance learning plans in different regions, this report has been guided by a concern for equity and inclusion, as well as by a need to tackle both immediate requirements and long-term objectives. It also focused on efforts being made to diminish learning losses[4] in three regions: Africa and the Middle East, Asia and Eastern Europe, and Latin America and the Caribbean. By studying remote learning initiatives implemented in these regions, the first section of this study aimed to answer the following questions:
(1) Were policy recommendations in LMICs effectively implemented during the emergency phase of the pandemic?
(2) Were remote learning strategies effective to cope with the COVID-19 pandemic?

Box 1.1: Conceptual Approach

This study starts with the section "What can we learn from education emergency responses in low- and middle-income countries?" that is based on a general review of secondary sources. Over 40 research studies, policy documents, articles, and datasets were reviewed to provide a general overview of the emergency education responses of over 120 governments from April until May 2020. Although this first section does not provide an in-depth understanding of the context of each of the countries analyzed, it was conducted early on to provide a broad overview of how countries in different regions (Africa and the Middle East, Asia and Eastern Europe, and Latin America and the Caribbean) responded to the emergency.

The second section "Is remote learning perceived as effective? An in-depth analysis across five countries" provides a comprehensive understanding of education responses to COVID-19 through the voices and perceptions of key education experts in each of the selected countries. A diverse set of countries that were implementing innovative approaches to respond to the COVID-19 pandemic, from the three regions listed in the first section (Africa and the Middle East, Asia and Eastern Europe, and Latin America and the Caribbean), were purposively invited to participate in this first study. Brazil, Kenya, Nigeria, Peru, and Sierra Leone agreed to be part of this section of the study. For this report, over 60 semi-structured interviews were conducted between May and July 2020 with key informants, such as the Ministry of Education policy makers, teacher union officers, and leaders of nongovernmental organizations (NGOs), among other experts. As a complement, over 70 documents and online resources of the five selected countries were reviewed for this section of the report.

For the third section, "What works with remote and remedial strategies? An analysis across 13

[4] Learning loss: specific or general loss of knowledge and skills or a reversal in academic progress, most commonly due to extended gaps or discontinuities in a student's education.

countries," the data collection process followed a multi-method approach that includes semi-structured surveys and interviews with at least three profiles of education experts: an EdTech policy maker, the head of a local education unit or an NGO, and a researcher or academic in the field of education. In total, over 70 surveys and interviews were conducted for this third section of the report between September and November 2020. The country selection criteria had an extensive focus on low-income and lower-middle-income countries from the three regions listed in the first section (Africa and the Middle East, Asia and Eastern Europe, and Latin America and the Caribbean). Additionally, as the focus of the study was also to learn from countries with vast remote learning experience, two high-income countries were included in the report. The countries prioritized (in this third section) are all part of the International Development Association (IDA), of which six were low-income countries, namely Afghanistan, Haiti, Malawi, Mozambique, Niger, and Rwanda; and five were lower-middle-income countries, namely Cambodia, Cameroon, Kenya, Nepal, and Pakistan. Also, two high-income countries, Estonia and Uruguay, were included in the report because both governments have been building technical capacity for remote teaching–learning for several years.

This educational research aims to provide rich descriptions of education experts in the selected countries in order to have a broader understanding of education responses to COVID-19 and the perceived effectiveness of remote and remedial programs implemented. The results of this study not only apply to the initial study context, but findings from the context in which this research are based can be "transferrable" to other contexts that are congruent with the context of the present case study.

MITIGATING LEARNING LOSS IN THE LMICs

The pandemic severely affected education systems across LMICs. While schools were closed, student learning gains were partially lost. As studies on the impact of missing school can provide projections of learning loss, in April 2020 researchers in the Global North estimated that students were going to start the 2020 school year with 70 percent of learning gains in reading and less than 50 percent in math—in comparison to a typical school year (Kuhfeld and Tarasawa 2020; Kuhfeld et al. 2020); effects in the LMICs might have been even more dramatic. Researchers warned that the interruption to the school year could increase dropouts, as the lack of interaction between teachers and students reduced the attachment to schooling for those children who were already at a disadvantage. The number of school dropouts could also increase because of the opportunity costs of educating children: the poorest households faced budget constraints, and parents prioritized sending children to work rather than letting them study to supplement household income (O'Donell et al. 2020; World Bank 2020a).

Unfortunately, the most disadvantaged children are the ones who suffer these consequences even more because they usually lack the educational support that wealthier families give to their children. As a consequence, school closures due to the pandemic further exacerbated the pre-existing inequities in learning outcomes prevalent in most systems, and the economic recession only aggravated these shocks to education (DeStefano, Piper, and Stern

2020; World Bank 2020a).

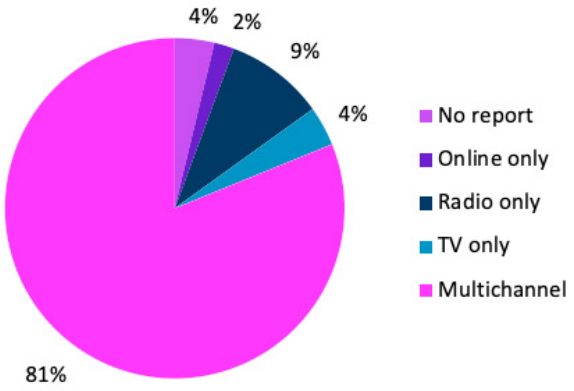
International organizations supported governments to mitigate shocks to their respective education systems. For instance, the World Bank (2020b) developed a set of policies to mitigate shocks to education through three overlapping phases: (1) coping, (2) managing continuity, and (3) improvement and acceleration (see Exhibit 5). Coping policies were designed to help education systems manage the immediate impacts of school closures, such as preventing learning loss through remote learning. Managing continuity policies aimed to guarantee that schools reopened and reintegrated students to start learning recovery. Improvement and acceleration policies focused on recommendations to build stronger education systems, incorporating innovations developed during the crisis response (World Bank 2020b).

COPING POLICIES IN AFRICA AND THE MIDDLE EAST

As of May 2020, school closures due to the COVID-19 pandemic affected more than 320 million children across Africa and the Middle East (UNICEF, 2020b). This scenario was particularly complicating for families who lacked access to resources required for distance learning. For example, in Sub-Saharan Africa, nearly 90 percent of people did not have access to computers at home, more than 80 percent lacked internet access, and approximately 56 million lived in areas that were not served by mobile networks (UN, 2020b). Thus, when developing national remote learning plans, policy makers needed to give special consideration to the vast majority of the population that lacked access to proper technological infrastructure and connectivity.

Even with those difficulties, several African countries moved fast and implemented coping policies to mitigate the negative effects of school closures. For instance, by analyzing a dataset of 55 countries in Africa and the Middle East (UNICEF 2020d), almost all countries had a coordination mechanism in place for their COVID-19 education response, such as a working group or a dedicated Ministry of Education crisis management unit (see Exhibit 6). As of May 2020, 81 percent of countries planned and delivered remote learning using a multimodal approach rather than just using a unimodal delivery system (see figure 1.1).[5]

Figure 1.1: Share of Countries Supplying Multimodal vs. Unimodal Strategies in Africa and the Middle East



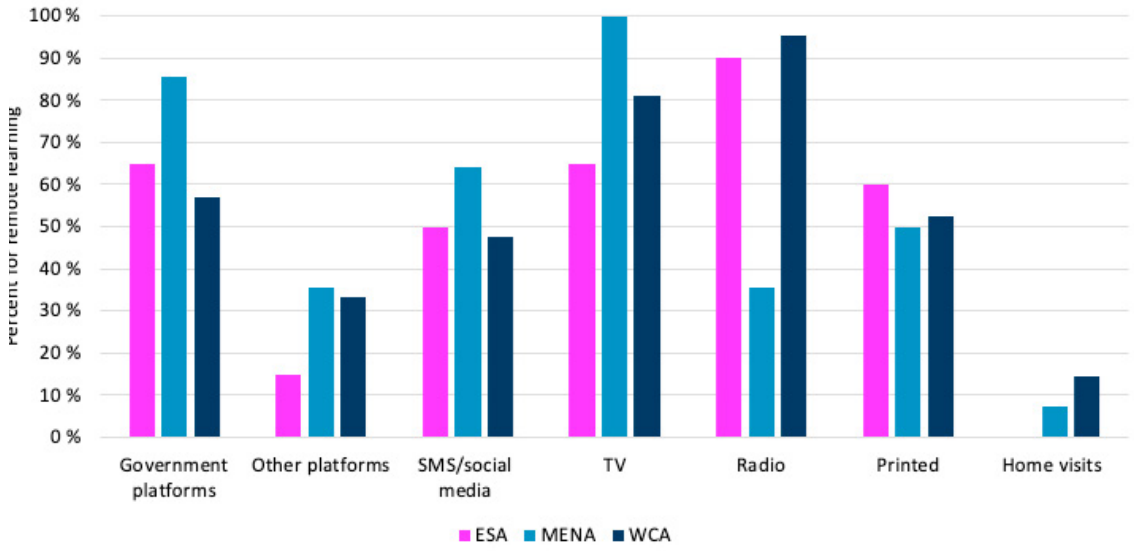
Source: Own elaboration, data from UNICEF Global Tracker (May 2020).

It is clear that most countries in Africa and the Middle East rapidly implemented remote learning solutions through different channels. Equally important has been to guarantee that these multimodal programs were targeted to the country context. By zooming in on the different areas within the region, data showed that depending on the location, the preference of the channel to deliver remote learning varied (UNICEF 2020d). For example, in the Middle East and North Africa (MENA) all countries used TV programs to deliver educational content, while 65 percent of countries in Eastern and Southern Africa (ESA)

[5] From UNICEF Global Tracker: National Education Responses to COVID-19 (May 2020). The share of countries that responded to school closures with different delivery systems (multimodal vs. unimodal). The figures illustrate the governments' supply of channels for remote learning rather than the access and/or usage of those delivery systems. Data declared by the Minstry of Education (MOE) and statistical units collected from 123 countries across Africa and the Middle East, Asia and Eastern Europe, and Latin America and the Caribbean (LAC).

and 81 percent of countries in Western and Central Africa (WCA) used TV programs to deliver content (see figure 1.2). Also, the variety of channels used to deliver remote learning varies considerably by country. As of May 2020, while Namibia and Nigeria were using six or more delivery systems, other countries were using two or fewer channels (see Exhibits 7 and 8).

Figure 1.2: Education Delivery Systems in ESA, MENA, and WCA



Source: Own elaboration with data from UNICEF Global Tracker (May 2020 report).
Note: ESA = Eastern and Southern Africa; MENA = Middle East and North Africa; WCA = Western and Central Africa.

Education systems have assessed their current resources to implement remote learning solutions that can be scaled up rapidly to reach all students (World Bank 2020a). In April 2020, Zambia developed a set of coping policies to mitigate learning loss. Government officials understood the country's infrastructure limitations (see Exhibit 8): 74 percent of households possessed a mobile phone, 47 percent a radio, 37 percent a TV, and only 7 percent had access to the internet (MoGE 2020; ADEA 2020a). As part of its multichannel strategy, Zambia committed to strengthening its radio learning program, distributing solar radios, and training teachers to engage with students through distance learning (GPE 2020f). The good news was that Zambia had a history of radio instruction programs. In 2000, the government launched "Learning at Taonga Market" to deliver distance education to children who had never been to school (Heymann, Sherr, and Kidman 2012). Similarly, Sierra Leone's government prioritized leveraging on an existing radio learning program and relaunched it on April 6, 2020, within less than one week after schools were closed due to COVID-19 (Mutseyekwa 2020). Kenya's government also strengthened its existing multimodal remote education program by doubling the number of hours of its radio program, improving the interactivity of the TV sessions, and increasing the content repository in its digital site. These countries were able to leverage past experience and strengthen available content (see further information in table 1.2) to rapidly scale these solutions (UNICEF 2020a; ADEA 2020b). Thus, in several regions within Africa where over 80 percent of school-age children 3 to 17 years old were unconnected to the internet at home, countries needed to assess their infrastructure resources, leverage past experience, and strengthen available content to rapidly scale these solutions (see further information in table 1.2).

Table 1.2: Plans to Strengthen Existing Remote Learning Programs

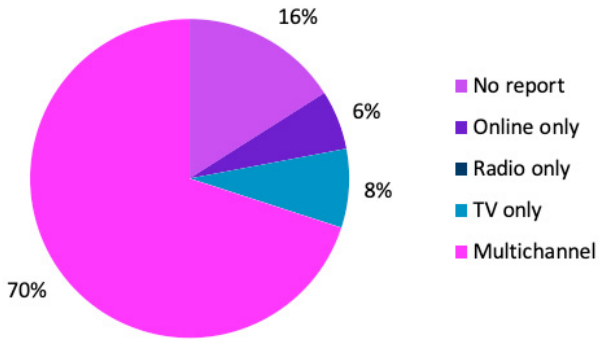
Program	Description
Zambia's Radio Plan	Interactive radio program for early grades covering three local languages.
Sierra Leone's Radio Plan	Plan to strengthen radio learning program for all educational levels.
Kenya's Multimodal Plan	Plan to strengthen radio, TV, and digital remote education programs.

Source: Own elaboration with data from secondary sources obtained from the following links Zambia, Sierra Leone and Kenya.

COPING POLICIES IN ASIA AND EASTERN EUROPE

As of May 2020, more than 500 million children were affected by school closures in the East, Pacific, and South regions of Asia and Eastern Europe (UNICEF 2020b). Similar to Africa and the Middle East, governments in Asia made efforts to ensure children from marginalized communities, those who relied on social services such as school feeding or lacked access to devices needed to learn while schools were closed, were not left behind (Pasic 2020). As in other regions, policy makers in Asia needed to account for these factors when planning and delivering remote education strategies.

Figure 1.3: Share of Countries Supplying Multimodal vs. Unimodal Strategies in Asia and Eastern Europe

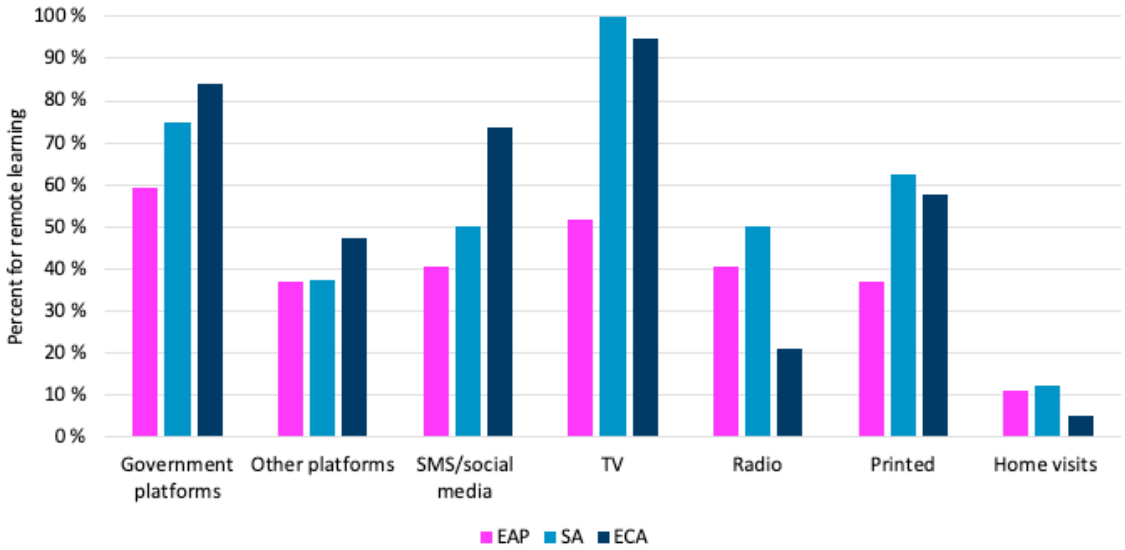


Source: Own elaboration, data from UNICEF Global Tracker (May 2020).

According to UNICEF's (2020d) Global Tracker of National Education Responses to COVID-19, 20 out of 34 countries in Eastern, Pacific, and South Asia set up coordination mechanisms for their COVID-19 education responses by the end of April 2020 (see Exhibit 9). Also, as of May 2020, 70 percent of the countries in Asia and Eastern Europe planned and delivered distance learning through a multimodal rather than a unimodal strategy (see figure 1.3), and most of them planned to monitor and evaluate these programs (see Exhibit 10). TV and online platforms were the most used channels to deliver remote education; however, radio learning programs were less prevalent in this region. This effect was partly driven by Eastern Europe and Central Asia (ECA), where 80 percent of countries were using online programs to deliver remote education (see figure 1.4).[6]

[5] From UNICEF Global Tracker: National Education Responses to COVID-19 (May 2020). The share of countries that responded to school closures with different delivery systems (multimodal vs. unimodal). The figures illustrate the governments' supply of channels for remote learning rather than the access and/or usage of those delivery systems. Data declared by MOE and statistical units collected from 123 countries across Africa and the Middle East, Asia and Eastern Europe, and LAC.

Figure 1.4: Education Delivery Systems in EAP, SA, and ECA



Source: Own elaboration with data from UNICEF Global Tracker (May 2020 report).
Note: EAP = East Asia and Pacific; ECA = Eastern Europe and Central Asia; SA = South Asia

The variation of remote learning channels used by countries within Asia and Eastern Europe reflected that countries within this area of the world had different resources and that multimodal solutions were targeted to the country's specific needs. On the one hand, South Asia (SA) has a higher percentage of countries that implemented a diversified multichannel strategy than Eastern Asia and Pacific (EAP). On the other hand, ECA had the highest percentage of countries that implemented remote learning through digital channels (see figure 1.4). Furthermore, similar to Africa, the variety of channels used to deliver remote learning varied among countries in the Asian continent (Patrinos and Shmis, 2020). For example, as of May 2020, while Malaysia and Cambodia were using five or more channels, other countries were using just one channel to deliver remote learning (see Exhibits 10 and 11).

The design and implementation of remote learning through multimodal solutions was just one important part of the coping policies to mitigate learning loss during school closures. Equally relevant was to help parents and caregivers so that they could support remote learning of their children while at home, as well as to keep their family safe. This guidance was critical as homeschooling has been a new activity for most of them, one that takes time and effort (World Bank 2020a). Studies found that parents were willing to support their children with homeschooling activities (Cashman 2019). For example, in rural India, 85 percent of guardians were willing to support their child's studies at home and 77 percent had time to do so; however, only 16 percent ended up helping children with their homework, as families did not have the knowledge to recognize whether their children were learning or the resources to support them (Cashman, Bhattacharjea, and Sabates 2020). Moreover, the study showed that asset "poorer"[7] parents were less likely to support their children with homeschooling activities (Cashman, Bhattacharjea, and Sabates 2020). Thus, governments needed to provide guidance to parents so that they could support their child's studies at home; special attention needed to be given to those who lacked the devices needed for remote learning, such as radio, TV, or

[7] Asset index scale that considers the ownership, or lack of six assets, to assess the level of deprivation in a household (model adapted to Uttar Pradesh): connection to electricity, toilet facility inside the house, TV, chair, motorized vehicle, and the primary mode of cooking.

mobile phones. Central Asian countries such as Kazakhstan, Kyrgyzstan, Uzbekistan, and Tajikistan were supported by UNICEF (2020c) to develop an interactive chatbot that parents could use to solve doubts about COVID-19. Some organizations started directly targeting parents and offered them support (see examples in table 1.3).

Table 1.3: Apps to Support Parents in Asia

Organization	Focus
ThinkZone India	Scaled up a voice-based engagement program that used phone calls and SMS to support parents. Model switched from educator-to-children to parent-to-children (Hobson 2020).
TopParent India	Free mobile app developed by the Central Square Foundation to empower parents with knowledge and strategies around child development—age group of 3 to 8 years.
HealthBuddy Central Asia	Interactive chatbot that parents can use to solve doubts about COVID-19 to keep their children safe.

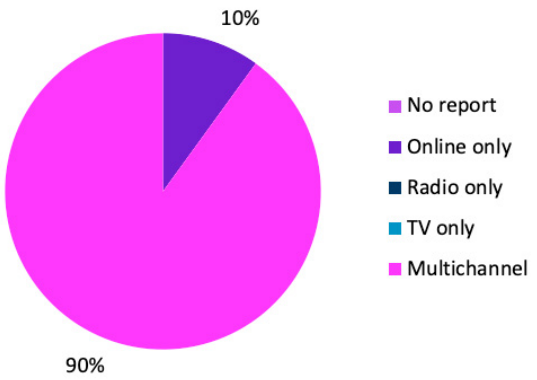
Source: Own elaboration with data from secondary sources obtained from the following links ThinkZone India, TopParent India and HealthBuddy Central Asia.

COPING POLICIES IN LATIN AMERICA AND THE CARIBBEAN

As of May 2020, school closures caused by the pandemic affected more than 140 million children in Latin America and the Caribbean (UNICEF 2020b). As had occurred in other regions, the prolonged closure of schools had negative repercussions, especially in countries that lacked effective mechanisms to deliver remote learning according to the needs of households (Alvarez et al. 2020).

According to a report developed by the Inter-American Development Bank (IADB), most countries in Latin America had already some digital educational resources for students and teachers, but few had learning management systems (LMSs), robust learning platforms, or digital content repositories (Alvarez et al. 2020). Even more critical, governments in the region had difficulties to plan and manage nation-wide education systems; thus, doing so remotely introduced complications, especially because most countries did not have a national strategy for distance learning. Considering these limitations, the IDB suggested countries across the region consider the following coping policies: (1) sustain the teacher-student, family-school relationship, (2) deliver content that is aligned with the curriculum, and (3) provide support and monitoring to the teaching and learning processes (Alvarez et al. 2020).

Figure 1.5: Share of Countries Supplying Multimodal vs. Unimodal Strategies in LAC



Source: Own elaboration, data from UNICEF Global Tracker (May 2020).

With the considerations mentioned above, governments across the LAC region were flexible and innovative to design and implement remote education systems (Cobo, Hawkins, and Rovner 2020). According to UNICEF's (2020d) Global Tracker of National Education Responses to COVID-19, almost all countries in Latin America put in place an intersectoral committee during the pandemic. In regard to distance learning delivery, as of May 2020, 90 percent of countries surveyed had implemented remote education programs using multimodal rather than unimodal strategies (see figure 1.5), and most countries planned to implement monitoring systems and considered a strategy for school reopening (see Exhibit 12).[8]

This report stresses the importance of assessing each country's infrastructure and resources to implement remote learning solutions contextualized to the local needs (World Bank 2020b). Interestingly, all countries in the LAC region developed or strengthened some type of learning platform to provide remote education during the COVID-19 pandemic (see Exhibit 13). However, on average, only 24 percent of households of the countries under analysis had access to the internet. At the same time, 81 percent of households of these countries had access to a TV and 70 percent to a radio, but not all countries in the region implemented learning programs that could be accessed through TV or radio (see Exhibits 13 and 14). Thus, it is relevant to restate that, though digital technologies can offer scalable and engaging solutions, they are not the panacea. Countries also need to ensure that content can be used offline; for example, even though Costa Rica has one of the highest internet rate penetrations in the region (World Bank 2020d), the MOE planned to deliver hard copy resources for parents with no access to the internet, which is approximately 35 percent of households (Cobo, Hawkins, and Rovner 2020).

This report does not argue that countries should use specific channels and avoid others to deliver remote learning, but they should combine a variety of channels that are more aligned with the local context. Teachers need to complement content provided through these channels with the right guidance for students. Thus, it is crucial to support teachers through training so that they adapt to this new environment and improve the pedagogical skills needed to teach remotely. For those who teach in areas with internet access and whose students have been using digital platforms to learn, the government has to make sure they have the appropriate digital skills to guide students in this process (see examples in table 1.4). In the LAC region, the Varkey Foundation launched Comunidad Atenea, a free online collaborative learning community that allowed teachers to upload educational activities to aid their peers in their professional development (Varkey Foundation, 2020). Costa Rica's Ministry of Education created a digital toolbox to support teachers with pedagogical resources, such as a guide for autonomous work (Cobo, Hawkins, and Rovner 2020). The Minas Gerais State Secretary of Education (2020) in Brazil developed the mobile application "Conexao Escola" to encourage teacher-student interaction for a limited amount of time after each class, thus avoiding a situation in which students contacted teachers through WhatsApp or text messaged at any time of the day. Also in Brazil, the organization Nova Escola partnered with Facebook and created the project "Educação em Rede" to train over 2 million teachers in digital and pedagogical skills during the COVID-19 pandemic (Facebook 2020). Uruguay, the only country in the region that had an LMS prior to COVID-19, was able to leverage its existing digital infrastructure to deliver remote learning and support teachers during the pandemic. This system allows teachers to monitor student learning remotely (Alvarez et al. 2020).

[8] From UNICEF Global Tracker: National Education Responses to COVID-19 (May 2020). The share of countries that have responded to school closures with different delivery systems (multimodal vs. unimodal). The figures illustrate the governments' supply of channels for remote learning rather than the access and/or usage of those delivery systems. Data declared by MOE and statistical units collected from 123 countries across Africa and the Middle East, Asia and Eastern Europe, and LAC.

Table 1.4: Teacher Support in LAC

Program	Description
Comunidad Atenea	Platform that allows teachers in LAC to share best practices.
Caja de Herramientas	Digital toolbox for teachers in Costa Rica.
Repositorio Recursos Abiertos	Open repository created by teachers for teachers in Uruguay.
Conexao Escola	Zero-rated mobile app for teacher-student interaction in Minas Gerais.
Educação em Rede	Practical remote training program for teachers across Brazil.

Source: Own elaboration with data from secondary sources obtained from the following links Comunidad Atenea, Caja de Herramientas, Repositorio Recursos Abiertos, Conexao Escola, Educaçao em Rede.

LOOKING AHEAD: MANAGING CONTINUITY AND BUILDING BACK BETTER

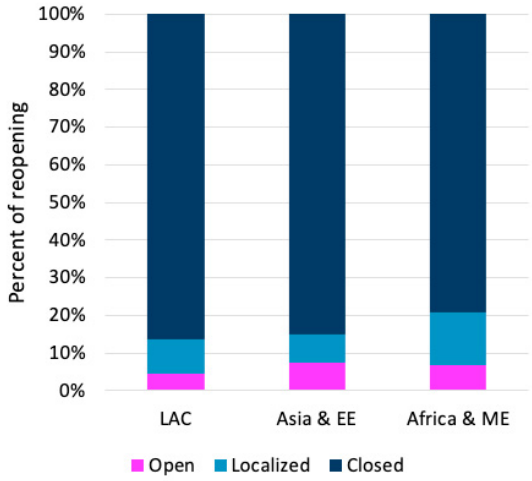
Coping policies to mitigate learning loss were crucial, and most countries reacted quickly to implement remote education strategies during the emergency phase of the COVID-19 pandemic. However, even with strong coping strategies, remote education cannot replace the learning environment that a teacher and the classroom provide (World Bank 2020a). Thus, managing continuity policies were needed to ensure schools reopened, dropouts were minimized and learning recovery started. The earlier the school reopening process occurred, the less risk of long-term damage to the learning journeys of children (Giannini, Jenkins, and Saavedra 2020). As schools become safe to reopen, classrooms were equipped for learning, and teachers were continually supported, students needed to be reintegrated safely to allow for learning recovery, giving special attention to those students who suffered the biggest learning losses. It was equally important to provide socio-emotional support to children who may have lost their caregivers to illness, as well as those who had gone through difficult situations, such as having an income-generation role to keep their family financially solvent. At the same time, improving and accelerating policies were needed to start thinking about how to build back better. Countries also needed to seize the opportunity provided by the crisis response and innovations implemented during the coping phase to build stronger education systems (World Bank 2020a).

ORGANIZING EDUCATION SYSTEMS FOR LEARNING RECOVERY

As previously discussed, several LMICs implemented innovating coping policies to deliver remote education at scale; however, even with strong coping strategies, it is assumed that there were learning loss and the achievement gap widened. Even more complicated, coping policies hardly prevented school dropouts, and as poor families

faced financial constraints, they prioritized sending children to work rather than to study—girls being more affected than boys (O'Donell et al. 2020). Thus, planning for safe school reopening was key to ensure students were back in the classroom and learning again.

Figure 1.6: Share of Countries with School Reopening by Region



Source: Own elaboration, data from UNESCO (June 6, 2020).

Between April and May 2020, UNICEF (2020b) gathered countries' plans to reopen schools safely. In Africa and the Middle East, out of 58 countries analyzed, 44 planned to provide WASH[9] kits when schools reopened. However, only 31 countries planned to monitor re-enrollment and outreach to children who did not return to school (see Exhibit 15). In Asia and Eastern Europe, out of 36 countries under analysis, 21 planned to provide WASH kits, 18 informed they were going to monitor re-enrollment, and 14 planned outreach to children who did not return to school (see Exhibit 16). In Latin America and the Caribbean, among 22 countries analyzed, nine planned to provide WASH kits and six to outreach to children who did not return to school (see Exhibit 17). Beyond ensuring schools reopen safely, in LMICs, reopening needed to be preceded by campaigns that promoted re-enrollment; thus, countries focused their attention on reducing the risk of student dropouts through clear communication campaigns and gave special focus to girls and students from marginalized communities (World Bank 2020a).

Some countries in the regions under analysis started either fully reopening school systems or doing pilot projects to reopen (see figure 1.6). As of June 2020, 12 countries in Africa and the Middle East reopened schools, six did so in Asia and Eastern Europe, and three in Latin America and the Caribbean (UNESCO 2020b). For example, after a two-month shutdown, Côte d'Ivoire's Ministry of Education started reopening schools in certain areas, following extra hygiene measures (Prentice 2020). In the LAC region, Uruguay was the first country to start school reopenings, even though every child had access to a computer, a situation that allowed more than 75 percent of students and 84 percent of teachers to connect to the learning platform during the pandemic (Perez 2020). In Asia, Lao Peoples Democratic Republic reopened schools for grades 9 to 12 in May and prepared a full school system reopening for June 2020 (Karki 2020).

However, reopening schools was not an easy process. Some parents were fearful of sending their children to school if precautions to prevent the transmission of COVID-19 were not taken carefully. Therefore, consultations with parents and members of the education community were necessary to better understand their main concerns and address them in the best possible way (Giannini, Jenkins, and Saavedra 2020). For example, Peru's Ministry of Education Monitoring & Evaluation Unit surveyed more than 10,000 families across the country during May 2020 and found that almost 70 percent would not be willing to send their children to schools if they reopened between July and August 2020 (see examples in table 1.5)—the main reason was that children might be at risk of contracting the COVID-19 virus (MINEDU 2020). Even though countries that, as of May 2020, reopened schools after passing the peak of the pandemic showed no instant spike in new COVID-19 cases (Crawfurd et al. 2020), parents concerns needed to be tackled. On the one hand, governments can provide guidance on how to keep children safe when they return to school;

[9] WASH is the term for water, sanitation, and hygiene. Due to their interdependence, these core issues are grouped.

the framework for reopening schools elaborated by UNESCO, UNICEF, the World Food Programme and the World Bank (2020) can serve as a useful tool to provide such guidance. On the other hand, schools had to demonstrate their capacity to mitigate risks of infection transmission and promote healthy behaviors through a clear communication strategy (Giannini, Jenkins, and Saavedra 2020). Outdoor learning was an alternative for students who lacked access to devices and reliable broadband, and who lived in home environments that were not appropriate for remote learning. According to the COVID-19 Outdoor Learning Initiative, in outdoor spaces, the risk of virus transmission was 20 times lower than indoor spaces. Moreover, outdoor learning was critical to students' intellectual, physical, and mental well-being (Cowe et al. 2021).

Table 1.5: Consultation with Parents about School Reopenings

Country	Description
Peru (national survey)	Phone calls to parents to understand the willingness to send children to school.
India (state consultation)	Karnataka to consult parents on school reopening between June 10–12, 2020.

Source: Own elaboration with data from secondary sources obtained from the following links Peru, India.

As schools proved their spaces had all the requirements needed to reduce the risk of COVID-19 transmission, and parents gained confidence that it was safe to send their children to school, principals and teachers assessed students' learning levels and plan for recovery. While some education systems were already implementing remote evaluation systems, most had plans to conduct diagnostic evaluations as schools started to reopen (see examples in table 1.6). For example, Nagaland, a state in India, developed an online student evaluation portal that could be accessed through any device and worked efficiently even in 2G internet connections (Gogoi 2020). In Egypt, high school students took computer-based formative tests from home using supplied tablets, as a rehearsal for the year-end exam (World Bank 2020e). In Indonesia, the ministry's digital learning platform aligned practice assessment tools to the curriculum (World Bank 2020e). In Brazil, several state education secretaries with the support of a center evaluation of education (CAEd), planned to conduct diagnostic assessments to all students as schools reopen. By assessing overall learning loss, education systems could develop and execute remedial education programs in order to prevent an exacerbation of the achievement gap (World Bank 2020a). Brazil's "Acelera" is a remedial education program that identifies students from disadvantaged backgrounds who have been lagging and supports them to gain the basic skills to pass the grade. Lessons from programs such as "Acelera" can be used to support students who have suffered the most as a result of school closures (Senna 2000).

Table 1.6: Projects and Plans to Assess Learning Levels

Country/State	Description
Nagaland, India	Online student evaluation portal; results will be used for remedial programs.
Indonesia	Digital platform with practice assessment tools aligned to the curriculum.
Maranhao, Brazil	Diagnostic evaluation will be conducted once schools reopen in the state.

Source: Own elaboration with data from secondary sources obtained from the following links India, Indonesia and Brazil.

LESSONS TO BUILD BACK BETTER

Coping and managing continuity policies are not enough. Education systems have to develop policies for improvement and acceleration of learning. Ministries, local authorities, principals, and teachers should seize the opportunity provided by COVID-19's emergency response to build stronger educational systems (World Bank 2020a).

A key priority is to improve and scale educational initiatives that proved to be effective and integrate them into the regular education system to ensure they are maintained over time (World Bank 2020a). Policy makers can use this time to analyze programs that were effective prior to or during COVID-19. For example, Kenya's Tusome early grade reading activity program has been operating since 2014 by providing training and coaching to teachers, literacy textbooks to each student, and structured teacher guides to help execute lessons that were aligned to students' textbooks (Wilichowski et al. 2020). The program proved to be successful to improve learning outcomes and was scaled to reach 7 million children across Kenya (RTI International 2020). Thus, the COVID-19 pandemic presented an opportunity for LMICs to learn from programs such as Tusome when education policy makers redesigned their strategies for learning recovery as schools reopened (Wilichowski et al. 2020).

At the same time, it is crucial to learn from practices that did not work to either adapt them or avoid replicating mistakes of the past. For example, in Peru, the well-intentioned teacher support system designed by the Ministry of Education as part of the COVID-19 education response ended up generating burnout. When Peru started implementing "Aprendo en Casa", a multimodal remote learning strategy, teachers received guidelines that stressed the importance of observing learning sessions through the channel of their preference, communicating with students and their families, and subscribing to massive online learning courses through the national website for teacher training, among other activities (Peru21, 2020). In addition to these guidelines, Regional Directions of Education and Local Education Units designed complementary guidelines to what the Ministry of Education had already developed. For instance, in the region of Lambayeque, local education units requested teachers complete daily reports of the work they were doing with students (Diario Correo 2020). This support system generated teacher burnout and discontent. After listening to teachers' feedback, Peru's Ministry of Education published a new resolution to align guidelines by these three institutions and reduced teachers' administrative workload. Peru's government was open to receiving feedback and adapted quickly by redesigning the support system that was provided for teachers.

Care must be taken that administrative requirements of teachers, such as daily filling of reports, do not hinder their ability to be pedagogically effective. Equally important, education policy makers should

consider how the COVID-19 pandemic can be used as an opportunity to improve teachers' pedagogical and digital skills before they return to schools (Wilichowski and Cobo 2020). Teachers' ability to instruct remotely requires a combination of digital and pedagogical skills, and, as return to schools will occur gradually, teachers have to learn how to combine multiple modes of delivery, such as online, offline, and blended modes, to effectively facilitate learning in these new scenarios (Wilichowski and Cobo 2020). Furthermore, many countries have designed multimodal remote learning programs to be sustainable over time, as a complementary resource for on-site classroom-based education; thus, teachers' ability to combine digital and pedagogical skills will be useful to build back better educational systems (Ministère de l'Éducation Nationale et de la Jeunesse, 2020). School systems can learn from other countries that have developed teacher training programs and virtual support systems to follow up with teachers in the process of improving their digital pedagogical competencies (see examples in table 1.7).

Table 1.7: Supporting Teachers in the COVID-19 Pandemic and Beyond

Initiative	Description
Lebanon Teacher Training	Virtual teacher coaching and training in Microsoft Teams.
Education Development Center	Interactive toolkit for radio instruction during an emergency crisis.

Source: Own elaboration with data from secondary sources obtained from the following links Lebanon and Education Development Center.

INITIAL POLICY TAKEAWAYS: EDUCATION EMERGENCY RESPONSES TO COVID-19 IN LMICS

Several LMICs responded quickly to the COVID-19 pandemic with remote learning strategies to mitigate learning losses. Generally, there was an alignment between the guidelines for coping policies provided by ministries of education and the implementation of such policies within countries, but the ways in which those policies were executed varied across countries. While most countries designed and implemented multimodal learning solutions as an emergency response aimed at reaching all students, the types of systems used varied across regions. TV, online platforms, and mobile applications were the most used channels in Asia and Eastern Europe, but radio programs were less prevalent in Central Asia and Eastern Europe in comparison to Africa and the Middle East, and Latin America and the Caribbean. More specifically, as of May 2020, while only 21 percent of countries in Central Asia and Eastern Europe implemented radio learning programs, 70 percent of countries in Latin America and the Caribbean did so.

Governments and third-sector organizations implemented support systems and emergency training programs for teachers to help them adapt to this new normal. Costa Rica created a digital toolbox to support teachers with pedagogical resources, such as a guide for autonomous work and a content repository made especially for teachers. Uruguay leveraged a Learning Management System that the country had in place prior to COVID-19 to allow teachers to monitor students, as well as a content repository in which teachers could find high-quality educational content for their lesson plans. Nova

Escola, a nonprofit organization in Brazil, partnered with Facebook to train more than 2 million teachers in digital and pedagogical skills through short practical courses aligned to Brazil's National Curriculum and provided certificates to teachers who complete them. The Varkey Foundation created "Comunidad Atenea," an online community of practice that allowed teachers in Latin America and the Caribbean to share educational resources. However, to ensure effectiveness, governments needed to transition from emergency teacher training initiatives to sustained professional development and remote coaching programs to equip teachers with the tools needed for remote teaching (Instituto Peninsula, 2020).

Less alignment was found between the guidance and implementation of managing continuity policies to ensure schools reopen safely. Reopening schools was not an easy process; it required thoughtful planning to ensure schools were safe for re-enrollment, assessing learning levels, and organizing learning recovery. Across all three regions under analysis, the majority of countries started planning how to reopen schools safely through communication campaigns and the provision of WASH kits; however, as of May 2020, less than half of the countries planned to monitor re-enrollment and outreach to children who did not return to school. Reopening needed to be complemented with clear communication campaigns that promoted re-enrollment to reduce the risk of student dropout and gave special focus to girls and students from marginalized communities. Moreover, while some countries such as Brazil and Egypt demonstrated progress to conduct diagnostic evaluations as schools reopened, as of May 2020, this report did not find similar plans across all countries under analysis. Focusing on formative assessments was critical to help teachers shape lessons to address gaps in student knowledge, as well as to help students understand where they were in relation to curriculum goals and what they needed to learn. To achieve these goals, teachers needed to adequately align formative assessments with specific learning objectives in the curriculum and units of study. Equally important, large-scale summative assessments were critical to generate data about student learning, understand learning gains or losses during the remote learning period, and provide information for the national government decision-making process. Policy makers needed to ensure that summative assessments were designed considering students' local culture, religions, and the specific situations they faced during the pandemic (Gacicio et al. 2020).

To build back better education systems, it is key to learn from education initiatives implemented either prior or during the COVID-19 pandemic and scale those that have proven to be effective. In fact, beyond the emergency responses, countries have strengthened remote learning practices that worked prior to COVID-19, as well as learned from those practices that did not work to avoid replicating mistakes of the past. Governments such as Zambia and Sierra Leone responded to COVID-19 rapidly by leveraging existing remote learning solutions rather than developing new programs. Countries also needed to take the opportunity to adapt in-person learning that proved effective to this new remote learning scenario. Kenya's Tusome early grade reading activity program was highly effective at providing training and coaching to teachers and literacy textbooks to improve student learning; such programs need to be adapted to a distance learning setting instead of being stopped. Other countries that had less experience with the implementation of remote learning programs were agile and responded to feedback in the process of planning and executing remote education during the pandemic. For example, when Peru's well-intentioned teacher support system ended up generating burnout; the system was quickly redesigned to solve the problem.

Most of what was described in this compendium addressed the emergency plans and actions implemented by different low- and middle-income countries, as well as the channels deployed by education systems to support remote learning. However, the current challenge is to understand the effectiveness of those actions in regard to coverage, engagement, and learning outcomes. The following section of this report provides an in-depth multicountry analysis on the perceived effectiveness of distance learning programs in five selected countries: Brazil, Kenya, Nigeria, Peru, and Sierra Leone.

CHAPTER 2

IS REMOTE LEARNING PERCEIVED AS EFFECTIVE? AN IN-DEPTH ANALYSIS ACROSS 5 COUNTRIES

Annie Spratt

II. IS REMOTE LEARNING PERCEIVED AS EFFECTIVE? AN IN-DEPTH ANALYSIS ACROSS 5 COUNTRIES*

According to UNESCO's Institute for Statistics data, as of June 2020, countrywide closures affected over 100 million students across Brazil, Kenya, Nigeria, Peru, and Sierra Leone (see Exhibit 18). Even though schools were closed, governments in these countries designed and implemented remote learning solutions during the COVID-19 pandemic. This study has synthesized the main education emergency actions deployed by the selected countries and the perceived effectiveness of these strategies.

As did many countries around the world, governments of Brazil, Kenya, Nigeria, Peru, and Sierra Leone reacted quickly to mitigate shocks to their education systems; this report analyzes the perceived effectiveness of these governments' education responses considering the five main themes of this study: (1) delivery systems; (2) curriculum adjustments; (3) teacher support, (4) monitoring and evaluation; and (5) remedial programs (see table 2.1 for further information).

Table 2.1: Perceived Effectiveness of Remote Learning in Five Main Themes

Delivery systems	Curriculum adjustments	Teacher support	Monitoring and evaluation	Remedial programs
Multimodal delivery systems have been effective to increase coverage if the program is complemented with a communication strategy, teacher-student interaction, and inclusive content	Prioritization of curriculum and content curation has made the development process of the remote learning strategy more effective	Sustained professional development courses or remote coaching programs to strengthen teachers' pedagogical and digital skills	Most countries have monitored coverage, but need to track dimensions such as engagement, frequency of use, and learning progress	Note: At the time this section of the study was conducted, no data on remedial programs were gathered
Brazil (São Paulo) Remote learning program complemented with a media campaign to keep teachers informed about learning activities, a task force that contacted families, and a mobile application for teacher-student interaction	**Sierra Leone** Prioritized subjects by systematically analyzing those in which students were not performing: English, mathematics, and science. Also, learning sessions were grouped by multigrades	**Nigeria (Edo)** Trained all 11,000 primary school teachers who were part of the Edo-BEST program to equip them with the tools to use digital technologies for teaching. An existing coaching program for teachers was adapted to be delivered remotely	**Peru** The monitoring and evaluation unit regularly supervised the adoption and effectiveness of the remote learning program with principals, teachers, and parents through phone calls once a month	

Source: Own elaboration with data from interviews with policymakers and education experts from the selected countries.

* This disclaimer informs readers that the opinions expressed in the text belong to the author, and not necessarily to the World Bank. The information contained in this document was collected between May and July, 2020, and given the space and time constraints, it does not guarantee completeness of the education systems of selected countries and their response to COVID-19.

While evaluating the effectiveness of the design and delivery of distance learning programs in the five selected countries, this report has focused on efforts being made to diminish learning loss as well as to monitor and evaluate distance learning. This approach was important because most researchers analyzed how policy makers designed and implemented content, technology, channels to deliver learning, and pedagogical support; however, less attention was given to monitor distance learning processes, track the access to courses and engagement, and assess the quality of the remote learning experience. By studying the perceived effectiveness of remote learning initiatives implemented in Brazil, Kenya, Nigeria, Peru, and Sierra Leone, this report addressed the following hypotheses:

1. Coherent multichannel strategies (where television, radio, the internet, and/or mobile phones were used together) were more effective than just using a single technology for providing remote learning.
2. Curriculum prioritization and selection of contents (e.g., core subjects, multi-grade content) helped to make the remote learning strategy more effective.
3. Interactive educational platforms were more effective than traditional one-way education, low-tech methods, such as delivering printed material, or broadcast of radio or television.
4. Replicating the face-to-face teaching–learning practices into a remote learning environment (e.g., traditional lecturing, boardwork) did not necessarily increase student engagement.
5. Emergency training or "crash courses" for teachers to quickly understand how to use remote learning tools was not necessarily effective to improve the learning experience.
6. Guidelines for teachers during the remote education process clarified their "enhanced role." Excessive administrative workload generated burnout and reduced pedagogical effectiveness.
7. Monitoring and evaluation systems provided critical information to effectively adjust remote learning programs to students and teachers' specific needs, especially when countries had already developed and consolidated institutional capacities in this field.

EDUCATION SYSTEMS AND THE RESPONSE TO COVID-19

Specific characteristics of education systems influenced the response of governments to COVID-19. Countries that leveraged those characteristics were effective at planning and executing a remote learning program. This section discusses to what extent dimensions such as the degree of decentralization of the education system, the role of the private sector, and the previous experience with remote learning influenced the education response to COVID-19 (see Exhibit 19).

The degree of decentralization influenced educational systems in different ways during the COVID-19 pandemic. Taking into account the decentralized nature of the education system, local authorities had the autonomy to regulate and manage educational services within their region. During the pandemic, these authorities responded in different ways. According to the Center of Innovation for Education in Brazil (CIEB—Portuguese acronym), by May 2020, while only 60 percent of municipal education secretaries had implemented remote learning programs, 85 percent of state education secretaries had done so. The five state education secretaries selected for this study (Amazonas, Espirito Santo, Mato Grosso do Sul, Minas Gerais, and São Paulo) also responded with different strategies. For example, Amazonas leveraged an existing media center that delivered content through satellite TV to reach rural communities since 2007. During the COVID-19 pandemic, this program was adapted in less than a week and began delivering three hours of content per education level through three different TV channels. In contrast, São Paulo announced school closures on March 13, 2020, and anticipated holidays

for teachers and students for two weeks. The state education secretary took advantage of this time to plan a remote learning strategy and built a media center from scratch.[10] The decentralization and the emergency context also fostered collaboration among state education secretaries. For example, Espirito Santo partnered with Amazonas to access and curate its content repository of TV learning sessions. In Peru, while the education system was also decentralized, the Ministry of Education still played an active role in the execution and management of major educational programs. During the COVID-19 pandemic, Aprendo en Casa (AeC), the country's multimodal remote learning program, was planned and implemented by the Ministry of Education in less than two weeks. Thus, depending on the degree of decentralization, countries responded differently to the pandemic.

The private sector and third-sector organizations also shaped the responses of education systems to COVID-19. In Nigeria, the state of Edo launched Edo-BEST@Home, an extension of the Edo Basic Education Sector Transformation (Edo-BEST) program, a public-private partnership (PPP) between the Edo's State Universal Basic Education Board (SUBEB), the World Bank, and Bridge International Academies (2019). While Edo's government had the lead role in the initiative, Bridge's role was critical to adapt the technology needed for remote learning, and the World Bank provided technical assistance and results-based financial resources. Edo's education system quickly pivoted toward remote learning because the government had been building its technical capacity with the support of private partners. In Brazil, major educational foundations funded by business leaders collaborated with the government to monitor remote learning, train teachers, and curate content. For example, since March 2020, CIEB conducted surveys to understand the reach and implementation of remote education initiatives of state and municipal secretaries. CIEB also curated a list of EdTech resources and provided suggestions for implementing remote learning strategies. Instituto Peninsula, an educational nonprofit, conducted national surveys to explore teachers' perceptions, roles, and challenges during the COVID-19 pandemic. Fundaçao Lemann, a foundation with a focus on education, conducted a study to understand how students were accessing remote learning and what difficulties they were facing in the process. Governments such as the State Secretary of São Paulo also publicly requested support from private organizations to find partners for content creation and delivery, as well as to zero-rate its mobile application. Thus, while the private sector proactively supported governments to leverage existing private resources, governments also proactively enlisted support from the private sector to strengthen national remote learning strategies and equitably increase coverage.

The previous experiences with remote education allowed countries and states to better adapt and scale up their already existing distance learning programs to all students. In Sierra Leone, the Teaching Service Commission (TSC) had a critical role in the execution of the remote learning programs during the Ebola crisis, as well during the COVID-19 pandemic. As the country had a low penetration of internet and TV, the government focused on radio and printed material, and offered digital learning resources as a complement. Reviews conducted after the Ebola crisis in West Africa showed no evidence that online education supported at-home learning, as several EdTech initiatives implemented during emergency settings were designed without taking into consideration research evidence. In contrast, radio learning programs implemented in West Africa during Ebola reached 1 million students, that is, 20 percent of children out of school. Thus, Sierra Leone's government officials prioritized leveraging the existing radio learning program and relaunched it on April 6, 2020, within less than one week of school closures. In Kenya, the government also had previous experiences with remote learning programs through three main channels: radio,

[10] São Paulo's Secretary of Education, Mr. Rossieli Soares, is the former Secretary of Education of Amazonas, a founding member of Amazona's Media Center, and former Minister of Education of Brazil. These experiences were critical to build a media center in São Paulo.

TV, and online. Since 1963, the government and Kenya's Broadcasting Corporation had been delivering radio learning programs. As part of the COVID-19 education response, this partnership was strengthened, and the radio program was carried by 3 national stations and 42 community radio stations to reach students in remote areas. The TV learning program existed since 2010 and during COVID-19, Kenya's EDU TV Channel was carried for free by all signal providers so that families that had a TV did not have to pay to watch this channel. The Kenya Education Cloud (KEC), also functional since pre-COVID-19, is a user-friendly platform, that is device neutral, Web Light, and elastic so that it can support an unlimited number of users at the same time. Thus, Sierra Leone's and Kenya's education systems quickly adapted to remote education because the governments had been building their distance learning programs for several years.

CHANNELS AND CONTENT FOR AN EFFECTIVE REMOTE LEARNING STRATEGY

Most of the selected countries for this study designed and implemented multichannel strategies (see Exhibit 20). This study hypothesized that multimodal strategies that coherently combined different delivery systems for remote learning—television, radio, the internet, and/or mobile phones—were more effective than just using a single technology for providing remote learning. However, there are additional nuances that need to be considered to determine the effectiveness of coherent multichannel strategies. Concerning content, this study postulated that the prioritization of the curriculum and the selection of contents to focus on foundational knowledge and multi-grade content helped to make the remote learning strategy more effective. Both hypotheses are discussed below.

PERCEIVED EFFECTIVENESS OF COHERENT MULTICHANNEL STRATEGIES

Multimodal strategies that coherently articulate the different channels to deliver remote learning were effective to facilitate teacher-student feedback and formative assessments if contents were aligned to the curriculum and learning sessions were taught consistently across all channels. For example, the State Education Secretary of Mato Grosso do Sul in Brazil identified that teachers were overwhelmed by providing differentiated feedback to students who accessed learning through different channels, as lesson contents delivered through printed material, online mediums, and television were not necessarily aligned. Teachers in Peru faced a similar challenge, and the Ministry of Education responded by prioritizing the curriculum for remote learning and planning all competencies and contents that needed to be covered until the end of the school year. Since May 2020, contents covered in learning sessions were aligned across channels as well as to the competences of the prioritized curriculum. To achieve that, it was key to foster collaboration between the radio, TV, and web pedagogical teams of AeC's remote learning programs. In other education systems, this concern was less prevalent. In Kenya, learning sessions and contents delivered through the different remote learning channels were developed inhouse by the Kenya Institute for Curriculum Development (KICD), an institution that is responsible for developing the curriculum and support materials for basic and tertiary education and ensuring alignment of content across channels. In Sierra Leone and Edo, as remote learning was delivered through a unimodal strategy, teachers did not face the challenge of providing differentiated feedback based on each channel; instead, they used the content provided through the main public channels (radio in Sierra Leone and mobile phones in Edo) to provide feedback to students.

Multimodal strategies were also effective to increase reach both in urban and rural areas if the program was complemented with a clear communication strategy, teacher-student interaction, and content for students with special needs. While Kenya developed a coherent multimodal strategy, the government faced the challenge to increase usage across all channels and foster teacher-student interaction. According to a survey conducted by Kenya's National Bureau of Statistics, as of May 2020, approximately 25 percent of households were not using any method to learn at home, and according to Uwezo's report, only 22 percent of school-going children were accessing remote learning through radio, TV, and/or online. In the state of São Paulo in Brazil, the multichannel remote learning program was complemented with a communication strategy that included a proactive campaign on TV and social media to keep teachers and families informed about learning activities; a task force that contacted families of students who were out of reach either through phone calls or home visits; a mobile application that allowed teacher-student interaction; and daily "live" conversations between the State Education Secretary and teachers. In Peru, as access to devices needed for remote learning varied across the country (see Exhibit 21), AeC's multimodal remote learning strategy considered delivering content through TV, radio, online, and printed materials to reach over 85 percent of the student population. This strategy was complemented with constant communication of weekly schedules for learning sessions. For example, for the week of June 15–19, 2020, schedules were available in AeC's main website, social media, newspapers, TV and radio. Moreover, caregivers and students had received constant support from teachers, mainly through WhatsApp. Peru's multimodal and inclusive strategy had also been effective to target a diverse student population: since May 2020, all TV learning sessions were supported with sign language, but as the access to TV airtime was limited, the website was also adapted for students with special needs and adult alternative education. Radio learning sessions included programs for students with special needs and adult alternative education, and content was available in nine native languages for students of remote communities.

PERCEIVED EFFECTIVENESS OF CURRICULUM AND CONTENT PRIORITIZATION

The prioritization of curriculum and content curation made the development process of the remote learning strategy more effective; however, further evaluation of the impact of an accelerated curriculum on student learning will be necessary. Especially for countries that experienced remote learning at scale for the first time, lacked a vast repository of content to deliver remote learning, and/or had limited airtime in TV or radio, prioritization was not only more effective, but necessary. In Peru, all learning sessions delivered through radio and television in preprimary and primary schools were clustered by multigrades, grouping two consecutive years; though, in secondary school, each grade had its own learning session. Sierra Leone was experienced in establishing an accelerated curriculum that was developed with the support of the International Rescue Committee during the Ebola crisis. During COVID-19, the Teaching Service Commission prioritized the subjects to be aired by systematically analyzing those in which students were not performing: English, mathematics, and science. Also, learning sessions were grouped by multigrades: grades 1–3, 4–6, Junior Secondary Education, and Senior Secondary Education. Equally important, for education systems experiencing remote learning at scale for the first time during COVID-19, it was faster and less cost-intensive to curate content instead of creating all of it from scratch. For example, Peru curated external content that third-party organizations such as Plaza Sesamo (Mexico) and Paka Paka (Argentina) agreed to share for free with AeC and already incorporated that content into learning sessions for preprimary and primary school. Peru's Ministry of Education also partnered with Mexico's Secretary of Public Education (2020) to access its TV learning content.

Education systems that had a vast portfolio of learning resources that had been built for several years did not face the same need to prioritize subjects, curriculums, or contents. For example, the state of Amazonas in Brazil already had an

inventory of existing content, with more than 20,000 videos, that had been produced since 2007 for all subjects and grades. The content can be accessed through three TV channels and was also available through its Media Center. Similarly, Kenya already had a vast repository of TV content and radio learning sessions for most subjects and grades, so KICD did not face the need to prioritize the curriculum during COVID-19. The state of Edo in Nigeria developed a blended method for content simplification: while audio learning guides were clustered by multigrades, self-study activity packets differentiated material for each grade to support students studying at home to practice and learn core concepts from the Nigerian syllabus. While these education systems did not make profound adjustments to the curriculum or subjects, it remained a challenge to better understand whether teachers, in this new scenario of remote education, were able to cover all contents and competences in the same time frame they taught prior to COVID-19.

CREATING AN EFFECTIVE REMOTE LEARNING EXPERIENCE

Even though ensuring coherence across channels and developing an accelerated curriculum (for countries that need to) are critical steps, additional factors are needed to create an effective remote learning experience. This study initially assumed that interactive educational platforms were more effective than one-way education methods such as delivering printed materials, broadcast on radio or television. Nevertheless, digital interactive platforms in contexts with poor connectivity faced the challenge of reaching a lesser number of students. Moreover, replicating face-to-face teaching–learning practices, such as traditional lecturing and boardwork, into a one-way remote learning environment did not increase student engagement; adjustments were needed to make one-way remote education methods more interactive. These two dimensions are discussed below.

PERCEIVED EFFECTIVENESS OF DIGITAL-INTERACTIVE EDUCATIONAL PLATFORMS

In some of the selected countries for this study, interactive platforms had been effective to increase engagement; but it was challenging to increase the reach when infrastructure and/or connectivity was poor, as well as when students lacked digital skills or teacher support. In Peru, according to a survey conducted in May 2020 by the Monitoring & Evaluation Unit of the Ministry of Education, students' satisfaction with the learning experience of AeC's website was 5 percentage points more than that of TV learning programs and 23 percentage points more than the satisfaction with the learning experience of radio education programs. However, AeC's TV learning sessions were used twice as much as AeC's website. Through a partnership with Peru's Ministry of Education, Khan Academy's total learning time in the platform and monthly active users, key indicators for engagement with the learning experience, increased approximately 50 percent, when compared with figures prior to the pandemic. The number of users registered in the platform more than doubled during the COVID-19 pandemic, from 325,000 to 652,000; however, that is still only 8 percent of Peru's student population. In Brazil, according to a survey conducted by Fundaçao Lemman, students that accessed remote education through TV or online were more engaged, as they dedicated more time doing learning activities than students who just use printed material; but still reach was limited because, according to UNICEF's Project Connect, only 40,000 schools in Brazil reported being connected to the internet (out of 141,000 schools in the country). In the state of Edo in Nigeria, prior to COVID-19, all 270,000 primary school students of the Edo-BEST system had

already experienced a technology-based education model, showing high engagement with this model. Yet, during COVID-19, the Edo-BEST@Home remote learning program had only reached 29 percent of Edo's primary school population through its interactive mobile-based program. Thus, as the selected countries for this study had relatively low internet penetration, and not every student could access interactive learning platforms, it was also critical to analyze the learning experience with alternative methods.

LEARNING EXPERIENCE WITH ONE-WAY EDUCATIONAL METHODS

In most of the selected countries for this study, one-way, low-tech education methods effectively increased reach in areas with low connectivity, but it was a challenge to track engagement during the learning experience. When policy decision makers and school leaders plan to implement low-tech methods for education, they should focus their efforts on reaching out to students and better understanding their needs to inform decisions about logistics, budgets, staffing, and outcomes (see Checklist for Overcoming Digital Barriers to Inclusion in Exhibit 22). In the state of Minas Gerais in Brazil, 97 percent of the student population downloaded or received the guidelines for remote learning and printed material to complement the TV learning programs. In Peru, according to a survey conducted in May 2020 by the Monitoring & Evaluation Unit of the Ministry of Education, in rural areas, one-way education methods such as TV and radio were used by over 70 percent of students who accessed remote learning, as compared to 55 percent in urban areas. In Kenya, according to a survey conducted in early May 2020 by the National Bureau of Statistics, among students accessing remote learning, one-way education methods were the most popular devices for studying at home: 19 percent used TV educational programs, 15 percent the radio, and 12 percent printed material. Even though some governments made efforts to track satisfaction with one-way education methods through surveys, it remained a challenge to understand engagement and time spent learning through these channels. That said, governments made important efforts to make one-way education methods more interactive, instead of just replicating the traditional face-to-face instruction methods.

Because in a remote education environment, one-way education methods and face-to-face practices have not necessarily increased student engagement, adjustments are needed to make one-way remote learning methods more interactive and engaging. In the execution phase of low-tech education methods, implementation teams should regularly check in with students and teachers and adjust how learning materials, tasks, and technologies are used to ensure effectiveness. As Sierra Leone's main remote education channel is the national radio learning program, Teaching Service Commission officials have been working to increase engagement and interaction of students with this one-way, low-tech educational program. At the end of each radio learning segment, a "live" phone line is open to allow children to call in with questions, and all calls to the radio program are toll-free. In Peru, instead of just displaying a teacher lecturing content remotely, every TV learning session has incorporated three key actors: first, a facilitator who is usually an actor or actress who has the role of introducing the session and facilitating learning; second, an expert teacher who explains the main concepts; and third, a student who is filmed performing learning activities. The learning facilitator, teacher, and student hold discussions throughout the session, making the class more engaging. After the TV learning session, students can contact teachers in case they have questions or need explanations. The State of Minas Gerais in Brazil developed "Conexao Escola", a mobile application to encourage teacher-student interaction for a limited amount of time after each TV learning class. While some countries like Peru have tried to make lessons more engaging and not just teachers lecturing students, others have gone one step further and made it even more interactive by providing each student the opportunity to engage with the content they learned and interact with teachers and peers. As in other contexts, the case of Minas Gerais shows that either with one-way educational methods or digital platforms, the role of the teacher is critical to support students in the learning process.

PROVIDING AN EFFECTIVE TEACHER SUPPORT SYSTEM

Although it is critical to ensure multichannel coherence, a prioritized curriculum, and interactive remote education methods, the role of the teacher is still important for an effective learning experience. Regarding professional development, this study hypothesized that emergency training or "crash courses" for teachers to quickly understand how to use remote learning tools were not effective to improve the learning experience for students. Concerning teacher support, this study postulated that while guidelines for teachers during the remote education process helped to clarify their "enhanced role;" excessive administrative requests may generate burnout and reduce pedagogical effectiveness. These hypotheses are discussed below.

PROFESSIONAL DEVELOPMENT FOR TEACHERS DURING THE COVID-19 PANDEMIC

During the COVID-19 pandemic, several online rapid courses targeted to teachers were offered by either ministries of education, third-sector organizations, or private companies. Emergency training courses reached a considerable number of teachers; however, it remains unclear if these courses were effective to improve teachers' pedagogical and digital skills to impact student learning. In Brazil, the organization Nova Escola partnered with Facebook and created "Educação em Rede" to train over 2 million teachers in digital and pedagogical skills during the COVID-19 pandemic. These were all short practical courses aligned with Brazil's National Curriculum that provided certificates to teachers who completed them. As of June 2020, out of Brazil's 2.4 million teachers, 500,000 enrolled in Nova Escola's rapid courses and tools, and over 1 million downloaded lesson plans from a digital repository. Moreover, in the state of São Paulo, the Secretary of Education developed emergency courses to train teachers in the use of devices needed for remote learning. More than 150,000 teachers participated—that accounts for over 80 percent of teachers in the state.[11] In Kenya, almost 3,000 teachers were trained during the pandemic to use Microsoft Teams for their virtual classrooms, but it was still a challenge to reach a significant proportion of Kenya's 300,000 teachers. In Peru, the Ministry of Education launched an online course in early April 2020 through its digital platform PeruEduca to train 200,000 teachers[12] for their new role while teaching remotely. As the remote education process was new for the vast majority of teachers, governments and third-sector institutions made efforts to design and deliver emergency training courses for teachers. Nonetheless, as courses were in most cases optional, governments lacked information to understand their effectiveness.

Fewer governments in the selected countries for this study developed and sustained professional development courses or remote coaching programs to strengthen teachers' pedagogical and digital skills. Since 2018, the state of Edo in Nigeria trained all 11,000 primary school teachers who were part of the Edo-BEST program to equip them with the right tools to use digital technologies in the classroom; this sustained professional development program allowed teachers to better understand how to use technology for education, which was critical during the implementation of the Edo-BEST@Home remote learning program. Moreover, during the COVID-19 pandemic, the already existing coaching program for teachers was adapted to be delivered remotely. Learning and development supervisors and quality assurance officers provided pedagogical and technical coaching to teachers to ensure

[11] The State Secretary of São Paulo in Brazil manages one of the largest state education systems in the world, with over 3.7 million students and 190,000 teachers.

[12] According to the National Institute for Statistics and Information, Peru has over 520,000 teachers; 67 percent of them work in public schools and 33 percent in private schools.

proper learning facilitation of virtual classrooms. Therefore, sustained pedagogical and technical support through virtual coaching to teachers were good practices that could be adapted to help teachers during the remote teaching–learning process

GUIDANCE FOR AND ROLE OF TEACHERS DURING THE COVID-19 PANDEMIC

This study considers that guidelines for remote education helped to clarify the "enhanced role" of teachers, but an excessive administrative workload generated burnout and reduced pedagogical effectiveness. The five selected countries for this study developed and communicated general guidelines for teachers on how to support students during school closures, as well as how to report and keep track of learning (see table 2.2). While some countries such as Kenya and Sierra Leone chose to keep the implementation of those guidelines optional to teachers' discretion, other education systems enforced and monitored those requirements. In Peru, the Ministry of Education developed and communicated general guidelines for teachers that stressed the importance of observing learning sessions through the channel of their preference, and communicating with students and their families, among other activities. In addition to these recommendations, local education units designed complementary guidelines. For instance, in the region of Lambayeque in Peru, teachers were required to complete daily reports of their work, with a detailed explanation of learning activities completed and progress achieved by each student. In Brazil, the state education secretaries of Minas Gerais, São Paulo, and Mato Grosso do Sul received reports that teachers were overwhelmed, not only by the amount of administrative reporting that they were required to complete but also because of the frequent communication and requests received from parents and students. Thus, Peru and Brazil's well-intentioned support systems generated unintended consequences, such as teacher burnout. In fact, according to Peru's Ministry of Education M&E unit survey, in April 2020, almost 40 percent of teachers said that they were performing a very hard job. In Brazil, according to a survey conducted by Instituto Peninsula, 83 percent of teachers did not consider themselves prepared to teach remotely, 67 percent were anxious, 38 percent felt tired, while less than 10 percent were happy or satisfied.

Both Peru and Brazil's systems were open to receiving feedback and adapted quickly by redesigning the support system that was provided for teachers. After listening to teachers' feedback, Peru's Ministry of Education published a new resolution that aligned guidelines and reduced teachers' administrative workload. São Paulo and Mato Grosso do Sul responded by reducing teachers' administrative workload and reporting. Also, Minas Gerais and Sao Paulo developed mobile applications to encourage teacher-student interaction for a limited amount of time after each class, which streamlined teacher-student contact via the mobile application to specific time periods and helped reduce teacher burnout. The heads of São Paulo and Espirito Santo's secretaries also had informal conversations with teachers through "lives" to solve doubts and receive feedback: Mr. Rossieli Soares, Education Secretary of São Paulo, lead frequent two-hour conversations with approximately 25,000 teachers through the mobile application developed by the state and Mr. Vitor De Angelo, Education Secretary of Espirito Santo, had conversations with teachers through "lives" in social media platforms. These conversations allowed the secretaries to have an open and horizontal communication with teachers to better understand their concerns and adjust remote learning programs (Dellagnelo and Reimers, 2020).

Table 2.2: Supporting Teachers in the COVID-19 Pandemic

Country	Description	Type of support
Brazil (Minas Gerais)	States provided guidelines stressing the importance of keeping contact with students. Minas Gerais developed support tools such as a mobile app for teacher-student interaction for a limited amount of time after each class.	
Kenya	Guidelines provided but teachers were not required to follow up with students. Training on the use of tools for virtual classrooms only reached 3,000 teachers.	
Nigeria (Edo)	A virtual helpdesk was set up to allow teachers to ask questions or request support. An existing coaching program for teachers was adapted to be delivered remotely.	
Peru	Teachers received guidelines that stressed the importance of observing learning sessions, communicating with students and parents, and providing feedback.	
Sierra Leone	A radio teaching program targeted teachers who needed to improve practice in digital literacy. When schools were reopened, teachers used the radio program to complement their lessons or adapt their methodology.	

Source: Own elaboration with data from interviews with policymakers and education experts from the selected countries.

Legend:

MONITORING AND EVALUATION

Education systems that designed and implemented a coherent multimodal strategy, an inventory of content for remote learning, an accelerated curriculum, interactive learning methods, and teacher support systems still had to understand if the whole remote education strategy was effective to reach all students, sustain learning engagement, and increase learning outcomes. This study postulates that education systems that implemented monitoring and evaluation processes to track the mentioned outcomes, as well as a feedback receptive culture, were effective at adjusting remote learning programs to students and teachers' specific needs. Through an analysis of inputs required for an effective remote learning program and outcomes achieved through the implementation of those inputs (see Exhibit 23), this study has explored the perceived effectiveness of distance learning programs in the five selected countries: Brazil, Kenya, Nigeria, Peru, and Sierra Leone.

In Brazil (see Exhibit 24), while some state education secretaries monitored the adoption of remote learning programs implemented during COVID-19, there was still much to be done in terms of evaluation to understand the effectiveness and outcomes of these programs. Third-sector organizations complemented the government's monitoring role and gathered data for policy decision-making. According to a study conducted during May 2020 by the Fundaçao Lemann (FL), remote learning programs in Brazil reached 74 percent of the student population, but access was unequal. While in the southern region 94 percent of students accessed remote learning resources, only 52 percent of students did so in the northwest region. Regarding engagement of those students who had access to remote education resources, on average 82 percent engaged with the majority of the learning activities sent by schools, and 13 percent engaged with part of them. Concerning the frequency of use, results varied by education level. While most students in primary school dedicated between one and two hours per day to study remotely, most students in middle school and high school studied between two and three hours per day. In relation to assessment, several states coordinated with CAEd, a center for public policy and evaluation of education, to conduct diagnostic evaluations once schools reopen.

In Kenya (see Exhibit 25), while the Ministry of Education and KICD have conducted rapid online surveys to understand the perceptions of the education community on the remote education program, the data were only referential. Similar to what occurred in Brazil, third-sector organizations and other governmental institutions complemented the government monitoring role. According to Uwezo's report conducted in May 2020, only 22 percent of school-going children in Kenya were accessing digital resources for remote learning. Of these children, 42 percent accessed through a TV learning program, 27 percent through WhatsApp, 19 percent through a radio learning program, and 10 percent downloaded materials from the Kenya Education Cloud. As in most countries, access to remote learning was unequal: students in private schools were twice as likely to access remote learning than students in public schools. According to a survey conducted by Kenya's National Bureau of Statistics, some of those students not accessing remote learning programs through digital or broadcast resources were studying with printed material or using other resources for homeschooling. However, about 25 percent of households were not using any method to learn at home. Regarding engagement, while one of the main objectives of Kenya's remote learning program was to make content more interactive to keep students engaged, the Ministry of Education still does not have enough information related to student engagement, satisfaction rates, and frequency of use of the remote education program. Concerning assessments, as teaching will start from where it stopped once schools reopen, the government has not yet planned to conduct evaluations (Kenya Institute for Curriculum Development, 2020).

In the state of Edo in Nigeria (see Exhibit 26),

Edo-BEST leveraged its already existing quality assurance team to monitor and evaluate the remote learning experience. Regarding coverage, as of mid-July 2020 the Edo's remote learning program reached 930 out of 1,000 primary schools in the state, and over 7,000 virtual classrooms out of 9,000 actual classrooms were created to deliver remote education. However, during the COVID-19 pandemic, only 29 percent of Edo's primary school population accessed the program's interactive mobile-based platform. Concerning engagement, Edo's quality assurance team tracked information such as frequency of use, engagement rates, parent support, and perceived effectiveness of teaching and learning in the virtual classroom through a comprehensive survey. In relation to assessments, the Edo-BEST@Home program developed mobile interactive quizzes that could be accessed at any time during the day. Quizzes usually had five multiple-choice questions and once a student answered them, they received automated feedback on the answer given. While the Edo-BEST team developed tools to monitor and evaluate reach, access, and engagement, as of July 2020 the government still did not have sufficient information related to the effectiveness of its remote learning program.

In Peru (see Exhibit 27), the Ministry of Education's Monitoring & Evaluation Unit regularly supervised the adoption and effectiveness of the remote learning program with principals, teachers, and parents through phone calls once a month. More than 50,000 members of the education system were surveyed between March and June of 2020. Regarding reach, over 85 percent of students accessed AeC's remote learning program. In April 2020, of those students who accessed AeC's remote learning resources, 74 percent did so through TV, 17 percent by radio, and 19 percent used the website. For students that could not access AeC's resources, local education units, in coordination with communities, developed different initiatives such as retransmitting radio content through powerful loudspeakers in community centers which children could attend while social distancing. Concerning engagement, in a survey conducted in May 2020, 82 percent of students said they were satisfied with the TV learning program, 64 percent with the radio program, and 87 percent with the website. In relation to assessment, while summative assessments were postponed, some teachers constantly provided formative assessments. According to the Ministry of Education's M&E unit survey, 80 percent of students and parents received support from teachers at least once in the previous week. In May 2020, 96 percent of teachers who contacted parents requested their students complete and send homework at least every other day. Students completed those activities and sent them back to teachers mainly through WhatsApp. Of those teachers who contacted parents and requested students to complete the learning activities, 90 percent graded students' homework or provided detailed feedback.

In Sierra Leone (see Exhibit 28), the Ministry of Education's remote learning program implemented during the Ebola pandemic provided lessons regarding what worked to reach a large number of students, while keeping them engaged and learning. As of July 2020, although the government was yet to track progress regarding coverage, engagement, and learning, the Ministry of Education's COVID-19 education emergency response plan clearly included a plan for review, assessment, and evaluation of the remote teaching and learning processes. During the Ebola crisis, access to the radio learning program was limited by poor radio signal coverage in rural areas and a lack of radio devices in poor households. Thus, during the COVID-19 pandemic, Sierra Leone's government partnered with local community radios and installed radio transmitters in remote communities to increase coverage. According to a survey conducted by Innovations for Poverty Action (IPA), while almost 80 percent of respondents reported that children in their households were spending time on education, the majority were using schoolbooks and less than 20 percent were accessing through radio programs. Regarding engagement, anecdotal evidence from studies conducted after the Ebola outbreak showed that radio programming helped students to maintain a link to education during the crisis because the program was taken seriously by both the government and families. During the COVID-19 pandemic, the Teaching Service Commission constantly worked to increase engagement and interaction of students with the

radio learning program.

In sum, most countries were able to assess the percentage of the student population being reached through remote education programs implemented during the COVID-19 pandemic. Coverage was just the first step of the set of outcomes that needed to be tracked to understand the effectiveness of remote learning programs. Governments needed to track other dimensions such as engagement, frequency of use, usefulness of the pedagogies adopted, and learning progress. Of the five selected countries for this study, those governments that set up strong monitoring and evaluation units prior to the pandemic and built the technical capacity required to monitor progress remotely for several years, responded quickly and effectively by gathering relevant data to inform policy. While it might be challenging to monitor reach, engagement, and learning if countries have implemented remote learning solutions mainly based on one-way education methods such as TV or radio, rigorous surveys to teachers, parents, and students through phone calls might be a way to monitor the data. At the same time, parents need to be guided on how to best support children to use the devices to learn remotely, and governments should focus on understanding the perceived comfort of households with technology and remote education. However, it still remains challenging to understand how policy decision-makers used data gathered by either the government or third-sector organizations to adjust the remote learning programs implemented during COVID-19 to better serve students and teachers.

POLICY TAKEAWAYS FROM AN IN-DEPTH MULTICOUNTRY ANALYSIS

Characteristics of education systems such as availability of resources, institutional development, remote education experience, and decentralization influenced the response of governments to COVID-19. Countries that leveraged those characteristics effectively executed remote learning programs. In fact, prior experience with remote education programs allowed education systems to effectively and rapidly implement their already existing distance learning programs to all students. Kenya, Sierra Leone, and the Edo State in Nigeria quickly pivoted toward remote learning because their governments had been building technical and digital capacity for several years. As these education systems responded rapidly but not necessarily reached the majority of the student population, **the question that emerges is how to transition from quickly pivoting to effectively scaling up a remote learning program that equitably reaches all students in the education system.**

Multichannel strategies are a strength to expand reach and target a diverse student population. Multimodal remote learning solutions were effective to increase the number of students reached if the solutions were complemented with a clear communication strategy. In the state of São Paulo in Brazil, the multimodal remote learning program reached approximately 85 percent of the student population. The program was complemented with (1) a proactive communication campaign on TV and social media to keep teachers and families informed about learning activities, (2) a task force that contacted families of students who were out of reach, (3) a mobile application that allowed teacher-student interaction, and (4) daily "live" conversations between the State Education Secretary and teachers. However, increasing reach was just the first step required to provide equitable access to remote learning. **The challenge that remains is how to effectively increase and monitor engagement at scale.**

Similarly, inclusive multichannel remote learning solutions were effective to reach a diverse student population. In Peru, TV learning sessions were supported with sign language, the zero-rated Web Light platform was adapted for students with special needs, and radio learning sessions delivered content

in nine native languages. Seventy-five percent of caregivers with children studying in intercultural rural schools knew about the government remote learning program, and 91 percent were using it. For those students who lived in remote communities and could not be reached with the traditional multichannel strategy, **the question that arises is whether governments should keep focusing on delivering top-down educational strategies, or consider identifying and promoting bottom-up community-based programs.**

At the same time, multimodal remote learning strategies present a challenge to align content across different platforms or channels. Coherent articulation across channels used to deliver remote learning were challenging, especially for countries that do not have prior experience with remote education at scale. In Peru and in some states of Brazil such as Mato Grosso do Sul, it was a challenge to align content across channels as ministries lacked content repositories. Delivering content that was not configurated in the same way across channels imposed additional pressure on teachers, as they had to provide differentiated feedback to students who accessed lessons through diverse channels.

While the channels used to deliver remote learning were critical during school closures, even more important were the roles of teachers. Education is a social experience and learning occurs when teachers interact with and provide effective feedback to students, either in face-to-face or remote education environments. For this to occur, governments needed to support and provide guidance to teachers rather than assigning an excessive focus on administrative work from them.

Sustained professional development and remote coaching programs were effective to equip teachers with the tools to use digital technologies in virtual classrooms. The state of Edo in Nigeria trained all teachers who were part of the Edo-BEST program in the past two years to effectively use digital technologies in the classroom. An existing coaching program that provides pedagogical and technical tutoring to teachers has been adapted to be delivered remotely. Thus, prior training and coaching have been critical to pivot toward remote teaching–learning during COVID-19. However, **it is still unknown how teachers' digital and pedagogical skills have impacted students' engagement and remote learning experience.**

Guidelines for remote education helped to clarify the new role for teachers, but an excessive administrative workload generated burnout and reduced pedagogical effectiveness. Peru and Brazil's well-intentioned teacher support systems ended up generating "burnout" (e.g., emotional, physical, and mental exhaustion), as teachers were asked to complete frequent administrative reports of their plans and results of students' progress. Both countries quickly redesigned the reporting system to reduce the "burnout" problem, and Peru's Ministry of Education published a resolution to reduce teacher's administrative workload. São Paulo and Minas Gerais developed mobile applications. These Apps enabled teacher-student communication but only during specific time periods. This structured interaction helped to reduce teacher burnout. In sum, in order to execute effective remote learning programs, education systems needed to consider (1) leveraging prior remote learning experience or collaborate with those that had experience, (2) focus on the strengths of multichannel strategies and solve the alignment challenges across channels, and (3) support teacher interaction with students and prioritize their pedagogical role over the administrative one. Transversely, the monitoring and evaluation was the compass required to understand progress and make adjustments, as well as being ready to incorporate adjustments and improvements, and troubleshoot during the implementation.

CHAPTER 3

WHAT WORKS WITH REMOTE AND REMEDIAL STRATEGIES? AN ANALYSIS ACROSS 13 COUNTRIES

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III. WHAT WORKS WITH REMOTE AND REMEDIAL STRATEGIES? AN ANALYSIS ACROSS 13 COUNTRIES

This section of the report builds on key lessons learned during the in-depth analysis of the multicountry experiences explored in the prior section. It also aims to present global trends of remote learning implemented during school closures and the actions governments adopted to get ready for remedial learning. The countries prioritized for this report are the low-income countries of Afghanistan, Haiti, Malawi, Mozambique, Niger, and Rwanda; the lower-middle-income countries of Cambodia, Cameroon, Kenya, Nepal, and Pakistan; and two high-income countries, Estonia and Uruguay, which have been included in this report because both governments have been building technical capacity for remote teaching–learning for several years. This exploratory analysis has the following structure: (1) distance education delivery systems; (2) curriculum adjustments; (3) teacher training and support; (4) monitoring and evaluation; and (5) preparing systems for remedial learning (see examples in table 3.1).

Table 3.1: What Works with Remote and Remedial Learning in Five Main Themes

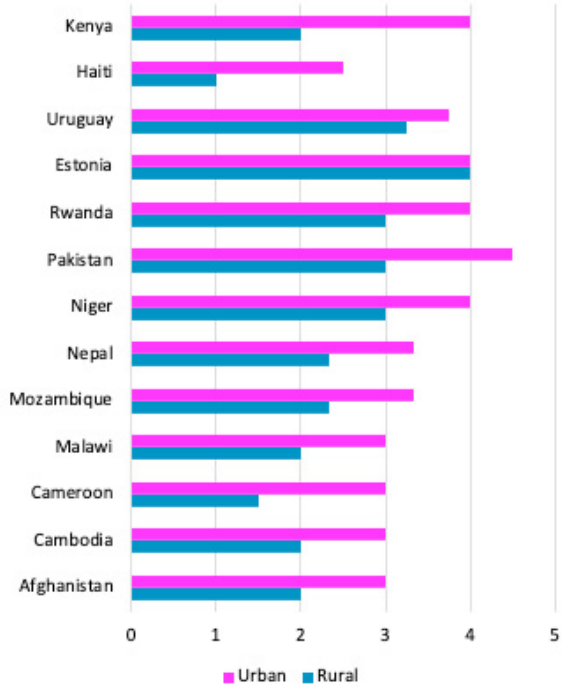
Delivery systems	Curriculum adjustments	Teacher support	Monitoring and evaluation	Remedial programs
Pakistan (interactivity) TV learning program with animated characters that were incorporated in the videos as facilitators during lessons.	**Afghanistan (core subjects)** Selected science and mathematics as core subjects to prepare students for evaluations in such subjects.	**Rwanda (emergency training)** Remote teaching training programs in ICT for education to over 5,000 teachers; this group of teachers then supported other teachers to become more familiar with the use of ICT for education.	**Malawi (monitoring access)** Monitoring coverage and quality of distance learning by conducting phone-based surveys and U-reports.	**Cameroon (remedial learning to catch up)** Extended calendar and setup of a six-week remedial program; teachers devoted 25% of the time to contents not covered in the previous academic year.
Cambodia (alignment) Task force-supervised content creation at all education levels to ensure alignment across broadcast, online, and paper-based delivery systems.	**Estonia (autonomy)** Schools and teachers autonomously deciding the subjects and contents to prioritize.	**Uruguay (sustained training)** Ceibal provided ad hoc training for teachers through its LMS; 92% of teachers were satisfied or very satisfied with the training activities provided.	**Estonia (formative assessments)** Seventy-one percent of students have been using online formative assessments; 64% have received feedback from teachers.	**Mozambique (remedial learning for examinations)** Six-month remedial program for grades 7, 10, and 12, because students in these grades sit for examinations.

Source: Own elaboration with data from interviews with policymakers and education experts from the selected countries.

DISTANCE EDUCATION DELIVERY SYSTEMS

The previous section of this study showed that multimodal delivery systems were effective to increase coverage both in urban and rural areas, especially when those delivery systems were complemented with a clear communication strategy, regular teacher-student interaction, and locally relevant educational content. In fact, the multimodal delivery system implemented in **Peru reached over 85 percent of students** and the one in **Brazil reached almost 75 percent of students**, as both countries were not only focused on the supply of content through different delivery systems such as TV, radio, and online platforms, but also on the effective teacher-student interaction and the constant communication of weekly schedules for remote learning sessions.

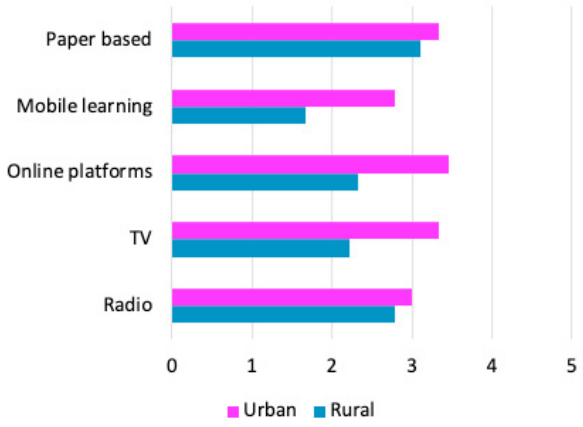
Figure 3.1: Perceived Effectiveness of Multimodal Delivery Systems



Source: Own elaboration, data from interviews with policymakers and education experts from the selected countries.

For this section of the study, education leaders interviewed in each country were asked to rate how effective multimodal delivery systems were to reach a wider student population (1 being less effective and 5 most effective). In almost all countries, multimodal delivery systems were more effective to increase coverage in urban areas than in rural areas (See figure 3.1). Regarding the perceived effectiveness of specific delivery systems, while "low-tech solutions" [13] were perceived as being similarly effective both in urban and rural locations, digital technologies such as online platforms, were perceived as more effective in urban areas than in rural ones (See figure 3.2). Globally, youth ages 25 years or less from rural areas faced the challenge of having rates of internet access **16 percentage points lower than their urban peers**. Similarly, in most of the countries selected for this study, structural challenges and the lack of infrastructure were given as reasons for the low effectiveness ratings of multimodal delivery systems in rural areas. The main challenges highlighted were poor access to electricity, lack of internet connectivity, scarcity of financial resources to buy devices needed for remote learning, and lack of pedagogical preparedness to effectively support students remotely, among other factors.

Figure 3.2: Perceived Effectiveness of Specific Delivery Systems



Source: Own elaboration, data from interviews with policymakers and education experts from the selected countries.

[13] **Low-tech and no-tech solutions** primarily refer to paper-based learning packs and physical resources that can be distributed to learners. Radio and television broadcasting might be considered mid- or low-tech as they require hardware which may be widely but not universally available and accessible.

Another key challenge highlighted in the previous section of this study was the effort that governments made to secure consistency of learning sessions, contents, and competencies across different delivery systems. Multimodal strategies that coherently articulate the content and learning sessions across delivery systems were effective to facilitate teacher-student feedback. This section of the study confirms that most education systems faced challenges to align contents across delivery systems; however, a group of countries had made important efforts to align contents to their respective national curriculum and aligned learning sessions across delivery systems. For example, Cambodia's Ministry of Education set up a task force to supervise content creation at all education levels to ensure alignment across broadcast, online, and paper-based delivery systems; one single video was produced for a specific learning session and this content was equally disseminated through social media and the national TV channel. Likewise, Cameroon's Ministry of Education, with support from UNESCO, worked to align contents delivered through TV, radio, and printed material through the program "Continuity of Education through a Multidimensional Distance Learning Device". In the case of Nepal's Ministry of Education, policy makers worked to ensure learning sessions and contents were coherent across channels by having a team of trainers and information technology (IT) teachers who constantly reviewed the alignment of contents. However, the ministry officials also recognized that the strategies employed to deliver content varied by delivery system—while radio learning sessions just followed a one-way approach, TV learning sessions were complemented with an interactive format. In the state of Punjab in Pakistan, a recently created curriculum authority that was affiliated to the School Education Department had responsibility for all curriculum-related matters and content development for schools in the state; in this way, Punjab's Education Department ensured content was aligned across delivery channels (Pakistan Ministry of Federal Education and Professional Training, 2020).

While content alignment across delivery systems was an important challenge to address to facilitate teaching and learning, another key issue to consider was adequately combining delivery systems that worked effectively and complemented each other (see table 3.2). This study found that there was no single best combination; instead it depends on many contextual factors such as access to the devices needed for remote learning and internet connectivity. Education leaders in a group of countries perceived that only low-tech solutions were the most effective delivery systems. For example, in Mozambique, the combination of national radio and community radios with printed material were considered effective, as the country had low mobile and internet penetration and almost 20 local languages that were spoken in primary schools. In other countries, the combination of low-tech and high-tech solutions were perceived as more effective. For example, as Cambodia had a high mobile phone penetration, education leaders in the country perceived that the combination of SMS, Facebook, Messenger, and printed handouts provided to students on a weekly basis were effective to ensure learning continuity. Finally, countries that invested in technological infrastructure for several years perceived that only high-tech solutions more effective to deliver learning. In Estonia digital delivery systems were fully adopted for remote learning and assessments because the country had high internet and mobile penetration and it was perceived as a cost-effective system to facilitate personalized learning and track students' progress.

Table 3.2: Perceived Effectiveness of the Combination of Delivery Systems

Combination	Countries
Low-tech only	Afghanistan, Cameroon, Malawi, Mozambique, Nepal
Low-tech and high-tech	Cambodia, Niger, Pakistan, Rwanda
High-tech only	Estonia, Uruguay

Source: Own elaboration with data from interviews with policymakers and education experts from the selected countries.

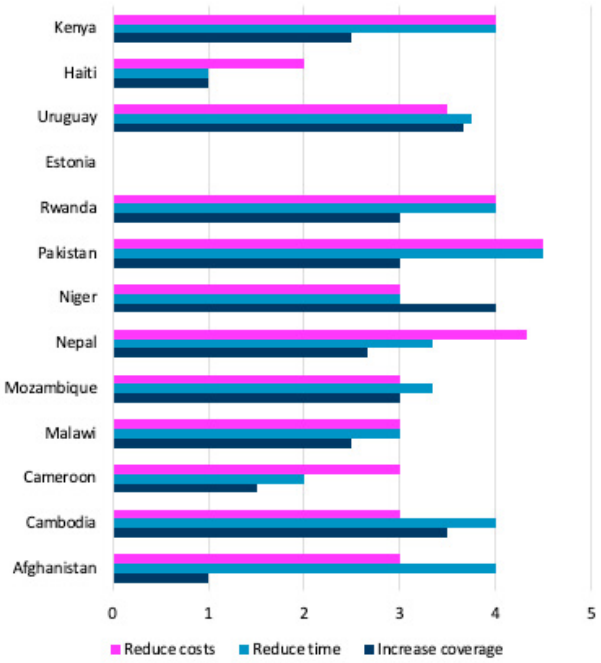
CURRICULUM ADJUSTMENTS

The previous section of this study showed that adjusting the scope of the curriculum to be covered made the development process of remote learning more effective. Curriculum adjustments were not only more effective but necessary, especially for countries that experienced remote learning at scale for the first time, lacked a vast repository of content to deliver remote learning, or had limited airtime on TV or radio. This section of the study explores the efforts conducted by governments to prioritize the curriculum, such as the prioritization of competencies, subjects, and contents, among other adaptations. These adjustments can be effective to increase coverage, implement remote learning programs rapidly, and deliver distance learning programs at lower costs. Both the efforts conducted by ministries of education to adjust the scope of the curriculum and the perceived effectiveness of such adjustments are discussed below.

According to the **Survey on National Education Responses to COVID-19 School Closures** conducted by UNESCO, UNICEF, and the World Bank, education systems have made efforts to adjust the scope of the curriculum to be covered by reducing subjects and contents or by giving more autonomy to schools to decide on curriculum matters. In fact, **62 percent of countries analyzed planned to adjust the scope of the curriculum** content to be covered. On the one hand, most countries in Africa, Asia, and Latin America adjusted the curriculum following a top-down approach in which governments provided guidelines to reduce the number of subjects and contents to be covered. On the other hand, several countries in Europe gave more autonomy for schools to decide how to adjust the curriculum. **According to a report developed by the Economic Commission for Latin America and th Caribbean (ECLAC) and UNESCO (2020)**, there are two main alternatives to adjust the curriculum: (1) select curricular content that appears to be more relevant and can be prioritized over others, (2) integrate contents and learning objectives into interdisciplinary clusters that allow various subjects to be addressed at the same time through contents that are relevant for students in the COVID-19 context. This study identified three main strategies that countries could follow for curricular adjustment: selection of core subjects and contents based on those that have examinations; selection of subjects and contents after critically analyzing the curriculum or after assessing students and identifying areas where they need extra support to catch up; and schools and teachers autonomously deciding the subjects and contents to prioritize as the education system was decentralized and supported them for years to build the capacities to make those decisions.

Several education systems adjusted the scope of the curriculum to be covered by reducing subjects and contents based on those that will be evaluated. For instance, **Pakistan's Ministry of Federal Education** prioritized english, mathematics, and sciences as **core subjects through the TeleSchool** national remote learning program, as these were the courses prioritized for examinations. Similarly, **Afghanistan's Ministry of Education** selected science and mathematics as core subjects to prepare students for evaluations in such subjects. **Mozambique's Ministry of Education** not only selected core subjects, but also prioritized remote learning programs for grades 5, 7, 10, and 12, as students in those grades have to sit for national examinations. Another group of countries took a different approach to reducing subjects and contents after working with their respective curriculum teams to select foundational knowledge that was critical for students to learn. For example, in Nepal, the Ministry of Education took a collaborative approach and worked with the **National Curriculum Development Center** and nonprofit organizations to adjust the curriculum to focus on foundational knowledge for preprimary and primary schools. However, while the previous section of this study showed the case of Sierra Leone in which the Teaching Service Commission prioritized the subjects to be aired after systematically analyzing those in which students were not performing as well as expected, this section of the study has not found countries deciding to adjust the curriculum after having identified areas in which students need additional support

Figure 3.3: Perceived Effectiveness of Curriculum Adjustments



Source: Own elaboration, data from interviews with policymakers and education experts from the selected countries.

Fewer countries in this sample gave autonomy to schools to decide how to adjust the curriculum. In Estonia, the National Curriculum was just a guiding framework for teachers. The Ministry of Education did not provide recommendations for curriculum prioritization as each school was responsible for designing its own contextualized curriculum. As Estonia's government announced school closures on March 16, 2020, it became a challenge for schools to formally adjust the scope of the curriculum to be covered; thus, in most cases, teachers made adjustments in their lesson plans.

Most education leaders and experts that contributed to this study perceived that the main benefits of adjusting the scope of the curriculum were related to cost savings and time efficiency, while fulfilling the learning objectives of the curriculum. Education leaders in countries such as Rwanda, Pakistan, Nepal, Cambodia, and Afghanistan perceived that by reducing the number of competencies, subjects, and contents, as well as by delivering lessons through multigrade classrooms, governments could implement remote learning programs more rapidly while saving costs (See Figure 3.3). Although these perceived benefits were relevant to consider, policy makers also ensured that contents were relevant for students in the current emergency situation. Such adjustments should not only focus on curricular competencies that were examinable, but also those that were relevant in the current situation of the pandemic: self-directed learning, care for oneself and others, and social-emotional skills, among others.

TEACHER TRAINING AND SUPPORT

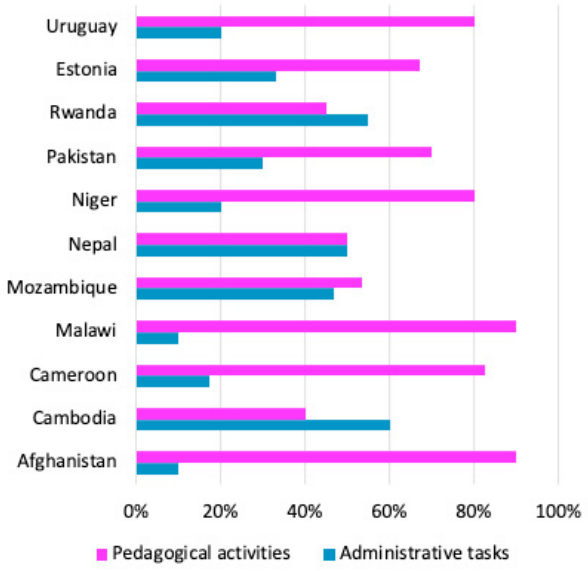
Education is a social experience and learning occurs when teachers interact with and provide feedback to students, either in face-to-face or remote environments. For this to occur, countries need to provide guidance to teachers to ensure that the elements of effective teaching are present so that explanations build clearly on students' prior learning. The previous section of this study showed that sustained professional development and remote coaching programs were perceived as effective to equip teachers with the tools to use digital technologies in virtual classrooms. This section of the study displays (1) countries that provided limited teacher support during the pandemic, (2) a group of countries that designed teacher support plans but faced limitations to implement them at scale, and (3) countries that trained teachers to use digital tools for education for several years.

The first group of countries provided limited support to teachers or relied on third-sector organizations to conduct teacher training programs. Rwanda's Ministry of Education implemented remote teaching training programs in information and communication technology (ICT) for education to over 5,000 teachers, who then supported other teachers to become more familiar with the use of ICT for education. Nepal's authorities relied on the support of education cluster members, local governments, and teacher organizations to conduct remote teaching training programs on digital skills. Niger's Université Abdou Moumouni implemented remote teacher training programs during school closures, but once schools reopened,

these programs were not continued. Other countries included remote teacher training programs in their education response plans to COVID-19. Cambodia designed a plan to improve teachers' pedagogical skills to ensure learning continuity; Cameroon planned to train teachers around preventing the spread of the virus; Haiti developed a strategy to train over 7,000 teachers to support remote learning; Malawi designed a plan to develop material with practical advice for teachers, as well as to provide orientation and training for education managers and teachers; and Pakistan planned to equip teachers with distance learning tools and train them to deliver remote education strategies and learning assessments to effectively support students. However, in most cases, education systems encountered challenges to implement these remote teacher support programs: most teachers were not familiar with the remote teaching platforms and tools, and some were not enthusiastic about the training due to lack of appropriate equipment and contents, and poor internet connectivity, among other difficulties.

Other countries supported teachers for several years to equip them with the tools needed to integrate digital technologies into their educational practice. In the case of Estonia, teacher education programs focused on the use of digital technologies for education that were already present before COVID-19 and effectively executed by ministry partner organizations, such as HITSA (Information Technology Foundation for Education). Thus, Estonia was in a better position than other countries to implement remote learning, as teachers had been using digital tools in their classrooms for several years. During the pandemic, partner organizations supported teachers by creating active communities in social networks in which teachers shared tutorials, best practices, and lesson plans, among other learning resources. In the case of Uruguay, the government leveraged a pre-existing national digital education program—Ceibal, created in 2007, not only to provide digital resources for students, but pedagogical support for teachers. During the pandemic, Ceibal provided ad hoc training for teachers through its Learning Management System; 92 percent of teachers were satisfied or very satisfied with the training activities provided by Ceibal, although 70 percent expressed the need for further training for more effective use of resources (Plan Ceibal, 2020).

Figure 3.4: Teacher Time Allocation



Source: Own elaboration, data from interviews with policymakers and education experts from the selected countries.

While remote coaching and teacher training programs are important to equip teachers with the tools needed for remote learning, clear guidelines are also relevant to clarify the enhanced role for teachers; such guidelines should prioritize a pedagogical over administrative workload, as documented during the previous section of the study, emphasizing the latter may generate burnout and reduce pedagogical effectiveness. Thus, it is essential that ministries of education provide guidance on how to use specific platforms for remote teaching, and how to provide feedback to students and support parents, particularly if new forms of technology are being implemented. At the same time, governments should provide tools to schools to monitor well-being, as teachers will have to dedicate intensive time to support students' mental health while keeping themselves motivated. Such support is critical in a time where youth in some countries, such as the United Kingdom, have raised concern that the pandemic has worsened pre-existing mental health conditions, mainly

due to sustained school closures and limited social connections (Weale, 2020).

Regarding the provision of guidelines to teachers, most governments in this sample planned and implemented guidelines for the enhanced role of teachers (see table 3.3). While a larger group of countries prioritized pedagogical guidelines, some education leaders interviewed for this study perceived that teachers were spending more time in administrative activities than in pedagogical ones (see figure 3.4). For example, in the case of Cambodia, the **Ministry of Education** developed a set of guidelines that combined administrative and pedagogical activities for teachers by (1) establishing online learning groups with students and parents; (2) providing information on how to access learning programs; (3) ensuring students accessed paper-based learning materials; and (4) conducting home visits to monitor distance learning activities. Teachers were also expected to provide weekly paper-based resources to students and meet them weekly to provide their marked worksheets and issue new ones for the week ahead. As most of these activities were new for teachers, it seemed that they were doing more administrative work; thus, education leaders in the country perceived that 60 percent of teacher's time was allocated to administrative duties and 40 percent to pedagogical activities. In the case of Uruguay, teachers were also expected to fill administrative information, but instead of requesting new information from them, the government decided to use **GURI, a digital platform that was used by Uruguayan teachers for over 10 years** to report information, such as student attendance and grades. Moreover, the contact information of parents was already in this platform, so teachers could easily reach out during school closures, instead of investing time in building a contact database from scratch.

Even if education leaders perceived that teachers were dedicating more time to pedagogical activities, it was still important to monitor teachers' socio-emotional well-being to avoid burnout and take actions when needed. However, countries in this sample indicated that socioemotional well-being was not being monitored, and some countries, such as Estonia, assumed that time allocation changed and distance learning effected teachers' well-being and burnout rates.

Table 3.3: Governments Education Response Plans to COVID-19

Country	Response Plan
Afghanistan	Alternate Education Service Delivery COVID-19 Emergency Response Plan
Cambodia	Education Response Plan to the COVID-19 Pandemic
Cameroon	Emergency Response Project against COVID-19 in Basic Education
Haiti	Education Sector Response Plan to COVID-19
Nepal	Education Cluster Contingency Plan
Pakistan	National Education Response and Resilience Plan for COVID-19
Rwanda	Ministry of Education Response Plan to COVID-19

Source: Own elaboration, selection of COVID-19 related portals gathered during interviews with policymakers and education experts from the selected countries.

MONITORING AND EVALUATION

The monitoring and evaluation process is the compass required to understand progress and make adjustments, improvements, and troubleshooting during the implementation. While this study does not provide a complete picture of learning losses in the countries under analysis, researchers in the Global North have projected that students could start the 2020 school year with less than 70 percent of learning gains in reading and less than 50 percent in mathematics. Recent studies also estimated that if students were out of school for five months, we could expect a global loss of 0.6 learning-adjusted years of schooling, a situation that would lead to labor earning losses over the work-life of the students currently in school. This study instead focused on exploring how countries organized and implemented their monitoring systems and presents the perceptions of education leaders about the remote learning programs implemented, student engagement, and learning outcomes (Moss, 2020).

Most countries in this sample have been able to monitor processes, while few have started monitoring outcomes. That is, the focus has been on the supply side by monitoring how governments implemented remote learning programs and tracking the share of the student population covered by such strategies. For example, Cambodia's Ministry of Education monitored student access to distance learning programs such as TV, social networks, and Telegram biweekly. In Malawi, the Ministry of Education monitored coverage and quality of distance learning by conducting phone-based surveys and U-reports, a social messaging tool and data collection system developed by UNICEF to improve citizen engagement and inform leaders by sending short message services (SMS) polls and collecting real-time responses.[14] Thirty-six percent of respondents claimed that school age children accessed distance learning programs. Rwanda's Education Board hired consultants to conduct a quick survey by calling caregivers to understand how they were supporting children with distance education activities; according to the RECOVR survey conducted by Innovations for Poverty Action (IPA), 80 percent of children in Rwanda were spending time on education at home during school closures. Other countries faced challenges to constantly monitor processes but had plans to implement monitoring and evaluation systems. For example, Afghanistan's Ministry of Education set up a team for the evaluation of the response plan to COVID-19. Mozambique's Ministry of Education implemented a real-time monitoring system to track coverage, engagement, and learning through digital questionnaires and SMS. Even though such monitoring efforts were important, it was just the first step to understand the effectiveness of remote learning. It was also critical to evaluate the effectiveness of distance learning programs from the demand side, that is to track the level of student engagement and learning outcomes.

Regarding the monitoring of student learning, in a group of countries, schools and teachers were already conducting formative and summative assessments, while in other cases governments were planning to conduct diagnostic assessments once schools reopened (see table 3.4). Learning assessments served as a feedback mechanism to allow teachers to understand what was being learned and how to adapt teaching and learning in the classroom. Teachers in Cambodia constantly conducted formative assessments by reviewing students' worksheets and providing feedback on the returned worksheets. Cambodia's government also conducted a diagnostic assessment when schools reopened to understand learning loss. In Estonia, 71 percent of students used online formative assessments; and 64 percent received feedback from teachers and considered it one of the three most important supporting activities. In Uruguay

[14] U-Report has been designed to strengthen community-led development, citizen engagement, positive change, and social accountability by allowing citizens to speak out on what is happening in their communities However, it is important to consider its constraints and limitations and the technologies used to gather data (Better Evaluation 2017), such as the sample size, because response rates can be low if the monitoring strategy is not complemented with a communication campaign and a potential selection bias toward those who are actually reporting.

while schools were closed, 96 percent of primary school students voluntarily took formative online assessments through an evaluation platform that was implemented prior to the pandemic. In Cameroon, teachers were encouraged to conduct diagnostic assessments at the start of the school year to plan for remedial learning. Similarly, Malawi's Ministry of Education conducted diagnostic assessments once schools reopened to better understand learning loss and plan for remedial lessons to help students catch up (Republique du Cameroon, 2020).

Other countries prioritized maintaining examinations or large-scale system-level assessments. Such examinations were used to **select or certify students as they moved from one level of the education system to the next**. Prior to the COVID-19 pandemic, examinations were usually administered in person. In the current situation, education systems had to **evaluate whether in-person exam administration was feasible**. The governments of Afghanistan, Haiti, Malawi, and Mozambique postponed examinations, but still planned to implement them in person at the end of the academic year, taking into account health and safety considerations. In contrast, Estonia canceled examinations and the terms for graduation were amended for the academic year. Upper **secondary school examinations were made optional** and could also be completed at the beginning of the next academic year. Schools in the country were given a right to assess without marks. Similarly, Pakistan also **canceled annual examinations** for grades 9 to 12, but in that case, students were promoted to the next grade based on approved guidelines. Examinations were conducted for special cases, such as students who failed in more than 40 percent of the subjects during the year, or if students were not satisfied with their grade and wanted to improve it. Even if some countries that postponed or canceled examinations, the pandemic revealed that not all countries were at the same position at the beginning of the pandemic concerning the assessment capacity and infrastructure: countries that invested in innovation for evaluations were in a better position to implement online evaluations and assess students at scale

Table 3.4: Assessment Plans of Selected Countries

Country	Assessment plan	Student promotion[15]	Type of assesssments
Afghanistan	At the end of the academic year, students will be assessed through summative examinations	—	S
Cambodia	Once schools reopen, grades 9 and 12 will have summative examinations	—	S
Cameroon	Government encouraged teachers to conduct diagnostic assessments as schools reopen	—	F
Haiti	National standardized tests maintained in the traditional format for grades 9 and 12	Automatic	S
Malawi	Diagnostic assessments once schools reopen to support teachers to provide remedial lessons	—	F
Mozambique	Diagnostic assessments once schools reopen and national evaluations after remedial programs	—	F S
Pakistan	Annual exams cancelled. Planning to conduct sample-based assessments when schools reopen	Automatic	
Rwanda	Nationwide test will be given to students when schools reopen	—	S
Estonia	Examinations were made optional	—	F
Uruguay	Formative voluntary online evaluations	—	F

Source: Own elaboration with data from interviews with policymakers and education experts from the selected countries.
Note: — = Not available.

Legend: S Summative F Formative

PREPARING SYSTEMS FOR REMEDIAL LEARNING

While it was critical to monitor processes and evaluate learning outcomes to understand how the education system was progressing, the results were the key ingredient to plan how to better support those students who were in most need. Countries selected for this study were either planning or

[15] Student promotion: while a few countries, such as China and Germany, decided to hold traditional exams, a majority of the countries opted to postpone or cancel their examinations. In Pakistan, the government cancelled all board examinations and announced that all students could be auto-promoted based on certain criteria. However, at the time this study was conducted, most of the selected countries did not provide information regarding student promotion.

implementing a wide range of support programs to help students catch up as schools reopened: (1) remedial learning programs that targeted students with a poorer rate of academic progress, generally designed to give students the individual attention needed to build skills and confidence; (2) accelerated programs designed to be completed quickly, through short, intensive, and rigorous phases of learning; and (3) increased class time through extensions of a school day or year for active learning.

By analyzing government responses to help students catch up, this study identified that most countries designed top-down, centralized programs, while a few either gave autonomy to schools or to local education units to design and implement remedial programs. Afghanistan's Ministry of Education extended the academic year calendar to increase class time and planned to implement accelerated learning programs, given that a large number of students were not able to access the remote learning contents while schools were closed. In fact, Afghanistan implemented several accelerated learning centers for girls with support from UNICEF and leveraged on that experience. Cameroon's Ministry of Education also extended the academic year calendar to increase class time and set up a six-week remedial learning program in which teachers devoted 25 percent of the time to the contents not covered in the previous academic year. Malawi's Ministry of Education developed manuals for remedial teaching, and all teachers were trained to implement remedial learning programs focusing on students with a poorer rate of academic progress and on reviewing contents learned in the previous academic year. In Cambodia and Rwanda, remedial learning programs planned by the central government, targeted students who had less support at home while schools were closed. Other governments provided basic guidance, financing, and tools, but local education units or schools had the autonomy to design and implement remediation programs. Estonia's government equipped managers and teachers for several years with the tools needed to run schools. The government understood that each student was unique and had different learning needs; thus, school administrators and teachers were in a better position to plan and implement remedial learning. As a complement, HITSA, one of the ministry's EdTech partners, developed a personalized learning path infrastructure and a program which used students' digital footprints to track learning progress digitally and provided additional information for teachers that could later support students that needed to catch up.

Another difference in the design and implementation of programs to help students was the countries' approach. While some countries took an ex post approach, other countries preferred an ex ante strategy for remedial learning. Governments that took an ex post approach planned to implement remedial learning programs after they assessed students and identified the magnitude of the learning loss problem. For example, Pakistan reopened schools on September 15, 2020, by phases, and the government assessed learning losses during the first weeks of classes. Remedial learning in schools began once local and central governments had a clear understanding of learning loss. Rwanda had a mixed approach—the government designed a national diagnostic assessment for primary and lower secondary schools to identify students with low scores for remedial learning. While this approach seemed to be an ex post strategy, the government had already designed a remedial learning program that would target students with a poorer rate of academic progress and would be focused on core subjects: literacy and numeracy for primary schools and science, math and English for secondary schools. These subjects were chosen because prior national examinations showed that learning gaps were mainly present in those subjects. Niger had prior experience with remedial programs; still, diagnostic assessments were carried out and a significant loss was noted among students. Thus, the government implemented a 45-day accelerated learning program from October 15 to November 30, 2020, to help students catch up.

Countries that decided to follow an ex ante approach to help students catch up and started remedial learning or accelerated learning programs, as governments understood that a group of students had been severely affected by school closures. Thus, to avoid dropout or continuous poor performance, schools started to conduct such programs before assessing students. For example, in Uruguay, as teachers

reported that approximately 30 percent of the student population were not able to actively participate in remote learning programs, the government increased class time by planning summer classes for February 2021, as had been done in prior years to help students in vulnerable situations to catch up. In Mozambique, the government readjusted the school calendar starting from October 2020 up until May 2021 to first focus on catch-up strategies for grades 7, 10, and 12, because students in those grades had to sit for examinations. Thus, the question that remains is whether ex ante remedial strategies were in fact proactive, or if education systems decided to implement remedial or accelerated learning programs to prepare students for national examinations.

CHAPTER 4

CONCLUSIONS AND FURTHER RESEARCH

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IV. CONCLUSIONS AND FURTHER RESEARCH

Not all countries were in the same position before the pandemic. Those that had previously invested in technology and institutional capacities were in a better position to implement comprehensive and effective delivery systems, rapidly transition to online teacher training or coaching programs, set up monitoring systems to track progress, and deploy digital formative and summative evaluations at scale. A summary of the main conclusions of this study are discussed in table 4.1.

Table 4.1: Summary of Conclusions

Category	Further studies	Conclusions
Delivery systems	COVID-19 Response Toolkit Remote learning strategy as a key element in ensuring continued learning	•The perceived effectiveness of multimodal delivery systems varies according to the country's income classification. •The perceived effectiveness of the combination of delivery systems depends on contextual factors; implementation can be affected by the "remote learning paradox."
Curriculum adjustment	Education in the time of COVID-19 Continuing education and the impact on the curriculum	•While countries have similar objectives for curriculum adjustments, the strategies followed for such adjustments vary widely. •Content curation following the learning objectives of the adjusted curriculum was more effective than creating new content. • Most countries have prioritized academic contents, while few have focused on competencies relevant in the current context such as socio-emotional skills.
Teacher support	Strengthening online learning when schools are closed The role of families and teachers in supporting students during the COVID-19 crisis	•A perceived need to recalibrate how teachers divide their time between effective teaching and administrative tasks, to focus on what is pedagogically effective
Monitoring & evaluation	Presenting evaluations of the COVID-19 Emergency Window	•Countries focused on formative assessments as feedback mechanisms to understand learning loss vs. others focused on large-scale system-level assessments. •Countries focused on monitoring the supply of delivery systems vs. others focused on monitoring the demand (usage, engagement, and learning). •Countries focused on implementing top-down centralized monitoring systems, others developing bottom-up monitoring processes, and others outsourcing monitoring processes.
Remedial learning	COVID-19 Response Toolkit Helping students catch up on lost learning, with a focus on closing equity gaps	•Governments took an ex post approach by implementing remedial learning programs after assessing students, others followed an ex ante approach by introducing remedial learning before assessing students. •Governments have the opportunity to innovate and transform the traditional school model and how remedial learning is done.

Source: Own elaboration.

In general, multimodal delivery systems were perceived as an effective strategy to increase coverage, if education policy makers thoughtfully planned and implemented remote learning programs and considered contextual factors.

1. While in upper-middle-income countries multimodality was perceived to be equally effective in both urban and rural areas, in low-income countries multimodal delivery systems were perceived to be more effective in urban than in rural areas; thus, these perceptions showed how education responses to COVID-19 could widen inequities within and between countries.
2. The survey results and interview responses illustrated that there was no single best combination of delivery systems. Education experts in most low-income countries perceived that combinations based on low-tech delivery systems (e.g., radio, TV, and printed material) were perceived as more effective. In other countries a combination of low- and high-tech solutions were perceived as more effective (e.g., printed material combined with mobile-based solutions). The effectiveness of the multimodal combinations depended on a variety of contextual factors, such as access to devices needed for remote learning, internet connectivity, prior experience with the delivery system, teacher preparedness and capacity, and quality of contents that are interactive and locally relevant, among other factors. Even with very well-articulated EdTech solutions, the **learning experience can be poor if the intervention does not address these contextual factors.**

The adjustment of the curriculum and content curation made the development process of the remote learning strategy more effective, as it allowed for cost savings and time efficiency. Such adjustments were needed to fulfill the main learning objectives of the curriculum, but also needed to consider that replicating the face-to-face teaching–learning practices and the curriculum would not necessarily work in a remote learning environment.

1. This study has seen a tendency in most ministries of educations to adjust the curriculum with a similar objective, but the strategies or paths followed to do so varied across countries. On the one hand, some countries implemented top-down strategies by (1) selecting core subjects based on those that had examinations, (2) prioritizing subjects after carefully analyzing curriculum, and (3) integrating contents and learning objectives into interdisciplinary clusters that allowed various subjects to be addressed at the same time. On the other hand, fewer countries opted for giving autonomy to schools or teachers to do bottom-up adjustments.
2. Especially for countries that experienced remote learning at scale for the first time, lacked a vast repository of content to deliver remote learning, or had limited TV or radio airtime, content curation and curriculum adjustments were not only more effective, but necessary. Investing time in analyzing content that already existed and curating it around the curriculum's learning objectives **was more effective than creating new content** that took time and was cost-intensive.
3. Adjustments should not only focus on curricular competencies that are examinable and important to fulfill short-term objectives, but also those that were relevant in the situation of the pandemic, such as self-directed learning, care for oneself and others, social-emotional skills, and competencies that were critical for mid- and long-term learning objectives. Countries that prioritized these competencies witnessed that students' well-being improved: they were **happier, healthier, and enjoyed independent learning—90 percent of students in Estonia were satisfied with remote learning**. In other contexts, students **gained autonomy and discovered new ways of learning**.

As education is a social experience, learning occurs when teachers interact with and provide effective feedback to students.

1. Most governments provided guidelines to clarify the enhanced role for teachers by emphasizing the importance of the teacher-student interaction, but education leaders in some countries still perceived that there was an excessive focus on the administrative workload which generated burnout and reduced pedagogical effectiveness. The COVID-19 pandemic evidenced the urgent need to recalibrate how teachers divide

their time between effective teaching and administrative tasks. Efforts focused on freeing time from administrative tasks to be used for direct teaching were highly welcomed by teachers. Examples of such strategies were remote tutoring to support students catch up, hiring additional teachers to support smaller class sizes, setting up mechanisms to have regular conversations with teachers to receive feedback, and adjusting administrative workloads if needed.

The COVID-19 pandemic revealed the different typologies and strategies that governments had around monitoring and evaluation processes. This study has identified three different typologies that define the approach taken by ministries of education to assess students.

1. While some countries focused on formative and summative assessments as feedback mechanisms for teachers to support students during the pandemic, others prioritized maintaining examinations or large-scale system-level assessments to select learners in a given grade for further schooling or to obtain data at a national level for decision-making.
2. Most countries focused their monitoring efforts on the supply of delivery systems and contents deployed, while fewer governments made efforts to understand the demand; that is, the coverage and use of the delivery systems for education, the engagement of students during remote education, and student learning.
3. Even though most governments implemented top-down centralized monitoring systems through phone or online surveys, others developed bottom-up monitoring processes by encouraging citizens to engage through U-Reports and finally, a smaller set of countries outsourced the monitoring processes to experts, consultants, or NGO's.

Most governments introduced remedial programs to support students to catch up, but the specific strategy chosen to help students varied across countries.

1. Some governments decided to take an ex post approach toward remedial learning by postponing these programs after schools reopened, when education would get "back to normal," and students were assessed to identify the magnitude of the learning loss problem. Others followed an ex ante approach to help students catch up by introducing remedial learning or accelerated learning programs; that is, implementing catch-up programs without leading the actions by previous assessments, under the assumption that a large group of learners had been severely affected by school closures.
2. The COVID-19 pandemic presented significant opportunities to innovate and, when possible, transform the traditional school model. This crisis revealed that governments had to reassess how to monitor both processes and learning outcomes, how to conduct formative or large-scale assessments, and how teachers could support students to catch up.

In addition to this qualitative study, rigorous impact evaluation studies were required as a complementary effort to better understand the effectiveness of remote and remedial learning interventions. The questions that required further qualitative and quantitative research are discussed in table 4.2 and have been grouped in six sections.

Table 4.2: Further Research

Category	Questions
Leveraging institutional capacities and cross-country collaboration	1. As remote learning is likely to continue, even when schools start to reopen, how do governments effectively scale up a remote learning program that equitably reaches all students in the education system? 2. How can policy makers build sustained institutional capacities in the fields of innovation and technology and create multi-stakeholder collaborative environments that enable innovation in education?
Inclusive multimodal delivery systems	3. Should governments keep focusing on delivering top-down educational strategies, or consider identifying and promoting bottom-up community-based programs? How can teachers be supported to develop such programs?
Sustained teacher training and support	4. What are the key digital and pedagogical skills that have more effectively impacted the learning experience?
Perceived effectiveness of curriculum adjustments	5. Will the prioritization of contents require remedial actions to reduce the learning loss that these adjustments might cause later on?
National strategies to remediate learning losses	6. Are ex ante remedial strategies in fact proactive, or have education systems decided to implement remedial or accelerated learning programs to prepare students for national examinations?

Source: Own elaboration.

CHAPTER 5

POLICY CONCLUSIONS

Abubakar Balogun

V. POLICY CONCLUSIONS

The following policies have been identified as key areas for governments to build back better and more sustainable education systems. Following the five principles that the World Bank EdTech approach paper "Reimagining Human Connections" suggests, when education systems invest in EdTech, these policy recommendations provide a compilation of the results of the global analysis, as well as different consultations with experts in the countries studied:

Ask why: EdTech policies and projects need to be developed with a clear purpose, strategy, and vision of the desired educational change.

- Curriculum adjustments need to go beyond the selection of core subjects and foundational knowledge. The pandemic has interrupted presential education, a situation that brought major challenges, such as providing remote learning in contexts that lack the infrastructure to do so, as well as adapting contents and pedagogies. Although this study has shown a clear tendency to prioritize those subjects and contents that are urgent to cover to prepare students for assessments, teachers should also focus on competencies that are contextual and relevant in the scenario that we are currently living in, such as social-emotional skills to help students cope with challenging situations that they might be facing at home. In addition, it will be important to understand that the prioritization of contents will require remedial actions later on to reduce the learning loss that these adjustments might cause.
- Socio-emotional support is urgent for teachers, students, and parents. Remote learning strategies cannot be simply limited to a supply of lessons and contents. Strategies for providing support are also needed. The COVID-19 pandemic and the extended school closures have changed the role of teachers, students, and parents, and most of them were not prepared for such change. Similarly, social isolation has affected several students, particularly those who were at a disadvantage. A comprehensive strategy is required for socio-emotional monitoring and psychosocial support to ensure well-being and avoid burnout. This strategy has to incorporate monitoring instruments to measure anxiety and identify socio-emotional needs as first steps. It will also be critical to provide guidance material and communication channels available for students, teachers, and parents. As countries transition to a more consistently blended learning model, it is necessary to prioritize strategies that provide guidance to parents and equip them with the tools required to help them support students, while keeping frequent communication with teachers.

Design and act at scale, for all: The design of EdTech initiatives should be flexible and user centered, with an emphasis on equity and inclusion, in order to realize scale and sustainability for all.

- Ensure the sustainability of multimodal delivery systems, taking into account contextual factors and avoiding the remote learning paradox. Even though the perceived effectiveness of multimodal delivery systems varies across continents and countries, it is critical to guarantee the deployment and monitoring of the most effective combination of delivery modalities, considering the contextual factors of each country. For example, in countries with high mobile phone penetration, this technology has high potential to improve reach, scalability, and flexibility of teacher professional development, as well as student learning. For some countries low-tech solutions would be more appropriate, but for others high-tech delivery channels will be more effective. In this way, education policy makers can avoid the "remote learning paradox," a situation in which governments prioritize online learning solutions to minimize learning losses, but students who are most at risk of learning losses cannot access those solutions.
- Remedial and accelerated learning programs need to be carefully implemented and monitored. Even though most countries have planned to or are already implementing programs to

support students to catch up, remedial programs should be carefully implemented, not only by identifying the areas in which students need more support, but also by constantly monitoring how students are progressing. The adoption of flexible delivery systems for content delivery and remote teacher-student interactions adopted during the pandemic might open new opportunities for remedial learning programs in the years to come.

- Delivery systems following a Universal Design for Learning (UDL) will be inclusive for all students. The UDL approach recognizes that in a classroom students are different and have diverse needs. Thus, remote and remedial learning, designed to follow a UDL approach, are effective to reach a diverse student population. Examples of inclusive delivery systems for students with special needs are TV learning sessions supported with sign language, online platforms adapted for students with special needs, or radio learning sessions that deliver content in native languages.

Empower teachers: Technology should enhance teacher engagement with students through improved access to content, data, and networks, helping teachers better support student learning.

- Sustained professional development and constant teacher support. Emergency crash courses to train teachers might not be enough to both improve their digital and adopt their pedagogical skills to the new context. The pandemic has evidenced the critical role that teachers play; sustained professional development through preservice teacher education and in-service teacher training can be effective to equip teachers with tools for remote and remedial teaching–learning. Sustained professional development will impact student attention and avoid a decrease in motivation and engagement that some countries have started to experience. The proficiency (skills, knowledge, and experience) to teach remotely (synchronously or asynchronously) should not be considered as a "sunk cost" or a "nice to have" skill for teachers, but a critical one to face the current crisis as well as to offer new educational opportunities after the pandemic. Teachers' digital and pedagogical skills are needed to critically assess and decide when and how to effectively adopt remote learning strategies and realistically define their impact to support or enhance learning.
- Prioritize teachers' interaction with students. Teaching quality is more important than the delivery systems used to deploy content; thus, there is an urgent need to recalibrate how teachers divide their time between effective teaching and administrative tasks—pedagogical exchanges need to be prioritized over administrative reports. Efforts focused on freeing time from administrative tasks to be used for direct teaching and support are critical at a time when students not only need support to catch up, but also to overcome challenging socio-emotional conditions. The EdTech strategies adopted for remote and remedial learning need to acknowledge the relevance of having regular (daily, weekly when possible) teacher-student and peer interaction, either by using digital technologies, landline phone calls, or equivalent methods.

Engage the ecosystem: Education systems should take a whole-of-government and multi-stakeholder approach to engage a broad set of actors to support student learning.

- Leverage institutional capacities to enable and/or continue distance learning. As remote learning is likely to continue even when schools reopen, ministries of education should use their prior experience with EdTech programs to equitably reach all students. This work entails identifying and preparing stakeholders, having an inventory of existing infrastructure and associated costs and benefits, and accounting for funding for setup and maintenance. At the same time, governments need to invest in remedial education to recover learning losses; thus, external financing is key to support the educational opportunities of students in low- and lower-middle-income countries, where public education budgets have been cut since the onset of the pandemic. Recognizing the COVID-19 emergency, the pandemic can be an opportunity to inspire and reimagine solutions to build back better education systems.

- Foster cross-country and multi-stakeholder collaboration approaches. As countries have experienced implementing remote learning programs at scale during the COVID-19 pandemic, it is critical to engage a wider ecosystem of allies within and among countries to allow governments to better respond to the circumstances and deploy remote learning channels faster without having to start from scratch. By fostering cross-country collaboration and partnerships with telecommunication operators, EdTech companies, or third-sector organizations, governments can effectively continue distance learning programs. Such collaborations may allow governments, teachers, and students to access high-quality curated learning materials through partnerships with content providers, increase learning time through partnerships with broadcasters, and access data without paying for the bandwidth through partnerships with telecommunication operators.

Be data-driven: Evidence-based decision-making within cultures of learning and experimentation, enabled by EdTech, leads to more impactful, responsible, and equitable uses of data.

- Monitoring and evaluation are key to understanding the effectiveness of the strategy, the learning outcomes and to troubleshoot: While this study has evidenced that the implementation of monitoring systems has been unequal across countries, it is still relevant to strengthen the governments' monitoring processes to understand students' progress, make the adjustments required, and be ready for continuous improvement when schools start to reopen. In addition to the collection of relevant data, education systems might need to consolidate their institutional capacities to process and effectively use the data gathered for supporting or guiding decision-making, as well as to set high standards for data protection and security concerning children, regulate access to educational records, and protect student privacy with regards to educational information.
- Opportunities to innovate formative assessments and large-scale examinations. The COVID-19 pandemic has altered the assessment landscape. Countries have revised or adjusted their systems to provide remote formative assessments, canceled or postponed large-scale examinations, and even transitioned to online assessments. As governments work to innovate the assessment solutions, they also have to ensure that these examinations meet certain criteria, such as validity, reliability, and fairness properties of a high-quality assessment. This is an opportunity to rethink how to conduct formative or large-scale assessments while schools are closed and even after they reopen.

Start! As stated in the approach report "Reimagining Human Connections," education systems need to accept that change is inevitable. Learning-by-doing and making adjustments in the process as a result of what is learned, is required. It is imperative to avoid replicating failures of pre-COVID-19 systems, but instead build stronger education systems and accelerated learning for all students. No plan will be perfect. But the risks of inaction are greater than the risks of action. As this study shows, from low resource settings to high income ones, countries are rising to this challenge and implementing strategies to support effective learning and guarantee that a generation of students is not lost due to the pandemic. These efforts have required creativity, innovation, planning, and investments from education systems at an unprecedented level, which will make them more resilient to future shocks.

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VII. PICTURES CREDITS

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VIII. GLOSSARY

Effectiveness: this study follows a holistic approach when referring to the term effectiveness. Thus effectiveness is not only related to learning outcomes, but also to the effect of remote education programs to increase student engagement, increase coverage and usage, and reduce implementation costs and time.

- Coverage: estimated share (%) of children/youth accessing each distance learning system.
- Engagement: effort students devote to activities focused on education, usually developed through interaction. Measures of engagement effectiveness are "Frequency of use," defined as the number of times students who access the learning delivery systems during a certain period, on average; and "engagement rate" or "effective time spent learning," defined as the amount of time students spend learning each time they use the delivery system, on average.
- Learning: knowledge or skills students acquire by the end of a particular assignment, class, course, or program, that helps students understand why that knowledge and those skills will be useful to them.
  - Formative assessments: implemented by teachers or schools to understand what is being learned by students and to use results as a feedback mechanism to adapt teaching and learning in the classroom, usually implemented during the period of instruction.
  - Summative assessments: implemented by teachers or schools as a means to provide individual grading to students, usually implemented at the end of a certain period of instruction.
  - Examinations: used to certify or select learners in a given grade or age for further schooling, training, or work.
  - Large-scale system-level assessments: provide feedback on the overall health of the system for a given group of learners.
  - Learning loss: specific or general loss of knowledge and skills, or reversals in academic progress, most commonly due to extended gaps or discontinuities in a student's education.

Curriculum adjustment: process of redefining competencies, subjects, contents, and skills that are more important for students to learn and/or acquire. This process is critical because governments might face constraints to implement the regular curriculum during a period of remote learning, including limited airspace in TV and radio channels, and lack of content repositories, among other limitations. There are different ways to prioritize the curriculum:

- Core subjects: process of selecting the main subjects for instruction. The selection of core subjects depends on the country and education level. Common core academic subjects could be language arts, mathematics, science, and history, among others.
- Multigrade content: situation in which one teacher has to teach many grades using the same content for all students at the same time. In the case of remote learning, the ministries of education might decide to group grades and deliver the same content to them.
- Content curation: sorting out the vast amounts of educational content and organizing them around a specific educational subject, grade, and or competency in a coherent way. In the context of remote learning during COVID-19, ministries of education partnered with organizations that produced educational content or with other governments to curate content.

Catch-up strategies: learning programs designed to help students to catch up to the pre-COVID-19 trajectory. Some of these strategies are remedial programs, accelerated learning programs, and the increase of class time:

- Remedial programs: strategies that target students with a poorer rate of academic progress and are generally

designed to give students the individual attention needed to build skills and confidence. Teachers using remedial learning strategies could use teaching methods that are outside the norm of general classroom techniques. Teachers must first identify the reasons behind the learning difficulties experienced by challenged learners, and then develop specific remedial learning strategies that target these difficulties.

- Accelerated programs: learning programs designed to be completed quickly through short, intensive, and rigorous phases of learning, in comparison to the conventional learning period of time. These programs generally target disadvantaged, overaged, out-of-school children and youth, particularly those who missed out on schooling or had their education interrupted due to poverty, marginalization, conflict, and/or crises.
- Increase class time: extension of school day and/or year for active learning.

Delivery systems or remote learning solutions: in the context of remote learning, the most common delivery systems are based on video, audio/radio, computer technologies, and/or printed material. A variety of such adaptations makes live transmission of lectures, demonstrations, and audiovisual resource materials possible, often in an interactive context.

- Multimodal delivery systems: remote learning programs that use a combination of printed materials, radio programs, TV, the internet, and/or mobile phones to deliver content.
- Coherence across systems: in this study, coherent delivery systems refer to the alignment of learning sessions, contents, and competencies delivered across systems. An example is when the learning sessions for mathematics in grade 2 have the same contents and competencies whether it is delivered through the TV, radio, or web. In the context of remote learning, it has been a challenge for countries to align contents across channels.

IX. EXHIBITS

EXHIBIT 1: STUDENTS AFFECTED BY SCHOOL CLOSURES IN SELECTED COUNTRIES

Country	Preprimary	Primary	Secondary
Afghanistan	24,220	6,544,906	3,063,889
Brazil	5,101,935	16,106,812	23,118,179
Cambodia	252,743	2,147,313	930,200
Cameroon	515,914	4,201,988	2,206,878
Estonia	56,724	85,617	82,646
Haiti	—	—	—
Kenya	3,199,841	8,290,450	3,204,379
Malawi	1,360,619	4,441,839	1,040,975
Mozambique	—	6,563,376	1,040,975
Nepal	958,127	3,970,016	3,463,763
Niger	186,772	2,768,305	786,582
Nigeria	2,020,668	25,591,181	10,314,769
Pakistan	8,636,383	22,931,395	13,357,618
Peru	1,642,768	3,592,865	2,779,973
Rwanda	226,706	2,503,705	658,285
Sierra Leone	90,701	1,369,738	492,140
Uruguay	132,580	304,309	356,952

Source: Own elaboration with data from UNESCO Global Monitoring of School Closures Caused by COVID-19.
Note: — = Not available.

EXHIBIT 2: CHANNELS IMPLEMENTED FOR LEARNING CONTINUITY

Country	Digital platforms	TV	Radio	Printed
Afghanistan	YES	YES	YES	—
Brazil	YES	YES	–	YES
Cambodia	YES	YES	YES	YES
Cameroon	YES	YES	YES	YES
Estonia	YES	—	—	—
Haiti	YES	YES	—	—
Kenya	YES	YES	YES	—
Malawi	YES	—	YES	YES
Mozambique	YES	YES	YES	YES
Nepal	YES	YES	YES	YES
Niger	YES	YES	YES	—
Nigeria (Edo)	YES	—	—	—
Pakistan	YES	YES	—	YES
Peru	YES	YES	YES	YES
Rwanda	YES	YES	YES	—
Sierra Leone	YES	—	YES	—
Uruguay	YES	YES	—	YES

Source: Own elaboration partly with data from UNICEF National Education Responses to COVID-19—UNICEF Global Tracker.
Note: — = Not available.

EXHIBIT 3: HOUSEHOLD ACCESS TO DEVICES AND CONNECTIVITY FOR REMOTE LEARNING

Country	Radio (%)	TV (%)	Mobile phones (%)	Internet (%)
Afghanistan	51	47	87	11
Brazil	96	62	93	60
Cambodia	66	40	87	40
Cameroon	46	56	67	23
Estonia	93	—	158	91
Haiti	31	48	76	33
Kenya	37	71	90	17
Malawi	11	33	51	17
Mozambique	26	36	63	21
Nepal	52	29	93	21
Niger	12	52	50	5
Nigeria	49	61	88	9
Pakistan	63	3	94	17
Peru	80	84	82	24
Rwanda	11	42	63	22
Sierra Leone	19	58	67	—
Uruguay	97	91	92	85

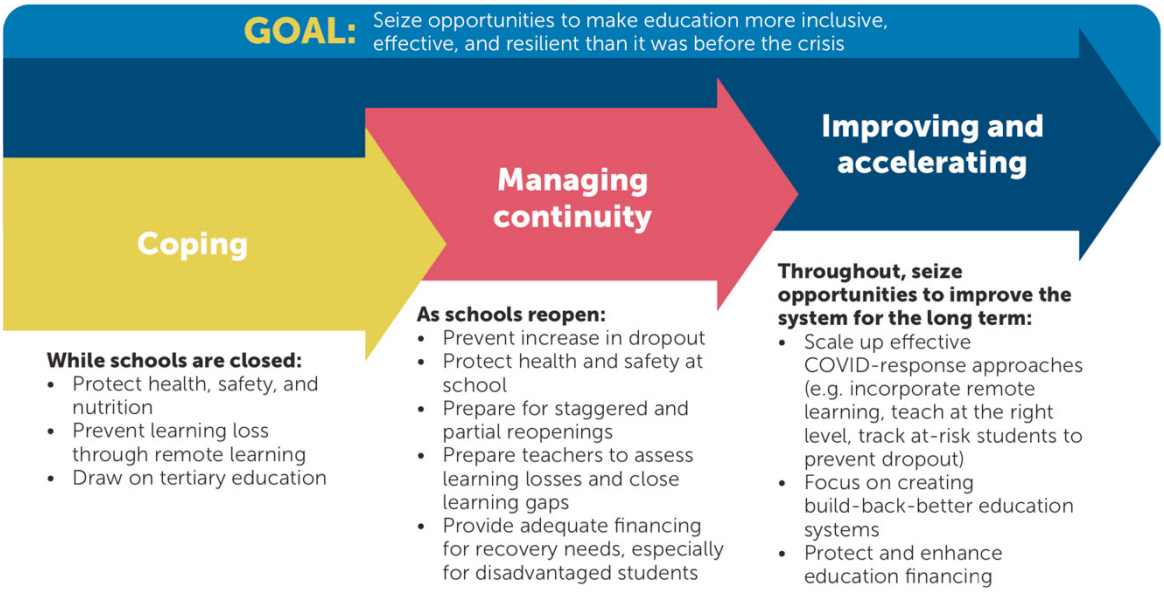
Source: Own elaboration with data from The World Bank TCdata360 from 2016 and UNICEF DHS, MICS, MIS surveys from 2012–2018.
Note: — = Not available.

EXHIBIT 4: INTERNATIONAL BANDWIDTH IN SELECTED COUNTRIES, IN MBIT/S

Country	2017	2018	2019
Afghanistan	47,000	75,163	93,677
Brazil	4,100,000		
Cambodia	173,452	314,621	396,383
Cameroon	15,280	22,486	20,280
Estonia	142,000		
Haiti	3,072	3,072	
Kenya	3,462,500	4,129,861	6,719,490
Malawi	9,300	9,614	9,614
Mozambique	47,116		78,503
Nepal	124,000	300,000	
Niger	7,399		
Nigeria	180,746	329,652	395,302
Pakistan	672,453	922,729	2,646,560
Peru	540,000		
Rwanda	23,080	25,060	37,065
Sierra Leone	12,427	14,339	26,301
Uruguay	258,741		

Source: Own elaboration with data from **ITU's statistics.**
Note: Mbit/s = Megabits per second.

EXHIBIT 5: THE THREE OVERLAPPING PHASES OF THE EDUCATION RESPONSE



Source: World Bank Group (Education)—The COVID-19 Pandemic: Shocks to Education and Policy Responses.

EXHIBIT 6: NATIONAL EDUCATION RESPONSES IN AFRICA AND THE MIDDLE EAST

Country	Coordinated mechanism	Multichannel	Monitoring	School reopen plan
Madagascar	YES	YES	YES	YES
Senegal	YES	YES	YES	YES
Botswana	YES	YES	YES	YES
Burundi	YES	—	—	—
Comoros	YES	—	—	—
Eritrea	YES	YES	—	—
Ethiopia	YES	YES	—	YES
Kenya	YES	YES	YES	YES
Lesotho	YES	YES	—	YES
Malawi	YES	YES	—	YES
Mozambique	—	YES	—	YES
Namibia	YES	YES	—	YES
Rwanda	YES	YES	YES	YES
Somalia	YES	YES	YES	YES
South Africa	YES	YES	YES	YES
South Sudan	YES	—	—	YES
Swaziland	YES	—	YES	YES
Uganda	YES	—	YES	YES
Tanzania	YES	YES	YES	YES
Zambia	YES	YES	—	YES
Zimbabwe	YES	—	YES	YES
Algeria	YES	YES	YES	YES
Egypt	—	YES	YES	—
Iran	YES	—	—	—
Iraq	—	YES	YES	YES
Jordan	YES	YES	—	YES
Lebanon	YES	YES	—	YES
Libya	YES	YES	—	YES
Morocco	YES	YES	YES	—
Oman	YES	YES	YES	YES
Palestine	YES	YES	YES	YES
Syria	YES	—	YES	YES
Tunisia	YES	YES	YES	YES
Sudan	YES	YES	YES	YES
Djibouti	YES	YES	YES	YES
Benin	YES	—	—	YES

Burkina Faso	YES	YES	YES	YES
Cameroon	YES	YES	YES	YES
Central Africa	YES	—	—	—
Chad	YES	YES	—	YES
Congo	YES	YES	YES	YES
Côte d'Ivoire	YES	YES	YES	YES
Congo	YES	YES	YES	YES
Equatorial Guinea	YES	—	YES	—
Gabon	YES	YES	YES	YES
Gambia	YES	YES	YES	YES
Ghana	YES	YES	YES	YES
Guinea	YES	YES	YES	—
Guinea-Bissau	—	—	—	YES
Liberia	YES	YES	YES	YES
Mali	YES	YES	YES	YES
Mauritania	YES	YES	—	YES
Niger	YES	YES	YES	YES
Nigeria	YES	YES	YES	YES
Sierra Leone	YES	YES	YES	YES
Total	**51**	**43**	**36**	**46**

Source: Own elaboration with data from UNICEF Global Tracker data as of May 1, 2020. Initiatives listed are governmental education responses.
Note: — = Not available.

EXHIBIT 7: CHANNELS FOR LEARNING CONTINUITY ACROSS AFRICA AND MIDDLE EAST

Country	Government platforms	Other platforms	SMS/social media	TV	Radio	Paper	Home visit
Madagascar	YES	—	YES	YES	YES	YES	—
Senegal	YES	YES	YES	YES	YES	YES	—
Botswana	YES	YES	YES	YES	YES	YES	—
Burundi	—	—	—	—	YES	—	—
Comoros	—	—	—	—	—	—	—
Eritrea	—	—	—	YES	YES	YES	—
Ethiopia	—	—	YES	YES	YES	YES	—
Kenya	YES	—	YES	YES	YES	YES	—
Lesotho	YES	—	YES	YES	YES	YES	—
Malawi	YES	—	YES	—	YES	YES	—
Mozambique	YES	—	—	YES	YES	YES	—
Namibia	YES	YES	YES	YES	YES	YES	—
Rwanda	YES	—	YES	YES	YES	—	—
Somalia	YES	—	YES	YES	YES	YES	—
South Africa	YES	—	—	YES	YES	—	—
South Sudan	—	—	—	—	YES	—	—
Swaziland	—	—	—	YES	YES	—	—
Uganda	YES	—	YES	—	—	—	—
Tanzania	YES	YES	—	—	YES	—	—
Zambia	YES	—	—	YES	YES	YES	—
Zimbabwe	—	—	—	—	YES	YES	—
Algeria	YES	—	—	YES	YES	—	—
Egypt	YES	YES	YES	YES	—	—	—
Iran	—	—	—	YES	—	—	—
Iraq	YES	—	YES	YES	YES	—	—
Jordan	YES	YES	YES	YES	—	YES	—
Lebanon	YES	—	YES	YES	—	YES	—
Libya	YES	—	YES	YES	—	—	—
Morocco	YES	YES	YES	YES	YES	YES	—
Oman	YES	—	YES	YES	—	—	—
Palestine	YES	YES	YES	YES	—–	—	—
Syria	—	—	—	YES	—	YES	—
Tunisia	YES	—	—	YES	—	YES	—
Sudan	YES	—	—	YES	YES	YES	—
Djibouti	YES	YES	YES	YES	YES	YES	YES
Benin	—	—	—	—	—	—	—

Burkina Faso	YES	YES	—	YES	YES	—	—
Cameroon	YES	YES	—	YES	YES	YES	YES
Central Africa	—	—	—	—	YES	—	—
Chad	YES	—	YES	YES	YES	—	—
Congo	–	–	–	YES	YES	YES	YES
Côte d'Ivoire	YES	—	YES	YES	YES	—	—
Congo	YES	—	—	YES	YES	YES	—
Equatorial Guinea	—	—	—	YES	YES	—	—
Gabon	YES	—	YES	YES	YES	YES	—
Gambia	—	—	—	YES	YES	—	—
Ghana	YES	YES	—	YES	YES	—	—
Guinea	—	YES	YES	YES	YES	—	—
Guinea-Bissau	—	—	—	YES	YES	—	—
Liberia	—	—	YES	—	YES	YES	—
Mali	YES	—	YES	YES	YES	YES	—
Mauritania	—	—	—	YES	YES	YES	—
Niger	YES	YES	YES	YES	YES	YES	—
Nigeria	YES	YES	YES	YES	YES	YES	YES
Sierra Leone	YES	—	YES	—	YES	YES	—
Total	**37**	**15**	**29**	**44**	**43**	**30**	**4**

Source: Own elaboration with data from UNICEF Global Tracker data as of May 1-2020. Initiatives listed are governmental education responses.
Note: — = Not available.

EXHIBIT 8: ACCESS TO DEVICES/CONNECTIVITY AND REMOTE LEARNING TOOLS ACROSS AFRICA AND MIDDLE EAST

Country	Government digital platform	Internet access (%)	SMS/ social media	Mobile access (%)	TV learning program	TV access (%)	Radio learning program	Radio access (%)
Senegal	YES	12.6	YES	96.0	YES	56.7	YES	65.8
Burundi	—	0.1	—	46.9	—	4.8	YES	36.9
Comoros	—	—	—	73.0	—	59.6	—	51.1
Eritrea	—	—	—	0	YES	13.2	YES	57.8
Ethiopia	—	2.9	YES	55.5	YES	13.8	YES	28.2
Kenya	YES	16.9	YES	90.1	YES	36.8	YES	70.6
Lesotho	YES	6.5	YES	90.2	YES	68.2	YES	51.6
Malawi	YES	6.2	YES	50.6	—	10.8	YES	33.0
Mozambique	YES	6.2	—	62.8	YES	25.5	YES	35.6
Namibia	YES	17.3	YES	88.5	YES	43.6	YES	68.4
Rwanda	YES	3.8	YES	62.6	YES	10.7	YES	42.0
South Africa	YES	37.3	—	95.7	YES	76.8	YES	60.8
Uganda	YES	6.2	YES	74.3	—	16.9	—	58.5
Tanzania	YES	4.1	—	96.3	—	98.0	YES	18.1
Zambia	YES	6.9	—	73.7	YES	36.6	YES	47.1
Zimbabwe	—	5.8	—	86.9	—	37.4	YES	42.8
Egypt	YES	36.8	YES	90.3	YES	97.5	—	31.1
Iraq	YES	—	YES	98.5	YES	98.6	YES	7.9
Jordan	YES	60.0	YES	97.6	YES	98.8	—	10.0
Palestine	YES	—	YES	49.0	YES	97.3	—	39.6
Tunisia	YES	28.8	—	95.6	YES	97.5	—	46.3
Sudan	YES	—	—	74.8	YES	39.9	YES	35.2
Benin	—	3.5	—	83.9	—	28.7	—	54.0
Burkina Faso	YES	3.2	—	93.9	YES	25.0	YES	60.4
Cameroon	YES	6.5	—	67.2	YES	45.6	YES	56.1
Chad	YES	2.7	YES	58.8	YES	7.7	YES	40.1
Congo, Rep	—	—	—	81.7	YES	46.9	YES	52.4
Côte d'Ivoire	YES	12.2	YES	92.2	YES	51.6	YES	48.6
Congo, Dem. Rep.	YES	—	—	39.1	YES	15.0	YES	42.6
Gabon	YES	9.7	YES	91.9	YES	83.4	YES	52.7
Gambia	—	8.5	—	97.3	YES	83.9	YES	69.3
Ghana	YES	29.0	—	90.4	YES	63.4	YES	65.3
Guinea	—	1.5	YES	89.2	YES	31.3	YES	54.4

Guinea-Bissau	—	—	—	91.0	YES	24.3	YES	72.5
Liberia	—	2.5	YES	62.6	—	22.0	YES	52.1
Mali	YES	6.7	YES	88.8	YES	42.6	YES	64.1
Mauritania	—	6.2	—	90.2	YES	39.7	YES	43.5
Niger	YES	—	YES	50.0	YES	11.5	YES	51.9
Nigeria	YES	8.5	YES	87.9	YES	49.1	YES	60.6
Sierra Leone	YES	—	YES	67.1	—	18.6	YES	58.4
Average %		**21.2**		**79.7**		**60.7**		**48.4**

Source: Own elaboration with data from The World Bank TCdata360 from 2016, UNICEF Global Tracker data as of May 1, and UNICEF DHS, MICS, MIS surveys from 2012–2018. Initiatives listed are governmental education responses.
Note: — = Not available.

EXHIBIT 9: NATIONAL EDUCATION RESPONSES IN EASTERN, PACIFIC, AND SOUTH ASIA

Country	Coordinated mechanism	Multichannel	Monitoring	School reopen plan
Cambodia	YES	YES	YES	YES
Marshall Islands	—	—	—	YES
Niue	—	—	—	YES
Korea	—	—	YES	—
Fiji	YES	YES	YES	—
Indonesia	YES	YES	YES	YES
Tonga	—	—	—	—
Lao PDR	YES	YES	YES	YES
Malaysia	YES	YES	YES	YES
Cook Islands	—	YES	—	YES
Micronesia	—	—	—	YES
Kiribati	—	YES	YES	YES
Myanmar	YES	YES	YES	YES
Nauru	—	—	—	YES
Palau	—	—	—	—
Solomon Islands	YES	—	—	—
Philippines	YES	—	YES	—
Samoa	—	YES	—	—
Tuvalu	—	—	—	YES
Papua New Guinea	YES	YES	—	—
Timor-Leste	YES	YES	—	YES
Sri Lanka	YES	YES	YES	YES
Pakistan	—	YES	YES	YES
Vanuatu	YES	YES	YES	—
Vietnam	YES	YES	YES	YES
Thailand	—	—	—	YES
Mongolia	YES	—	YES	YES
Afghanistan	YES	YES	YES	YES
Bangladesh	YES	—	—	—
Bhutan	YES	—	YES	YES
India	—	YES	YES	YES
Maldives	YES	YES	YES	YES
Nepal	YES	YES	YES	—
China	YES	YES	YES	YES
Total	**20**	**20**	**20**	**23**

Source: Own elaboration with data from UNICEF Global Tracker data as of May 1, 2020. Initiatives listed are governmental education responses.
Note: — = Not available.

EXHIBIT 10: CHANNELS IMPLEMENTED FOR LEARNING CONTINUITY ACROSS EASTERN, PACIFIC, AND SOUTH ASIA

Country	Government platforms	Other platforms	SMS/ social media	TV	Radio	Paper	Home visit
Cambodia	YES	YES	—	YES	YES	—	—
Marshall Islands	—	—	—	—	—	—	—
Niue	—	—	—	—	—	—	—
Korea	—	—	—	—	—	—	—
Fiji	—	YES	YES	YES	YES	YES	YES
Indonesia	YES	YES	YES	YES	YES	YES	YES
Tonga	—	—	—	—	—	YES	—
Lao PDR	YES	—	YES	YES	YES	—	—
Malaysia	YES	YES	YES	YES	—	—	—
Cook Islands	YES	YES	YES	—	—	—	—
Micronesia	—	—	—	—	—	YES	—
Kiribati	YES	YES	YES	YES	YES	YES	—
Myanmar	YES	—	YES	YES	YES	YES	—
Nauru	—	—	—	—	—	—	—
Palau	YES	—	—	—	—	—	—
Solomon Islands	—	—	—	—	—	YES	—
Philippines	YES	YES	—	—	—	—	—
Samoa	YES	YES	—	YES	YES	—	—
Tuvalu	YES	—	—	—	—	—	—
Papua New Guinea	YES	—	—	YES	YES	—	—
Timor-Leste	YES	—	YES	YES	YES	YES	—
Sri Lanka	YES	—	YES	YES	YES	YES	YES
Pakistan	YES	—	YES	YES	YES	—	—
Vanuatu	—	YES	YES	YES	YES	YES	—
Vietnam	YES	YES	YES	YES	YES	YES	YES
Thailand	—	—	—	—	—	—	—
Mongolia	YES	—	—	YES	—	—	—
Afghanistan	YES	—	YES	YES	YES	YES	—
Bangladesh	—	—	—	YES	—	—	—
Bhutan	—	—	—	YES	—	—	—
India	YES	YES	—	YES	—	YES	—
Maldives	YES	YES	YES	YES	—	YES	—
Nepal	YES	YES	—	YES	YES	YES	—

China	YES	—	YES	YES	—	—	—
Total	**22**	**13**	**15**	**22**	**15**	**15**	**4**

Source: Own elaboration with data from UNICEF Global Tracker data as of May 1, 2020. Initiatives listed are governmental education responses.
Note: — = Not available.

EXHIBIT 11: ACCESS TO DEVICES/CONNECTIVITY AND REMOTE LEARNING TOOLS ACROSS ASIA AND EASTERN EUROPE

Country	Government digital platform	Internet access (%)	SMS/ social media	Mobile access (%)	TV learning program	TV access (%)	Radio learning program	Radio access (%)
Cambodia	YES	7.0	—	87.2	YES	65.7	YES	40.0
Indonesia	YES	29.1	YES	89.0	YES	88.7	YES	22.9
Lao PDR	YES	5.2	YES	90.1	YES	84.7	YES	20.6
Kiribati	YES	—	YES	68.3	YES	3.0	YES	44.3
Myanmar	YES	3.0	YES	73.0	YES	57.1	YES	33.9
Madagascar	YES	4.7	YES	34.0	YES	17.1	YES	48.9
Philippines	YES	26.9	—	88.8	—	76.9	—	51.2
Papua New Guinea	YES	—	—	56.3	YES	12.6	YES	23.7
Timor-Leste	YES	—	YES	84.3	YES	40.2	YES	24.5
Tajikistan	YES	7.2	—	96.3	YES	98.0	—	18.1
Pakistan	YES	13.2	YES	93.9	YES	62.8	YES	6.4
Vietnam	YES	18.6	YES	92.5	YES	94.0	YES	18.7
Albania	YES	26.6	YES	96.9	YES	98.4	—	30.9
Azerbaijan	YES	54.6	YES	55.1	YES	95.0	—	46.7
Georgia	—	41.0	—	95.8	YES	95.9	—	5.4
Kazakhstan	YES	58.8	YES	96.6	YES	99.3	YES	7.3
Montenegro	YES	56.6	YES	98.4	YES	30.8	—	52.3
Thailand	—	33.8	—	96.1	—	96.6	—	56.8
Serbia	YES	51.8	YES	90.7	YES	98.7	—	77.7
Armenia	YES	46.6	YES	96.3	YES	99.5	YES	5.8
Turkey	YES	60.2	—	95.6	YES	97.9	—	0.0
Ukraine	—	43.0	YES	68.2	YES	97.2	—	71.2
Mongolia	YES	29.0	—	98.2	YES	94.6	—	6.2
Kyrgyzstan	YES	12.0	YES	98.3	YES	97.5	—	16.2
Moldova	YES	47.5	YES	0.0	YES	69.4	YES	72.0
Afghanistan	YES	—	YES	87.3	YES	50.7	YES	47.3
Bangladesh	—	6.5	—	94.8	YES	55.1	—	0.6
India	YES	15.3	—	90.4	YES	65.2	—	8.1
Maldives	YES	—	YES	98.7	YES	93.8	—	58.5
Nepal	YES	5.6	—	92.8	YES	51.6	YES	29.3
Average %		**23.2**		**80.2**		**67.6**		**42.7**

Source: Own elaboration with data from The World Bank TCdata360 from 2016, UNICEF Global Tracker data as of May 1, and UNICEF DHS, MICS, MIS surveys from 2012–2018. Initiatives listed are governmental education responses.
Note: — = Not available.

EXHIBIT 12: NATIONAL EDUCATION RESPONSES IN LAC

Country	Coordinated mechanism	Multichannel	Monitoring	School reopen plan
Argentina	YES	YES	YES	YES
Brazil	YES	YES	YES	YES
Colombia	YES	YES	—	YES
Costa Rica	YES	—	—	—
Cuba	—	YES	YES	YES
Dominican Republic	—	YES	YES	YES
Ecuador	YES	YES	YES	YES
El Salvador	—	YES	—	YES
Guatemala	YES	YES	YES	YES
Guyana	YES	YES	YES	YES
Haiti	YES	YES	YES	YES
Honduras	YES	—	—	—
Jamaica	YES	YES	YES	YES
Mexico	—	YES	—	YES
Panama	YES	YES	—	—
Paraguay	—	YES	YES	YES
Peru	YES	YES	YES	YES
Suriname	YES	YES	YES	YES
Uruguay	YES	—	YES	—
Venezuela	YES	YES	YES	YES
Total	**15**	**17**	**14**	**16**

Source: Own elaboration with data from UNICEF Global Tracker data as of May 1, 2020. Initiatives listed are governmental education responses.
Note: — = Not available.

EXHIBIT 13: CHANNELS IMPLEMENTED FOR LEARNING CONTINUITY IN LAC

Country	Government platforms	Other platforms	SMS/social media	TV	Radio	Paper	Home visit
Argentina	YES	—	—	YES	YES	YES	—
Brazil	YES	—	YES	YES	YES	YES	—
Colombia	YES	—	—	YES	YES	YES	—
Costa Rica	YES	—	—	—	—	—	—
Cuba	YES	—	—	YES	—	—	YES
Dominican Republic	YES	—	YES	YES	YES	YES	—
Ecuador	YES	—	YES	YES	YES	—	—
El Salvador	YES	—	YES	YES	YES	YES	—
Guatemala	YES	YES	YES	YES	YES	YES	—
Guyana	YES	—	YES	YES	YES	YES	—
Haiti	YES	—	YES	YES	YES	YES	—
Honduras	YES	—	—	YES	—	—	—
Jamaica	YES	YES	YES	YES	YES	YES	—
Mexico	YES	—	—	—	—	YES	—
Panama	YES	YES	YES	YES	YES	YES	—
Paraguay	YES	—	YES	YES	YES	YES	—
Peru	YES	—	—	YES	YES	—	—
Suriname	YES	YES	YES	YES	—	—	—
Uruguay	YES	—	—	—	—	—	YES
Venezuela	YES	—	YES	YES	YES	—	YES
Total	**20**	**4**	**12**	**17**	**14**	**12**	**3**

Source: Own elaboration with data from UNICEF Global Tracker data as of May 1, 2020. Initiatives listed are governmental education responses.

Note: — = Not available.

EXHIBIT 14: ACCESS TO DEVICES/CONNECTIVITY AND REMOTE LEARNING TOOLS ACROSS LAC

Country	Government digital platform	Internet access (%)	SMS/ social media	Mobile access (%)	TV learning program	TV access (%)	Radio learning program	Radio access (%)
Colombia	YES	37.9	—	95.4	YES	93.0	YES	75.5
Dominican Republic	YES	21.1	YES	0	YES	85.5	YES	55.9
El Salvador	YES	23.3	YES	93.1	YES	87.7	YES	75.5
Guatemala	YES	15.0	YES	87.5	YES	73.0	YES	70.3
Guyana	YES	24.2	YES	88.7	YES	88.2	YES	57.1
Haiti	YES	4.0	YES	75.9	YES	30.7	YES	48.0
Honduras	YES	19.6	—	85.7	YES	72.2	—	75.9
Mexico	YES	34.4	—	86.7	—	95.8	—	72.6
Panama	YES	41.6	YES	88.7	YES	86.3	YES	75.1
Paraguay	YES	24.6	YES	95.6	YES	89.6	YES	78.6
Peru	YES	23.5	—	81.9	YES	80.3	YES	83.9
Suriname	YES	19.0	YES	96.0	YES	90.1	—	70.7
Average %		**24.0**		**81.3**		**81.0**		**69.9**

Source: Own elaboration with data from The World Bank TCdata360 from 2016, UNICEF Global Tracker data as of May 1, and UNICEF DHS, MICS, MIS surveys from 2012–2018. Initiatives listed are governmental education responses.
Note: — = Not available.

EXHIBIT 15: STATUS AND PLANNING FOR SCHOOL REOPENING ACROSS AFRICA AND MIDDLE EAST

Country	Status	WASH kits	Risk com-munity	Monitor health	Mental health support	Monitor re-enroll	Outreach children no return	Recover learning time
Botswana	Open	YES	YES	YES	YES	YES	YES	YES
Burundi	Open	—	—	—	—	—	—	—
Comoros	Closed	—	—	—	—	—	—	—
Eritrea	Closed	—	—	—	—	—	—	—
Ethiopia	Closed	YES	YES	YES	YES	YES	YES	YES
Kenya	Closed	YES	YES	—	YES	YES	YES	YES
Lesotho	Localize	YES	YES	YES	YES	YES	YES	YES
Madagascar	Localize	YES	YES	YES	—	YES	YES	—
Malawi	Closed	YES	YES	YES	YES	YES	YES	YES
Mozam-bique	Closed	YES	YES	YES	YES	YES	YES	YES
Namibia	Closed	YES	YES	—	YES	—	—	YES
Rwanda	Closed	YES	YES	YES	YES	YES	YES	YES
Somalia	Closed	YES	YES	YES	YES	YES	—	YES
South Africa	Closed	—	YES	—	YES	YES	—	YES
South Sudan	Closed	—	YES	—	—	YES	—	YES
Swaziland	Closed	YES	YES	YES	YES	YES	YES	YES
Uganda	Closed	YES	YES	—	YES	YES	YES	YES
Tanzania	Open	YES	YES	YES	YES	YES	YES	YES
Zambia	Localize	YES	YES	—	YES	YES	YES	YES
Zimbabwe	Closed	YES	YES	—	YES	—	YES	YES
Algeria	Closed	YES	YES	YES	YES	YES	YES	YES
Djibouti	Closed	YES	YES	YES	—	YES	YES	YES
Egypt	Closed	YES	YES	YES	YES	YES	YES	YES
Iran	Closed	—	—	—	—	—	—	—
Iraq	Closed	YES	YES	—	—	—	—	—
Jordan	Closed	YES	YES	—	YES	—	YES	YES
Lebanon	Closed	YES	YES	YES	—	—	—	—
Libya	Closed	YES	YES	YES	YES	YES	—	—
Morocco	Closed	—	—	—	—	—	—	—
Oman	Closed	—	YES	—	—	—	—	YES
Palestine	Closed	YES	YES	YES	YES	YES	YES	YES
Sudan	Closed	—	YES	—	—	—	—	—

Syria	Closed	YES	YES	—	YES	—	—	YES
Tunisia	Closed	YES	YES	—	—	—	—	—
Yemen	Closed	YES	YES	—	YES	YES	YES	YES
Benin	Localize	YES	—	—	—	—	—	—
Burkina Faso	Localize	—	—	—	—	—	—	YES
Cameroon	Closed	YES	YES	YES	YES	YES	YES	YES
Central African Republic	Closed	YES	YES	—	YES	YES	YES	—
Chad	Closed	YES	YES	YES	YES	—	YES	YES
Congo, Rep.	Localize	YES	—	YES	—	—	YES	—
Côte d'Ivoire	Localize	YES	YES	YES	—	YES	YES	YES
Congo, Dem. Rep.	Closed	YES	YES	—	YES	YES	—	YES
Equatorial Guinea	Closed	—	—	—	—	—	—	—
Gabon	Closed	YES	YES	—	YES	—	—	YES
Gambia	Closed	YES	YES	YES	YES	YES	YES	YES
Ghana	Closed	YES	YES	YES	YES	YES	YES	YES
Guinea	Closed	—	—	—	—	—	—	—
Guinea-Bissau	Closed	—	YES	—	—	—	—	YES
Liberia	Closed	YES	YES	YES	YES	—	—	YES
Mali	Closed	YES	YES	—	YES	—	—	YES
Mauritania	Closed	YES	YES	—	—	—	—	—
Niger	Open	—	—	—	—	—	—	—
Nigeria	Closed	YES	YES	—	YES	YES	YES	YES
Sao Tome	Closed	YES	YES	—	YES	—	YES	YES
Senegal	Localize	YES	YES	YES	YES	YES	YES	YES
Si. Leone	Closed	YES	YES	—	—	YES	—	YES
Togo	Closed	YES	YES	—	YES	YES	YES	YES
Total		**44**	**47**	**24**	**35**	**31**	**30**	**40**

Source: Own elaboration with data from UNICEF Global Tracker (May 21, 2020 Survey) and UNESCO Global School Closures (June 6, 2020 data). Initiatives listed are governmental education responses.
Note: — = Not available.

EXHIBIT 16: STATUS AND PLANNING FOR SCHOOL REOPENING ACROSS ASIA AND EASTERN EUROPE

Country	Status	WASH kits	Risk com-munity	Monitor health	Mental health support	Monitor re-enroll	Outreach children no return	Recover learning time
Cambodia	Closed	YES	YES	—	—	—	—	—
China	Localize	YES	YES	YES	YES	YES	YES	YES
Indonesia	Closed	YES	YES	YES	YES	YES	YES	YES
Lao PDR	Localize	YES	YES	—	YES	YES	YES	YES
Malaysia	Closed	—	YES	YES	YES	YES	—	YES
Mongolia	Closed	YES	YES	YES	YES	—	—	YES
Myanmar	Closed	YES	YES	YES	YES	YES	YES	YES
Papua New Guinea	Open	—	—	—	—	—	—	—
Philippines	Closed	—	—	—	—	—	—	—
Thailand	Closed	—	YES	—	—	—	—	—
Timor-Les-te	Closed	YES	YES	YES	YES	YES	YES	YES
Vietnam	Open	YES	YES	YES	YES	YES	YES	YES
Albania	Localize	YES	YES	—	YES	YES	YES	YES
Armenia	Closed	—	—	—	—	—	—	—
Azerbaijan	Closed	YES	YES	—	YES	YES	—	YES
Georgia	Closed	—	—	—	—	YES	YES	—
Kazakhstan	Closed	YES	YES	YES	YES	YES	YES	YES
Kyrgy Republic	Closed	YES	YES	—	—	YES	—	—
Montenegro	Closed	—	—	—	—	—	—	—
Moldova	Closed	YES	YES	YES	YES	—	—	—
Romania	Closed	YES	YES	YES	YES	YES	YES	YES
Serbia	Closed	YES	YES	YES	YES	—	—	—
Tajikistan	Closed	—	—	—	—	—	—	—
Macedonia	Closed	—	—	—	—	—	—	YES
Turkey	Closed	—	YES	—	YES	—	YES	YES
Ukraine	Closed	—	—	—	—	—	—	—
Uzbekistan	Closed	YES	YES	—	YES	YES	—	YES
Afghanistan	Closed	YES	YES	YES	YES	—	—	YES
Bangladesh	Closed	YES	YES	YES	YES	YES	YES	YES
Bhutan	Closed	—	—	—	—	YES	—	YES
India	Closed	YES	YES	—	—	—	—	—
Maldives	Closed	YES	YES	—	YES	YES	YES	—
Nepal	Closed	—	—	—	—	—	—	—

Pakistan	Closed	—	YES	—	YES	—	—	—
Sri Lanka	Closed	YES	YES	YES	YES	YES	YES	YES
TOTAL		**21**	**25**	**14**	**21**	**18**	**14**	**19**

Source: Own elaboration with data from UNICEF Global Tracker (May 21, 2020 Survey) and UNESCO Global School Closures (June 6, 2020 data). Initiatives listed are governmental education responses.
Note: — = Not available.

EXHIBIT 17: STATUS AND PLANNING FOR SCHOOL REOPENING ACROSS LAC

Country	Status	WASH kits	Risk com-munity	Monitor health	Mental health support	Monitor re-enroll	Outreach children no return	Recover learning time
Argentina	Closed	YES	—	—	—	—	—	YES
Bolivia	Closed	—	—	—	—	—	—	—
Brazil	Closed	YES	YES	—	YES	YES	YES	YES
Colombia	Closed	—	—	—	—	—	—	YES
Costa Rica	Closed	—	—	—	—	—	—	—
Cuba	Closed	YES	YES	YES	YES	YES	—	YES
Dominican Republic	Closed	—	YES	—	YES	—	YES	—
Ecuador	Closed	—	YES	—	YES	YES	—	YES
Salvador	Closed	—	YES	YES	YES	YES	YES	YES
Guatemala	Closed	—	YES	YES	YES	YES	YES	YES
Guyana	Closed	YES	YES	—	—	YES	YES	—
Haiti	Closed	YES	YES	—	YES	—	—	YES
Honduras	Open	—	—	—	—	—	—	—
Jamaica	Closed	—	YES	YES	YES	—	—	—
Mexico	Closed	—	—	YES	—	—	—	—
Nicaragua	Closed	YES	YES	—	YES	—	—	—
Panama	Closed	—	—	—	—	—	—	—
Paraguay	Closed	YES	YES	—	YES	YES	YES	YES
Peru	Closed	YES	YES	—	YES	YES	—	—
Suriname	Localize	YES	YES	—	—	—	—	—
Uruguay	Localize	—	—	—	—	—	—	—
Venezuela	Closed	—	—	—	—	YES	—	—
TOTAL		**9**	**13**	**5**	**11**	**9**	**6**	**9**

Source: Own elaboration with data from UNICEF Global Tracker (May 21, 2020 Survey) and UNESCO Global School Closures (June 6, 2020 data). Initiatives listed are governmental education responses.
Note: — = Not available.

EXHIBIT 18: STUDENTS AFFECTED BY SCHOOL CLOSURES IN FIVE SELECTED COUNTRIES

Country	Pre-primary	Primary	Secondary
Brazil	5,101,935	16,106,812	23,118,179
Kenya	3,199,841	8,290,450	3,204,379
Nigeria	2,020,668	25,591,181	10,314,769
Peru	1,642,768	3,592,865	2,779,973
Sierra Leone	90,701	1,369,738	492,140

Source: Own elaboration with data from UNESCO Global Monitoring of School Closures Caused by COVID-19.

EXHIBIT 19: CHARACTERISTICS OF EDUCATION SYSTEMS IN FIVE SELECTED COUNTRIES

Country	Decentralization	Influence of private sector	Influence of third sector	Prior remote learning experience
Brazil	High	High	High	Medium
Kenya	Low	Medium	Medium	High
Nigeria (Edo)	Medium	High	Medium	High
Peru	Medium	Medium	Medium	Low
Sierra Leone	Low	Low	High	High

Source: Own elaboration.

EXHIBIT 20: CHANNELS IMPLEMENTED FOR LEARNING CONTINUITY

Country	Digital platforms	Mobile phones	TV	Radio	Printed
Brazil	YES	YES	YES	YES	YES
Kenya	YES	YES	YES	YES	—
Nigeria (Edo)	YES	YES	—	—	—
Peru	YES	YES	YES	YES	YES
Sierra Leone	YES	—	—	YES	PLAN

Source: Own elaboration with data from UNICEF National Education Responses to COVID-19—UNICEF Global Tracker.
Note: — = Not available.

EXHIBIT 21: HOUSEHOLD ACCESS TO DEVICES AND CONNECTIVITY FOR REMOTE LEARNING

Country	Radio (%)	TV (%)	Mobile phones (%)	Internet (%)
Brazil	62	96	93	60
Kenya	71	37	90	17
Nigeria	61	49	88	9
Peru	84	80	82	24
Sierra Leone	58	19	67	—

Source: Own elaboration with data from The World Bank TCdata360 from 2016 and UNICEF DHS, MICS, MIS surveys from 2012–2018.
Note: — = Not available.

EXHIBIT 22: CHECKLIST FOR OVERCOMING DIGITAL BARRIERS TO INCLUSION IN ONLINE LEARNING

Planning phase During this phase, programs should focus their efforts on reaching out to learners and better understanding their needs. Teams should test assumptions about learners, including their lived experiences and needs, as well as their broader context. These insights then need to inform decisions about logistics, budgets, staffing, and outcomes.	
	While assessing participant needs, identify participant technology or digital access barriers. IREX's Online Collaboration Guide for Facilitators includes a practical digital needs diagnostic and platform selection tool.
	While assessing participant needs, identify and include participants with varying abilities. Determine what accommodations they may need.
	Plan for participants who will access content via mobile. Consider what it will cost participants to access the material if they are paying for mobile data.
	Plan for participants who may become disconnected during a session or will need to access training content offline. Even with excellent planning, you may have some participants who are excluded from live participation.
	Test any apps you plan to use across platforms, operating systems, mobile and desktop, and in limited bandwidth environments.
	Check whether your resources are compatible with assistive readers and make needed adjustments.
	Support your participants to understand their digital security and privacy needs and select platforms that best meet those needs and your training's objectives. For example, participants may use a tool like Consumer Reports Security Planner to understand digital security needs and identify action steps. Me and My Shadow can help your participants evaluate privacy needs. PrivacyTools is a site that can help you select tools and platforms that protect privacy.
	Create a space for technology support, such as a technology practice session, troubleshooting guide, or live tech support option.

Engagement phase During this phase, programs should use resources from the planning phase, while actively modeling inclusion and fostering a tone that demonstrates that commitment. Regularly check in with participants and adjust how you provide prompts, present material, and describe tasks. Resources during this phase: • Youth Essential Skills Toolkit for training youth • Online Collaboration Guide for Facilitators	
	Confirm that participants can access technology and use required features or tools. Periodically ask participants whether they can access what they need.
	Establish various means of contributing to live training sessions and normalize such participation. Consider establishing signals as a means for participants to express agreement or vote. Design prompts for individual reflection that can be read, heard, and processed on individuals' own terms. Ensure captioning is used on slides and read aloud any text included on slides.
	Elevate the voices of marginalized groups or others who may be more reluctant to speak up. Notice who is speaking up and who is not and gently encourage more equal participation.
	Provide opportunities for live tech support or ways for participants to report technology issues during a session.
	Double-check that all language and images used in written and oral presentations use the most concise, direct, and effective message.
	Ensure that privacy and security settings are managed as needed to provide safety for all participants. Use storytelling and reflection as part of training sessions to make learning accessible. Refer to IREX's Power Learning Tool to incorporate step-by-step reflection into learning.
	If engaging external presenters, train them on the technology, the context, and your participants' needs and realities.

Reflection phase During this phase, your program can reflect on what did and did not work, review data from the training, and make changes. This is also an opportunity to continue communicating in an inclusive way. Make it clear that digital inclusion is a priority and provide clear, alternative ways for people to access and interact with materials outside of the live session.	
	Share recorded sessions, a session summary, accompanying presentations, and transcripts so participants can review them asynchronously if needed.
	Consider surveying all participants to better understand what digital access and participation barriers they faced.
	Follow up with participants who did not participate to understand why. If you are planning future training sessions, identify barriers and work to remove them.
	Reflect on what participation looked like and identify future improvements for accessibility and inclusion. For example, refer to IREX's Power Learning Tool to incorporate step-by-step reflection into learning.

Source: IREX. 2021. *Checklist for Overcoming Digital Barriers to Inclusion in Online Learning*. Available at: https://www.irex.org/resource/checklist-overcoming-digital-barriers-inclusion-online-learning.

EXHIBIT 23: OUTCOMES FOR EFFECTIVE REMOTE LEARNING IN SELECTED COUNTRIES

Country	Reach (%)	Engagement	Assessment
Brazil	74	Time spent: primary school students 1–2 hours per day, secondary school students 2–3 hours per day Engaging with material: 82% are engaging with the majority of the learning activities and 13% are engaging with part of them	Formative: feed-back through apps Diagnostic: plan for school reopen Summative: postponed
Kenya	22	—	Formative: optional for teachers
Nigeria (Edo)	29	—	Formative: interactive quizzes Diagnostic: plan for school reopen
Peru	86	Frequency of use: 4 days a week TV, 3 days a week radio, and 4 days a week 87% website (data from April, 2020) Satisfaction: 82% TV, 64% radio, and 87% website (data from May, 2020)	Formative: WhatsApp teacher-student feedback Diagnostic: plan for school reopen Summative: postponed
Sierra Leone	—	—	Diagnostic: plan for school reopen (July, 2020) Summative: postponed

Source: Own elaboration with data from interviews with policymakers and education experts from the selected countries.
Note: — = Not available.

EXHIBIT 24: BRAZIL CASE STUDY

Brazil's education system and the impact of COVID-19

The education system in Brazil is highly decentralized; local authorities have the autonomy to regulate and manage educational services within their region. Municipalities are responsible for providing early childhood and primary education, states are in charge of secondary education, and the federal government regulates private institutions. The Ministry of Education is responsible for providing technical and financial support to municipalities, states, and federal districts for their school systems. At the same time, the role of the private sector in education is more prevalent than in other countries in the LAC region. Prominent business leaders have invested in this sector or have educational foundations. These two characteristics, decentralization and the role of the private sector, have reflected how Brazil's education system responded to COVID-19.

According to UNESCO's Institute for Statistics data, as of June 2020, school closures affected approximately 45 million Brazilian students, from preprimary to secondary. School closures and the economic downturn will severely affect Brazil's education system. Learning gains that students previously achieved will be partially lost. In fact, researchers in the Global North estimate that students started the 2020 school year with less than 70% of learning gains in reading and less than 50% in math; Presumably, Brazilian students might be affected in a similar way. Additionally, children from disadvantaged backgrounds can be at risk of dropping out of school. In fact, a study conducted in Brazil suggests that adverse economic shocks to a family's income have a significant positive correlation with a child's repeating a grade and/or dropping out of school.

To mitigate the negative effects of school closures, Brazil's education system reacted in different ways. The National Council of Education (CNE—Portuguese acronym) and the Ministry of Education (MEC—Portuguese acronym) provided guidelines to schools for the planning and implementation of remote education. States such as São Paulo implemented remote learning initiatives and anticipated school holidays. Private institutions also responded; for example, since March 2020, the Center of Innovation for Education in Brazil (CIEB—Portuguese acronym) conducted monthly surveys to understand the reach and implementation of remote education initiatives of states and municipalities. This report will examine the effectiveness of the remote learning initiatives implemented by five different state education secretaries in Brazil: Amazonas, Espirito Santo, Mato Grosso do Sul, Minas Gerais, and São Paulo.

Inputs: initiatives to deliver an effective remote learning program

State education secretaries across Brazil responded to COVID-19 with different strategies, but with a similar aim: to reach all students with an equitable remote learning solution. Most of the states under analysis executed a remote education plan that considered the inputs needed for remote learning effectiveness: ensure multimodality of channels, create or leverage a repository of existing content, provide support to both teachers and parents, and install a strong communication system. Moreover, the National Council of State Education Secretaries (CONSED—Portuguese acronym) orchestrated collaboration spaces for state education secretaries to share best practices, learn from other states, and strengthen remote learning solutions. For example, the state of Minas Gerais developed its own mobile application after learning from São Paulo's mobile app experience; Amazonas shared its TV content repository, and states such as Espirito Santo curated that content and adapted it to their curriculum; and Mato Grosso do Sul shared its digital monitoring and evaluation practices with other states.

A **multichannel** remote education program was critical in a context where 40% of the population could not access the internet. Equally important was assessing the current infrastructure and resources to implement remote learning solutions that could be scaled up rapidly to reach all students. State education secretaries in Brazil delivered remote learning solutions through channels that were appropriate to the context. For example, Minas Gerais used three main channels: physical workbooks that came with guidelines on how to use the material; a TV learning program that delivered five hours of engaging content per day from Monday to Friday; and a mobile application that not only allowed students to access content but to communicate with teachers on a real-time basis. Moreover, five telecommunication operators agreed to zero-rate their Minas Gerais mobile application so

that students and teachers could access this EdTech application from any device, without paying for the bandwidth.

Depending on the state, the **content** was either curated or created. The case of the State Education Secretary of Amazonas was particularly interesting as the TV learning program was already operating since 2007 under the supervision of the Centro de Mídias de Educação do Amazonas. Since then, content that was aligned to the curriculum was delivered through satellite TV to reach remote rural communities of the state. Thus, Amazonas was able to leverage on a vast inventory of existing content for primary and secondary schools. During the COVID-19 pandemic, this remote learning program was adapted and delivered three hours of content per education level through three different TV channels. Also, content could be accessed through the mobile platform "Aula em Casa." In contrast, the State Education Secretary of Espirito Santo partnered with Amazonas to access and curate its inventory of TV learning content; Espirito Santo complement such TV content with Google Classroom, which has been used by teachers and students across the state since 2015.

State education secretaries have also been **supporting teachers** and **parents** in different ways. Most states gave general guidelines that stressed the importance of keeping contact with parents and students, as well as supplementing the remote education program delivered through different channels with learning activities. However, as of March 2020, a survey by Instituto Peninsula showed that only 50 percent of teachers considered that it was part of their role to interact remotely with students while schools were closed. A follow-up survey indicated that as of mid-May 2020, over 80 percent of teachers did not feel prepared to teach remotely. Moreover, as the remote education process was new for most teachers, some state education secretaries received reports that teachers were overwhelmed, for instance when supporting students from different backgrounds meant that they had to prepare targeted learning activities. While Mato Grosso do Sul responded by offering emotional support to teachers through courses from the Ayrton Senna Institute, the state of Minas Gerais responded by developing a mobile application to encourage teacher-student interaction for a limited amount of time after each class, thus, avoiding a situation in which students could contact teachers through WhatsApp or text message at any time of the day.

Outcomes: perceived effectiveness of Brazil's remote education program

While some state education secretaries, such as in Mato Grosso do Sul, **monitored** the adoption of remote learning programs implemented during COVID-19, there was still much to be done by states in terms of **evaluation** to better understand the main outcomes of the programs implemented. In the case of Brazil, private institutions complemented the government's monitoring and gave tools and data for decision-making. For example, CIEB conducted a monthly survey to understand the adoption of remote education initiatives by states and municipalities. Instituto Peninsula surveyed teachers across Brazil in two opportunities to understand their perceptions and responsibilities during the COVID-19 pandemic. Fundaçao Lemann (FL) conducted a study to better understand how students were accessing remote learning and what difficulties they were facing in the process. Using data gathered by both education secretaries and third-sector organizations, the perceived effectiveness and main outcomes of Brazil's remote education program are discussed below.

Regarding the program's **reach,** it was crucial for most education secretaries to ensure that all students, independently of their background had access to remote learning resources through any of the channels offered. According to CIEB's survey, as of May 2020, 85 percent of state education secretaries closed schools but continued offering remote learning, while only 60 percent of municipal education scretaries were offering remote education resources to students. A study by FL published in June 2020 showed that 74 percent of Brazilian students participated in a remote education program, but access was unequal. While in the south region 94 percent of students accessed remote learning resources, only 52 percent of students were doing so in the northwest region. Moreover, the higher the grade the learner was in, the higher the probability of accessing resources for remote education: while 86 percent of high-school students accessed remote learning, only 70 percent of those in preprimary and primary did so. Some states also directly monitored their program reach. For example, Minas Gerais reported that 97 percent of the student population downloaded or received the guidelines for remote learning and printed material to complement the TV learning programs. Mato Grosso do Sul reported that out of 91 percent of the student population had access to digital resources and printed material, 7 percent only had access to printed materials, and 2 percent did not access any kind of remote learning; yet it is unclear if data gathered by these secretaries were representative of the student population across the state.

In regard to the monitoring of **frequency of use and engagement rates,**[16] while most states were not able to track this information, **FL's** report gathered data from a representative sample of students. In relation to engagement rates, of those students who had access to remote education resources, on average 82 percent were doing the majority of the learning activities sent by schools and 13 percent were doing some of them. Concerning the frequency of use, results varied by education level. While most students in primary school dedicated between one and two hours per day to study remotely, most students in middle school and high school studied between two and three hours per day. However, students who could only access printed material dedicated less time to study than students who could access other devices for remote learning.

Several state education secretaries in Brazil planned to **assess** all students after schools reopened. The diagnostic evaluations are going to be developed and coordinated by **CAEd**, a center for public policy and evaluation of education. For instance, the state of **Espirito Santo** is planning to conduct two diagnostic evaluations: one to understand learning loss between the school year of 2019 and 2020 to plan for remedial education programs, as well as another one to understand what students learned while they were studying with remote learning resources during the COVID-19 pandemic. In the meantime, feedback and formative assessment processes need to be continued to ensure students learning. The State Education Secretary of Minas Gerais developed a formative assessment for teachers to use via a mobile application. This tool was used only in certain moments, to avoid teacher burnout

[16] Frequency of use is defined as the number of times students access the learning channel per week, on average. Engagement rate is defined as the amount of time students spend learning each time they use the channel, on average.

EXHIBIT 25: KENYA CASE STUDY

Kenya's education system and the impact of COVID-19

Kenya's Ministry of Education (MoE) has an active role in the formulation and execution of education policies and programs. Recently, the MoE developed the Kenya National Education Sector Strategic Plan (NESSP 2018–2022), with the mission of providing a competence-based, student-centered education for sustainable development. Among key reforms proposed in this plan are the development of a competence-based curriculum (CBC) and the alignment of national assessments to this new curriculum. The Kenya Institute for Curriculum Development (KICD) has had a critical role, not only in the development of this new curriculum but also in the creation and dissemination of educational programs through mass media, electronic learning, and distance learning. The active role of both the MoE and KICD in the design and implementation of curricular and educational programs reflected how Kenya's education system responded to COVID-19.

On March 15, 2020, Kenya's MoE announced the closure of the country's over 30,000 schools to mitigate the negative effects of COVID-19. According to UNESCO's Institute for Statistics data, as of June 2020, school closures affected almost 15 million Kenyan students, from preprimary to secondary. Prolonged school closures increased the gap in learning outcomes, which lead to learning losses, and increased school dropouts. In fact, researchers in the Global North estimated that students would start the 2020 school year with less than 70 percent of learning gains in reading and less than 50 percent in mathematics; presumably, Kenyan students would be affected in a similar way. The economic downturn also had an effect on students from disadvantaged backgrounds, as they were at risk of dropping out of school. Special attention was given to girls, as lack of education, poverty, and gender inequality were among the factors that put Kenyan girls at risk of getting married when they should be studying; in fact, it was reported that just in the county of Machakos, almost 4 thousand girls were impregnated during the COVID-19 pandemic period of March to June 2020.

To mitigate the negative effects of school closures, the MoE quickly developed the COVID -19 education response plan to ensure learning continuity, expand existing distance learning programs, train teachers to support remote learning, and implement programs targeting the most vulnerable children, among other initiatives. The MoE also worked with KICD on strengthening and scaling the already existing multimodal remote education program through radio broadcasting, the Edu TV channel, and the Kenya Education Cloud. As access to devices and connectivity needed for remote learning varied across the country—about 37 percent of households possessed a TV, 70 percent a radio, and only 17 percent had connection to the internet at home[17]—the multimodal strategy used all three media channels to deliver remote learning solutions that could be scaled up rapidly to reach as many students as possible while schools were closed.

Inputs: initiatives to deliver an effective remote learning program

A single approach to deliver remote education was challenging for Kenya's context. While Kenya's information and communication technology (ICT) authorities and the MoE made a concerted effort to embed digital skills in the education system through a Digital Literacy Program, there was still a gap to reach students who come from disadvantaged backgrounds. Thus, Kenya's MoE, KICD, and KSSHA cooperated to strengthen an existing remote education program while considering the following inputs: ensure multimodality of channels, improve the inventory of existing content, and provide support to teachers.

A **multichannel** remote education program was critical in a context where the majority could not access the internet. Equally important was to work with key partners and leverage existing resources to increase the remote education program reach. Kenya's MoE did all of these. Kenya's education system had previous experience with the delivery of remote learning programs through its three main channels. Since 1963, the government and Kenya's Broadcasting Corporation had been delivering radio learning programs. As part of the COVID-19 education

[17] TV, radio, and mobile penetration obtained from UNICEF data and internet penetration obtained from World Bank tcdata360.

response, this partnership was strengthened. Kenya's national radio learning program was carried by three national stations and 42 community radio stations to reach students in remote areas. The TV learning program existed since 2010 and was adapted and strengthened during the pandemic. Kenya's **EDU TV channel** was carried for free by all signal providers so that families that had a TV did not have to pay to see this channel. The **Kenya Education Cloud** (KEC) was also running pre-COVID-19. The platform was user-friendly, device-neutral, Web Light,[18] and elastic so that it could support an infinite number of users at the same time. Any student or teacher could access to KEC with their digital ID.

Kenya's MoE also had a vast inventory of existing **content** for the three main remote learning channels. During the COVID-19 pandemic, existing content was curated and new learning sessions were created in a more interactive format. Regarding radio, content for broadcast hours were extended from **four hours to eight hours per day**. Radio learning **programming ran from Monday to Friday** from 9:10 A.M. to 4:50 P.M., and each learning session lasted for approximately 20 to 30 minutes. Content for the Edu TV channel also was revised, improved, and adapted for students with special needs through captioning and sign language. TV learning **programming ran from Monday to Saturday**; it started at 6:40 A.M. with main guidelines and a schedule for the day; then learning sessions ran from 8:00 A.M. until 7:00 P.M., depending on the grade. Equally important, content was aligned to Kenya's competence-based curriculum under the supervision of KICD. In fact, planning, design, and production of content were held on **KICD's retreat center**, which had the capacity to host 72 teachers and staff member residents, as well as 1,000 nonresidents. During COVID-19, KICD assembled a team of expert teachers and staff who designed the learning sessions, performed quality assurance, and filmed and edited, among other key activities needed to deliver a quality remote learning program. This team stayed in KICD's accommodation facilities to prevent further spread of the virus.

KICD also started **supporting teachers** by providing guidelines and online training on the usage of Microsoft Teams for their virtual classrooms. Training started with just a small number of teachers, and in a second stage the number was increased to 350 teachers. Almost 3,000 teachers were trained through webinars, but KICD recognized that it was still a challenge to reach a significant proportion of Kenya's 300,000 teachers. Moreover, teachers could access with their digital ID to the **Kenya Education Cloud**, where they could find a curated list of resources and online learning sessions to strengthen their digital pedagogical skills required for remote teaching. However, the MoE and KICD understood that most teachers might neither have the devices required to access these resources nor the digital skills to ensure these digital resources were used appropriately, so increasing usage remained a challenge.

Outcomes: perceived effectiveness of Kenya's remote education program

The **Directorate of Quality Assurance** at Kenya's MoE was responsible for ***monitoring*** and ***evaluating*** standards in basic education institutions, as well as for gathering data of learning services provided to advise the minister in matters of quality assurance. However, Kenya's **strict lockdown measures** to avoid the spread of COVID-19 prevented the Directorate of Quality Assurance from gathering data systematically on the effectiveness of the remote learning program. Even with these difficulties, Kenya's MoE and KICD conducted **rapid online surveys** to understand the perceptions of the education community on the remote education program. As a complement to these efforts, the **Kenya National Bureau of Statistics (KNBS)** and **Uwezo** conducted surveys to understand the impact of COVID-19 in the education sector.

In regard to ***reach***, according to Kenya's **COVID -19 education response plan**, the strategy maximized its existing remote learning resources to provide education to as many students as possible, including thousands of refugees. In fact, the **UN Refugee Agency** reported that more than 100,000 children refugees in **Dadaab** learned with Kenya's radio learning program. According to **KNBS's Survey on Socio Economic Impact of COVID-19**, as of May 2020, approximately 19 percent of households with members who attended a learning institution (from preprimary to tertiary) used the TV for remote learning, 15 percent the radio, 12 percent a digital site, and 12 per-

[18] "Web Light" is a lighter and faster web page technology that appears for people searching on slow mobile connections.

cent printed material. However, about 25 percent of households did not use any method to learn at home. Similarly, according to Uwezo's report **"Are our children learning?,"** only 22 percent of school-going children in Kenya accessed digital resources for remote learning. Of these children, 42 percent access through a TV learning program, 27 percent through WhatsApp, 19 percent through a radio learning program, and 10 percent downloaded materials from the Kenya Education Cloud. Uwezo's report highlighted that the main challenges that families faced to access remote education were related to lack of financial resources, electricity, internet connectivity, and devices required for distance learning such as TV, radio, and/or mobile phones.

To ensure the quality of content developed as a way to increase **engagement** and **satisfaction,** all content creation, production, and delivery were conducted by the institution responsible for the curriculum development in the country—KICD. In contrast to results provided by KNBS and Uwezo's surveys, **KICD's rapid online survey** found that 70 percent of respondents watched a TV learning program, 60 percent listened to a radio lesson, and 30 percent accessed the Kenya Education Cloud. Although this rapid online survey provided insights to find gaps and improve the remote education program, Kenya's ministry officials were not certain about the representativeness of the sample. Moreover, while one of the main objectives of Kenya's remote learning program was to keep students engaged, the MoE still did not have enough information related to engagement, effectiveness, and satisfaction rates of this remote education program.

The MoE planned to install a **monitoring and evaluation system** to **assess learning** once schools re-opened, as well as to track attendance and implement re-enrollment campaigns. As in most countries around the globe, the COVID-19 pandemic exposed the inequalities of Kenya's education system; officials from the **Kenya National Union of Teachers (KNUT)**, as well as from the MoE, KSSHA, and KICD recognized the urgent need to close that gap. These institutions also agreed that once schools reopened, teaching would start from where it stopped to avoid putting children who were not able to access remote learning at a disadvantage. In the meantime, KICD took advantage of school closures to expand the remote learning program reach, test what worked and what did not, and strengthen the content delivered through all three platforms to ensure all educational programs created remained as an alternative way of learning.

EXHIBIT 26: NIGERIA (EDO) CASE STUDY

Nigeria and Edo's education system and the impact of COVID-19

Nigeria's education system has a three-layer structure: first, Nigeria's Federal Ministry of Education (MoE) and the Universal Basic Education Commission (UBEC); second, the states ministries of education (SMoEs) and State Universal Basic Education Boards (SUBEBs); and, third, the Local Government Education Authorities (LGEAs). As the education system is decentralized, the 36 SMoEs and SUBEBs are responsible for managing and supervising schools. Institutions at these three levels face the challenge of having over 13 million children out of school, which is about 20% of the total out-of-school children population in the world. These two characteristics, decentralization and the challenge of reaching every child and not just those enrolled in school, reflected Nigeria's education response to COVID-19.

According to UNESCO's Institute for Statistics data, as of June 2020, school closures prevented about 38 million students **(from preprimary to secondary)** to continue going to school. In order to prevent further spread of COVID-19, Nigeria's MoE made the decision to close all schools in mid-March 2020. However, prolonged school closures increased the achievement gap, lead to learning loss, and increased school dropouts. In fact, researchers in the Global North estimated that students would start the 2020 school year with less than 70 percent of learning gains in reading and less than 50 percent in math. Presumably, Nigerian students would be affected in a similar way. The economic downturn also affected students from disadvantaged backgrounds, as they were at risk of dropping out of school. Special attention had to be given to girls, as there was a constant threat to schooling, emanating from insurgent activities and attacks on schools that especially targeted Nigerian women and girls.

To mitigate the negative effects of school closures, Nigeria's MoE and UBEC organized a Task Team and developed a response plan to COVID-19. At the same time, states across the country implemented remote learning programs to mitigate learning loss. The case of Edo state is particularly interesting. Edo launched Edo-BEST@Home, an extension of the Edo Basic Education Sector Transformation (Edo-BEST) program, a public-private partnership (PPP) between the Edo State SUBEB, the World Bank, and Bridge International Academies. The remote learning program was supported with mobile tutors and enabled students to learn from resources that could be downloaded for free from an online repository while at home.

Edo state has a population of over 4 million people (one-half of whom are under 30 years old). Access to devices and connectivity needed for remote learning varied across the state. According to data from the Demographic and Health Survey, 46 percent of households possessed a radio, 69 percent a television, 91 percent a mobile phone. The structure of the Edo-BEST@Home program took these constraints into consideration by focusing on delivering scientifically-based content and learning activities through mobile phones. The program aimed to offer this remote learning solution not only to government schools that were already benefitting from Edo-BEST, but to every student in the state.

Inputs: initiatives to deliver an effective remote learning program

As the government announced school closures, the Edo-BEST team gathered to develop a homeschooling platform to enable students across the state to learn from interactive resources while at home. The initiative was planned considering Edo's infrastructure challenges and contemplating the inputs needed to implement an effective remote education program: ensure delivery of content through different platforms, leverage an inventory of existing content, make the program accessible to all students, and provide support to both teachers and parents.

A **multichannel** remote education program was critical in a context where the majority could not access the internet. However, Edo-BEST officials deliberately avoided creating radio and TV learning programs as to tracking participation levels and engagement through one-way delivery methods was challenging. Instead, they partnered

with a major telecom to make the audio lessons available via a toll-free line. Doing so had the potential to expand access since data indicated that 91 percent of families had a phone. Moreover, given the high penetration rate of mobile phones, the task team decided to focus on delivery platforms that could be accessed easily from mobile phones as well as to leverage on those that were already being used by students and teachers within the state. The delivery methods that were implemented combined WhatsApp, interactive text messages, and the Edo-BEST@Home **web repository**. Through these channels, students and teachers accessed **interactive audio lessons**, **digital self-study activity packets**, **digital storybooks**, **mobile interactive quizzes**, and **virtual classrooms**. Moreover, **MTN, a telecommunication operator** in the state, agreed to **zero-rate** Edo-BEST@Home digital resources so that students and teachers could access all educational resources available without paying for the bandwidth.

Prior to COVID-19, Edo-BEST already had a rich inventory of existing **content,** such as teacher-guided student practice exercises, reading activities, conceptual mathematics practice, and rigorous lessons aligned to the Nigerian curriculum. All these learning activities and content were strengthened, digitalized, and adapted for a remote learning environment and were readily available through the Edo-BEST@Home site for free. Therefore, students had access to four hours of **interactive audio lessons** that aligned to the Edo-BEST curriculum and that included stories, nonfiction passages, mathematics instruction and practice, songs, and games to provide students with an engaging learning experience. Also, students could access **digital self-study activity packets** that included practice problem sets for different courses and education levels to help students progress through the core topics of the Edo curriculum. Finally, Edo's remote learning program also made **digital storybooks** available for students to practice their reading comprehension, and enjoy stories that were accessible for every age group.

Edo-BEST also **supported teachers** and **parents.** Before COVID-19, more than 11 thousand teachers and school leaders had already gone through a **pedagogical and digital training program**. Thus most teachers were already equipped with pedagogical and technical skills to support students remotely while schools were closed. Moreover, the already existing coaching program for teachers were strengthened and adapted to be delivered remotely. For example, learning and development supervisors and quality assurance officers coached teachers and supported them while they were using Edo-BEST@Home platform and the **virtual classrooms**. Support was also provided for caregivers. Teachers contacted parents as soon as the government announced school closures to maintain personal contact, deliver learning materials, and provide remote support to ensure children continue learning. Moreover, Edo-BEST@Home digitized **learning guides** that included short lessons that could easily be led by an older member of the household, along with targeted practice and answer keys. These guides were adapted to the education level and the local curriculum. Also, a virtual helpdesk was set up to allow both teachers and parents to ask questions or request specific support.

Outcomes: perceived effectiveness of Edo's remote education program

Edo-BEST already had a **monitoring** and **evaluation** system in place prior to the COVID-19 pandemic. Since 2018, the program leveraged modern digital technologies to conduct real-time monitoring of learning inputs, attendance, and learning outcomes. Edo-BEST has a **quality assurance team** that is in charge of gathering data to make evidence-based decisions, providing feedback for continuous improvement of the teaching–learning processes, and monitoring the effectiveness of the program. For example, leadership development officers visited schools every two weeks to coach teachers, and quality assurance officers visited schools once every three weeks to ensure operations were running smoothly. During the COVID-19 pandemic, Edo-BEST leveraged their already existing quality assurance team to monitor and evaluate the Edo-BEST@Home remote learning experience. This team went beyond measuring the remote program's reach and made an effort to better understand student's engagement and assess learning.

Regarding **reach,** the Edo-BEST@Home program currently operates approximately 900 out of Edo's 1,000 primary schools, and about 7,000 virtual classrooms out of 9,000 actual classrooms were created to deliver remote education. The remote learning program was reaching approximately 29 percent of the Edo-BEST primary school student population. However, it remained a challenge to better understand what percentage of students were accessing and taking advantage of each of Edo-BEST@Home's resources—**interactive audio lessons**, **digital self-study**

activity packets, digital storybooks, mobile interactive quizzes, and virtual classrooms. It was also critical to identify those students who were not accessing these resources to offer them alternative learning solutions.

The Edo-BEST Quality Assurance team initially attempted to track **engagement** and **satisfaction** by randomly selecting virtual classrooms and observing the remote teaching and learning processes. Later on the team elaborated a comprehensive survey that tracked information such as frequency of use, engagement rates, parent support, and perceived effectiveness of teaching and learning in the virtual classroom.[19] While one of the main objectives of Edo's remote learning program was to keep students engaged, the quality assurance team still did not have sufficient information to measure engagement, effectiveness, and satisfaction rates of this remote education program. The EdoBEST team planned to execute a study to measure the impact of the EdoBEST@home program once pupils return to school.

For the Edo-BEST@Home program to be successful, the **feedback** and **formative assessment** processes were key elements to complement the content delivered through the main channels, such as the audio guides and the digital self-study packages. Teachers were supposed to answer students' doubts through the virtual classrooms, grade and provide feedback to students' homework, and communicate with both students and parents through phone calls, text messages, and WhatsApp. While several education systems successfully followed similar formative assessment approaches, the Edo-BEST@Home program went beyond that and developed mobile interactive quizzes for students to use at home every day. Any student could access these quizzes at any time during the day by sending a text message to the Edo-BEST@Home Interactive Quiz WhatsApp group, and choosing the grade and subject. Quizzes usually had five multiple-choice questions, and once a student answered a question, they received automated feedback on the answer given. These automated quizzes, along with the constant feedback provided by teachers, allowed students to retain what they learned while they practiced a wide range of skills. This formative assessment process needs to be continued, strengthened, and monitored to ensure students were actually learning through this process.

[19] Frequency of use is defined as the number of times students access the learning channel per week, on average. Engagement rate is defined as the amount of time students spend learning each time they use the channel, on average.

EXHIBIT 27: PERU CASE STUDY

Peru's education system and the impact of COVID-19

The education system in Peru is decentralized; local authorities have the autonomy to regulate and manage educational services within their region. Over 200 Local Education Units (UGEL—Spanish acronym) are responsible for providing early childhood, primary, and secondary education for all public schools, as well as for giving support for private schools within their location. Twenty-six Regional Directions of Education (DRE—Spanish acronym) implement educational policies aligned within their region and oversee UGELs. The Ministry of Education (MINEDU—Spanish acronym) is responsible for formulating national education policies such as the Teacher Reform Law, as well as for supervising and evaluating its execution. MINEDU also provides technical and financial support for DREs and UGELs. In practice, MINEDU has had an active role in designing and executing educational programs such as the high performing schools network (COAR—Spanish acronym) and the full-time secondary school program (JEC—Spanish acronym). This active role in the design and implementation of educational programs has reflected the ways in which Peru's education system responded to COVID-19.

From the health perspective, Peru was one of the most affected countries by COVID-19 in South America, a situation that also impacted the education sector. According to UNESCO's Institute for Statistics, as of June 2020, preprimary and secondary school closures affected approximately 8 million Peruvian students. A survey conducted in May by the Monitoring and Evaluation Unit (M&E) at MINEDU showed that 70 percent of parents reported being unwilling to send their children to schools if they reopened between July and August 2020. Prolonged school closures increased the achievement gap and affected student learning, as learning gains that students achieved were partially lost. Researchers in the Global North estimated that students would start the school year with less than 70 percent of learning gains in reading and less than 50 percent in math. Presumably, Peruvian students would be affected in a similar way. The economic downturn also affected students from low- and middle-income backgrounds. On the one hand, parents considered shifting children from private to public institutions—MINEDU created a platform to facilitate the transition from private to public schools and received 110,000 requests in only two weeks. On the other hand, children from disadvantaged backgrounds could be at risk of dropping out of school. In fact, a study conducted in Peru suggested that the economic situation, especially in low-income families, was a determinant factor of school dropout.

To mitigate the negative effects of school closures, MINEDU reacted quickly by planning, developing, and launching Aprendo en Casa (AeC), a comprehensive multimodal strategy to deliver remote learning at scale in less than two weeks. As access to devices and connectivity needed for remote learning varied across the country—about 80 percent of households possessed a TV, 84 percent a radio, and only 24 percent had connection to the internet at home[20]—the multimodal strategy used all three media channels to deliver remote learning solutions that could be scaled up to reach all students while schools were closed.

Inputs: initiatives to deliver an effective remote learning program

To implement a remote education program aimed at reaching all students, a team at MINEDU gathered to assess the current capacity and resources required for this program. The initiative considered the following inputs needed to implement an effective remote education program: ensure multimodality of channels, create an inventory of existing content, make the program accessible to students from disadvantaged backgrounds and those with disabilities, and provide support to both teachers and parents.

A **multichannel** remote education program was critical in a context where the majority could not access the internet. MINEDU designed a program to deliver content through four channels: TV, radio, the internet, and printed material by leveraging existing partnerships with TV Peru and Radio Nacional, the government's televi-

[20] TV, radio, and mobile penetration obtained from UNICEF data and internet penetration obtained from World Bank tcdata360.

sion and radio platforms, to use their infrastructure. Also, with the support of DREs and UGELs, new partnerships were developed with over 1,100 local radios to reach students in remote areas. Although the ministry already had PeruEduca, an online training and content repository platform, MINEDU's Department of Educational Technology developed a mobile-responsive digital platform from scratch to deliver AeC content at scale. This new platform supported an unlimited number of users at the same time and was Web Light[21] so that users could access its resources even in areas with low bandwidth. Moreover, telecommunication operators agreed to zero-rate AeC's core digital site so that students, parents, and teachers could access all educational resources available, from any device, without paying for the bandwidth.

Existing **content** was curated by a pedagogical team at MINEDU. This team also curated external content that third-party organizations such as Plaza Sesamo (Mexico) and Paka Paka (Argentina) shared for free.[22] AeC's team also worked to broadcast and scale up nonacademic programs that proved to be effective, such as Choosing a Better Future and Expand your Mind. However, most contents were created from scratch by a team of pedagogical experts from the Department of Basic Education. Since mid-March 2020, this team developed lesson plans and coordinated the production for AeC's multimodal strategy. These lesson plans were aligned with the National Curriculum and the education level. As Peru has a competency-based curriculum, content could be flexible as long as students got the competencies required for their education level. This flexibility was key because it allowed the ministry to both develop its own content and curate content from other producers. Equally important, TV learning sessions were supported with sign language, the web was adapted for students with special needs, and the radio content was delivered in nine native languages.

MINEDU **supported teachers** and **parents.** Teachers received general guidelines that stressed the importance of observing learning sessions through the channel of their preference, communicating with students and parents, and subscribing to online learning courses through PeruEduca, among other activities. In return, teachers informed UGELs about students' progress. Families also received general recommendations online and via weekly SMS on how to use the different learning channels and how to support children. Equally important, caregivers and students received constant support from teachers, mainly through WhatsApp, to complement the remote learning experience. The whole program was constantly communicated to ensure parents and students had the information needed during the distance learning period. Key messages to support the execution of the remote education strategy were communicated through various channels. For example, guidelines for remote learning and weekly schedules for the week of June 15–19, 2020, could be found in AeC's main website, social media, newspapers, TV, and radio. Moreover, principals and teachers received constant communication, not only through the mentioned channels but also through text messages. As the education system was decentralized, DREs and UGELs were the institutions responsible for maintaining constant communication with school principals and teachers. For example, Cajamarca, a north Andean region, communicated with all principals on a weekly basis; results of the communication process were available for anyone to access through a website.

Outcomes: perceived effectiveness of Peru's remote education program

The office of **Monitoring & Evaluation** at the ministry, with the support from Innovations for Poverty Action (IPA), regularly supervised the adoption and effectiveness of the AeC program with principals, teachers, and parents through phone calls once a month. More than 37,000 members of the education system were surveyed between March and June of 2020. Phone calls gathered information related to AeC's reach, channels used by students to access remote learning, support from teachers to students, and satisfaction with content and platforms, among other information. Results of the monitoring process were readily available for anyone to access through an interactive site.

A first key indicator to track effectiveness was **reach.** For MINEDU, it was key to ensure that all students, independently of their background, could access AeC's remote learning resources. This objective was challenging to

[21] "Web Light" is a lighter and faster web page technology that appears for people searching on slow mobile connections.
[22] MINEDU is also partnering with Mexico's Secretary of Public Education to access its TV learning content.

achieve as households' access to resources required for remote learning was highly unequal; for example, while almost 99 percent of urban homes had access to electricity, 30 percent of rural households lacked access to electricity, 20 percent did not have a radio, and 40 percent did not have a mobile phone.[23] Considering these challenges, AeC's multimodal strategy reached over 85 percent[24] of students. In April 2020, 74 percent of these students accessed AeC's remote learning through TV, 17 percent by radio, and 19 percent used AeC's website. For students that could not access AeC's resources, UGELs, in coordination with local communities, developed different initiatives, such as **retransmitting radio content** through powerful loudspeakers in community centers where children could attend while social distancing. Although reach was a key indicator to understand the students that had access to AeC, it was just a first step toward comprehending remote learning effectiveness.

A second step for MINEDU was to track **frequency of use** and **engagement rates.**[25] According to MINEDU's **M&E Unit survey**, during April 2020, students accessed remote learning through TV four days a week, the radio three days a week, and the website four days a week. Although it was a challenge to track engagement rates for each channel, MINEDU tracked satisfaction from both parents and students. From the parent's perspective, from a survey conducted in June 2020, 67 percent were satisfied with the content and delivery of remote learning through TV, 57 percent with the radio learning program, and 80 percent with AeC's website. In the case of students, 82 percent were satisfied with the TV learning program, 67 percent with the radio one, and 86 percent with the content and learning materials that they accessed from the AeC's website.

As most of the remote learning channels used in Peru were based on one-way education,[26] it was critical to complement these resources with **feedback** and **formative assessments.** MINEDU's pedagogical team hypothesized that just by providing engaging content through a one-way approach was not going to be as effective as ensuring regular interaction with the students. **Teachers needed to communicate and provide feedback** to students and their families through other means, including phone calls, text messages, and social media. According to MINEDU's **M&E Unit survey conducted in June** 2020, 85 percent of students and parents received support from teachers at least once in the previous week. According to the data gathered in June 2020, 97 percent of teachers who contacted parents requested their students to complete and send their homework every other day. Students completed those activities and sent them back to teachers mainly through WhatsApp. According to this survey, of those teachers who contacted parents and requested students to complete the learning activities, 93 percent ended up either grading students' homework or providing detailed feedback. This feedback and formative assessment process needed to be continued and strengthened to ensure students learned through this process.

[23] Access to electricity, TV, radio, and mobile penetration obtained from **UNICEF data**.
[24] MINEDU's M&E Unit survey estimated that 95 percent of students were accessing AeC's resources. This percentage was adjusted to 85 percent because in April's 2020 survey, 9 percent of families were not aware of AeC (0.95*0.91 = 0.86), and there was a **lower response rate in rural areas**.
[25] Frequency of use is defined as the number of times students access the learning channel per week, on average. Engagement rate is defined as the amount of time students spend learning each time they use the channel, on average.
[26] One-way remote education methods are those such as printed materials, and broadcast of radio and television.

EXHIBIT 28: SIERRA LEONE CASE STUDY

Sierra Leone's education system and the impact of COVID-19

After passing through the Ebola pandemic, Sierra Leone's Ministry of Basic and Senior Secondary Education (MBSSE) demonstrated that rapid improvements in education were possible, but structural challenges needed to be urgently addressed, such as low qualifications among the existing teacher workforce and poor learning outcomes. The MBSSE responded by developing an Education Sector Plan in 2017 to address those challenges. Moreover, the government also decided to establish the Teaching Service Commission (TSC), an independent body in charge of teacher recruitment, development, and management. The MBSSE and the TSC had a critical role in the planning and execution of the remote learning programs during both the Ebola and COVID-19 pandemics. Moreover, Sierra Leone's government actively requested support from third-sector organizations and the private sector to respond rapidly to the pandemics. These three characteristics, the prior experience with the Ebola pandemic, the active role of the MBSSE and the TSC, and the collaboration with third-party organizations, reflected Sierra Leone's education response to COVID-19.

According to UNESCO's Institute for Statistics data, as of June 2020, preprimary and secondary school closures affected almost 2.8 million Sierra Leonean students. Prolonged school closures increased the achievement gap, led to learning loss, and increased school dropouts. In fact, researchers in the Global North estimated that students would start the 2020 school year with less than 70 percent of learning gains in reading and less than 50 percent in math; presumably, Sierra Leonean students would be affected in a similar way. The economic downturn also had an effect on students from disadvantaged backgrounds, as they were at risk of dropping out of school. During the Ebola pandemic, schools were closed for almost nine months, and a study by Save the Children showed that 43 percent of children had to work to support their families in activities such as collecting firewood, mining, and driving motorbikes. Girls reported having to walk long distances and feeling scared of abuse; in fact, though teenage pregnancy was already high before Ebola, it increased by 65 percent due to the socioeconomic conditions imposed by the pandemic.

To mitigate the negative effects of school closures, the MBSSE quickly developed the COVID-19 education emergency response plan and an Education Emergency Taskforce (EET) to support learning continuity during school closures, expand existing distance learning programs, train teachers to support remote learning, execute targeted communication campaigns, and prepare schools for reopening, among other key initiatives. As access to devices and connectivity needed for remote learning varied across the country—about 19 percent of households possessed a TV, 58 percent a radio, and 67 percent a mobile phone[27]—the remote learning strategy had to consider delivering content through channels that could be scaled up rapidly to reach as many students as possible while schools were closed.

Inputs: initiatives to deliver an effective remote learning program

In April 2020, the MBSSE established the EET to mitigate the negative effects of COVID-19 on children and learning. While this task force worked on four strategic pillars—communications, continuous distance learning, school reopening, and operations planning—this report focuses on the first two, and specifically the inputs needed to implement an effective remote education program: ensuring delivery of content through different platforms, leveraging on an inventory of existing content, and providing support to both teachers and parents.

A **multichannel** remote education program is critical to ensure content is delivered to all students. As Sierra Leone, has a low penetration of Internet and TV, the MBSSE and the TSC deliberately decided to give special focus to radio and printed material, and offer digital learning material as a complement. This decision was also based on a study conducted after the Ebola crisis that showed no evidence that online learning, screen, or mobile-based technology positively supported at-home learning; in contrast, the radio learning program reached a significant

[27] TV, radio, and mobile penetration obtained from UNICEF data.

number of students. Thus, Sierra Leone's government officials prioritized leveraging an existing radio learning program and launched it on April 6, 2020, less than one week after schools were closed in the country. Moreover, the TSC actively requested support from third-sector organizations to increase the program's reach. In 2018, UNICEF built a radio studio at the Ministry Radio Broadcast House to produce Sierra Leone's radio learning program. During the COVID-19 pandemic, the MBSSE partnered with 12 community radio stations that retransmitted the ministry's radio learning program to reach students in remote communities. The MBSSE and the TSC also developed printed materials to complement the radio learning program.

Although Sierra Leone's TSC had an inventory of existing **content** for the radio learning channel, during the COVID-19 pandemic, existing content was curated and new learning sessions were created, produced, and presented through the radio programs by teachers from top public and private schools. Teachers were selected based on the academic results of their students in Sierra Leone's national assessments. In fact, top private schools were generous in sharing all their remote learning content to the MBSSE and the TSC. The radio learning programming ran from Monday to Friday in 30-minute increments and delivered content based on the primary and secondary school curriculum in core academic subjects. Moreover, there was an emphasis on simplifying and prioritizing the curriculum: lessons delivered through radio were grouped by multigrade levels (grades 1–3, grades 4–6, Junior Secondary School, and Senior Secondary School), and subjects were prioritized to those that students were not performing as expected such as in mathematics, English, and science.

The MBSSE and the TSC planned to **support teachers** and **parents.** A large portion of the teacher population in Sierra Leone lack formal teaching qualifications, and, as the remote education process was new for most of them, it was critical to guide them in this process. According to TSC officials, Sierra Leone's radio teaching program not only targeted students but also teachers who needed to improve their practice; for instance, when schools were opened, teachers used the radio program to complement their lessons or adapt their methodology. Also, radio learning programs were targeted, not only to students but to support parents. The Early Childhood Development (ECD) sessions aimed to equip parents with the tools to support children in pre-school and the Life Skills sessions, that not only target girls that are out of school but also parents who wanted to learn practical skills or help their children do so. These programs constantly communicated to parents through newspapers, social media, and, for those who were illiterate, the remote learning programs were announced through loudspeakers on streets. However, direct communication between teachers and parents or students still remained a challenge. While the radio program allowed students and parents to call during the second half of each radio learning session, there was less information regarding direct support from teachers to address parents' concerns.

Outcomes: perceived effectiveness of Sierra Leone's remote education program

Sierra Leone's Education Sector Plan recognized the importance of having a **monitoring** and **evaluation** unit within the MBSSE. Even though learning was not monitored during the Ebola epidemic, it was critical for the MBSSE to track progress in key areas to better understand who was being reached and how effectively students were learning. The MBSSE COVID-19 education emergency response plan included a section of review, assessment, and evaluation of the remote teaching and learning processes.

Regarding **reach,** Sierra Leone's strategy was to leverage and rapidly scale up its already existing remote learning resources to provide education to as many students as possible. Before Ebola, effective radio learning programs such as 'Pikin to Pikin' reached almost 70 percent of the target students and 94 pecent of parents. During the Ebola crisis, UNICEF estimated that radio education programs reached about 1 million children across Sierra Leone, Liberia, and Guinea. Among the most affected countries, Sierra Leone had the largest number of radio stations broadcasting emergency learning programs to reach students in remote areas. Still, access to the learning program was limited because of poor radio signal coverage in rural areas and a lack of radios in poor households. During the COVID-19 pandemic, Sierra Leone's MBSSE and TSC officials, learning from the Ebola crisis, identified remote communities that had poor radio signal, and partnered with local community radios or installed radio transmitters. According to Rising Academies, their radio learning program reached about 47 percent of the student population in the schools they operated; however, at the national level, the situation was different. According to a

survey conducted by Innovations for Poverty Action (IPA), while almost 80 percent of respondents reported children in their household were spending time on education, the majority was using schoolbooks and less than 20% was accessing through radio learning programs.

Concerning the monitoring of **frequency of use** and **engagement rates,**[28] while the MBSSE had not tracked these specific metrics, anecdotal evidence from studies conducted after the Ebola outbreak showed that radio programming helped students and teachers to maintain a link to education during the crisis. Even though the content delivered through radio was not considered a quality substitute of schools, it was taken seriously by both the government and families, so it helped to keep students connected on a daily basis to the remote education program. During 2019, further steps were taken by the TSC to improve the radio learning program; the commission reviewed the teaching program, improved the scripts, and strengthened the radio teaching team. Moreover, during the COVID-19 pandemic, the TSC was constantly working to increase engagement and interaction of students with the radio learning program. For example, at the end of each radio learning segment, a live phone line was opened to allow children to call in with their questions; all calls to the radio learning program were toll-free.

As schools reopen, ***diagnostic assessments*** could help the government to identify learning gaps and inform remedial programming so that all children could catch up rapidly. After Ebola, once learning gaps were identified, Sierra Leone's government developed a remedial program that was rolled out in every school to help students recover learning losses through an accelerated and simplified syllabus focused on core subjects. In the meantime, Sierra Leone's MBSSE was planning to gradually reopen schools in July 2020 to provide remedial lessons for students who needed to take national assessments by the end of the year, as well as to expand the remote learning program's reach and strengthen the content for those who would not be part of this gradual reopening. While both the MBSSE and the TSC planned and rapidly executed an enhanced radio learning program while schools were closed, it was equally important to improve the monitoring and evaluation processes to track student progress with real-time data, as well as to support teachers to conduct formative assessments to identify learning gaps and ensure students were learning. The experience of Rising Academies, which conducted qualitative surveys to understand engagement and phone-based assessments to evaluate learning progress provided insights to scale up a monitoring process nationally.

[28] Frequency of use is defined as the number of times students access the learning channel per week, on average. Engagement rate is defined as the amount of time students spend learning each time they use the channel, on average.

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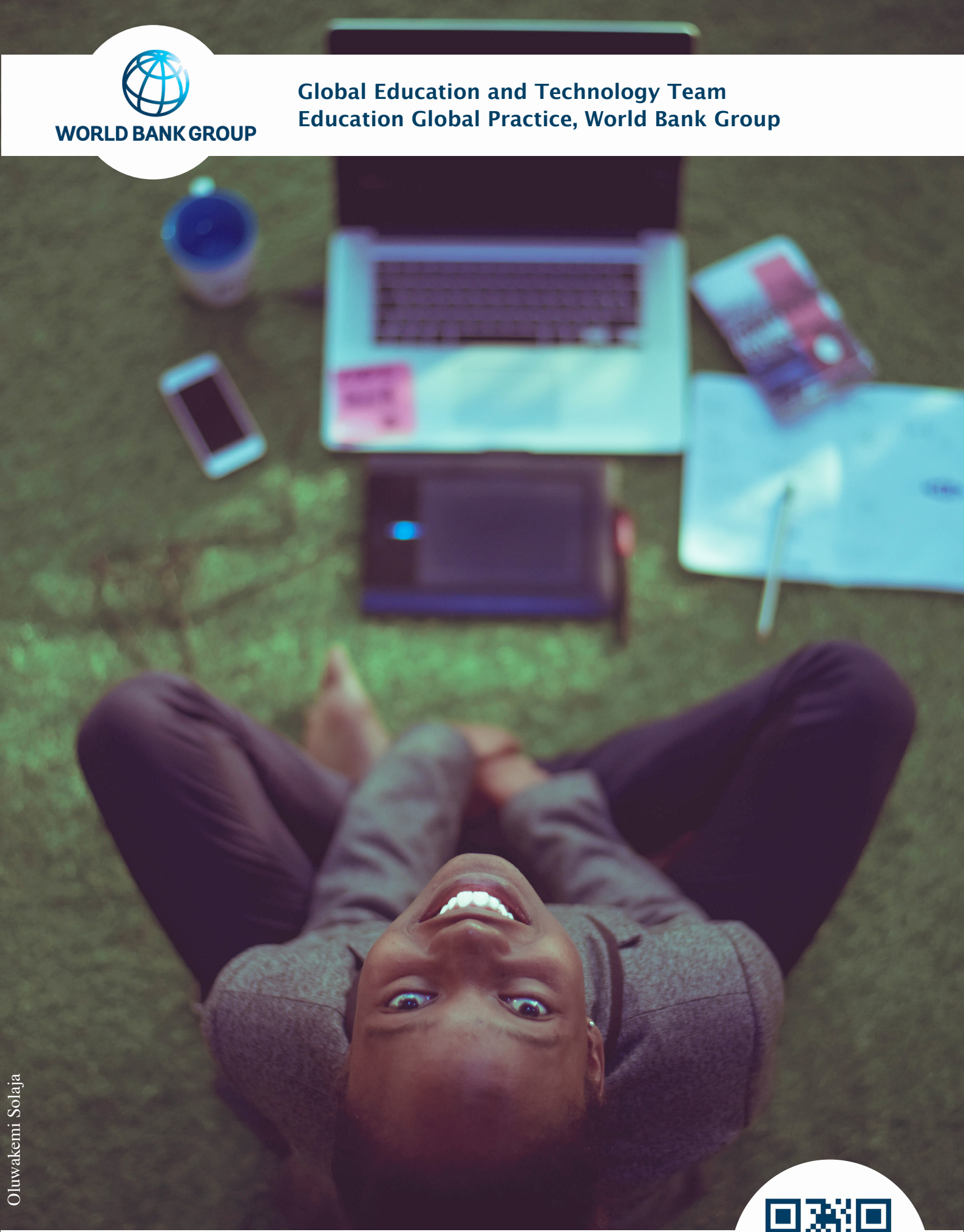

Oluwakemi Solaja

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