Background report

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

Digitalization, the future of work and the teaching profession project

Jean Pierre Mugiraneza

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International Labour Office • Geneva

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▶ Abbreviations

▶ **DFID**	Department for International Development
▶ **ESSP**	Education Sector Strategic Plan
▶ **ICT**	information and communication technology
▶ **SNER**	Rwanda National Union of Teachers (Syndicat National des Enseignants au Rwanda)
▶ **UNICEF**	United Nations Children's Fund
▶ **USAID**	United States Agency for International Development
▶ **USSD**	unstructured supplementary service data
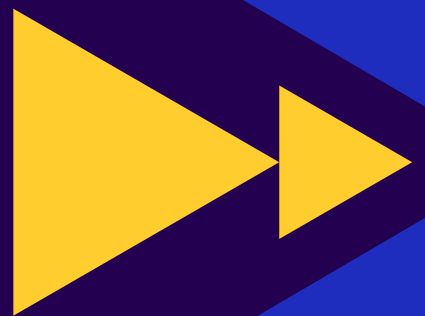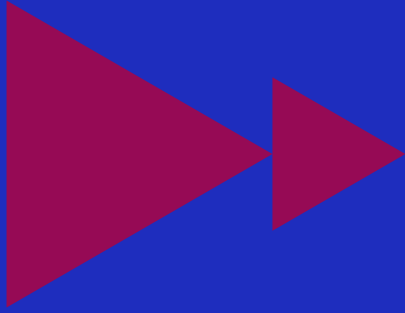
▶ 1. Introduction

The first recorded case of coronavirus disease 2019 (COVID-19) appeared in Rwanda on 14 March 2020. Since then, the number of cases has continued to increase. Despite efforts of the Government of Rwanda to mitigate the negative impacts of the pandemic, it has seriously affected the country's economy and the social well-being of its citizens. In response to the pandemic, the Government of Rwanda, in collaboration with development partners and international organizations, designed several responses to the COVID-19 crisis, including in the education sector. The effects of the pandemic were more pronounced for teachers in private schools than those in public schools, as a number were left without employment. Although teachers in public schools continued to receive their salaries during school closures, most were not able to participate in capacity development opportunities for distance teaching and learning. Despite these setbacks, the pandemic has also provided opportunities to build a more resilient education system.
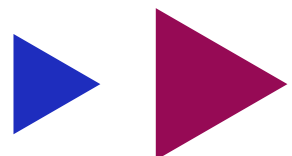
▶ 2. Methodology

The study methodology involved the collection and review of documents supported by information from key informant interviews with teachers, school leaders and teachers' unions in both the public and private sectors. Reviewed documents included (a) reports from quantitative surveys and other research studies carried out on Rwanda's education system; (b) evaluation reports examining the impact of the COVID-19 pandemic prevention and response initiatives; (c) relevant national laws, policies and strategy documents, as related to the pandemic; (d) COVID-19 prevention policies and procedures as implemented in schools; and (e) relevant media articles.
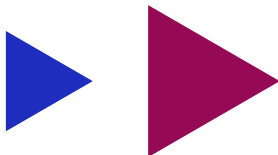
▶ 3. COVID-19 and Rwandan education context

Before the COVID-19 crisis, Rwanda was gradually working towards becoming a middle-income country. As a result of the measures implemented to reduce new cases, the economic growth rate is projected to decline notably, with the education sector being significantly impacted (Bizoza and Sibomana 2020). With the closure of all borders, the economy was further impacted by declining international prices for Rwandan export commodities and reduced tax revenues in an environment requiring additional spending to mitigate the public health and financial crisis. All categories of citizens have been affected in some way, particularly employees in the private sector. This also includes teachers in both public and private schools, whose working conditions and social and economic activities changed notably. In light of the COVID-19 pandemic and its impacts in Rwanda, the teaching profession is experiencing transformations.

Rwanda has adopted several strategies in response to the COVID-19 crisis. The Government of Rwanda put in place a mandatory national lockdown on 21 March 2020, in effect for two months. Schools, among some other services, were closed. This also included border closures, stringent social distancing policies and mandated home-based work, with the exception of critical services. Despite these efforts, Rwanda is at high risk of transmission of COVID-19 and had already reported 5,726 confirmed cases[1] as of 23 November 2020. The COVID-19 response strategies, nonetheless, have been effective, as the recovery rate was 90.7 per cent, the death rate was 0.8 per cent and the test positivity rate was 2.9 per cent as of 13 November 2020. The adopted strategies have already flattened the curve on COVID-19, though education remains one of the most affected sectors in the country. All primary and secondary students (about 3,574,070) were out of school from March to November 2020. From 13 November 2020, 50 per cent of students returned to school. It is expected that the remaining students will resume their schooling in the coming weeks. School closures have potential long-term impacts on the country's social and economic development. The learning loss was especially exacerbated by the existing digital divide in Rwanda.

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1   The Ministry of Education provides updates on COVID-19 on a daily basis.

▶ 4. Education sector COVID-19 response

In April 2020, Rwanda's Ministry of Education developed the Education Sector COVID-19 Response Plan, which is aligned with the Education Sector Strategic Plan (ESSP) 2018/19–2023/24. Specifically, it aims to mitigate the impact of the pandemic and assist progress towards realizing the goal of the ESSP: "to ensure Rwandan citizens have sufficient and appropriate skills, competences, knowledge and attitudes to drive the continued social and economic transformation of the country and to be competitive in the global market" (Government of Rwanda 2018a, 2020). The Education Sector COVID-19 Response Plan also aligns with the country's National COVID-19 Preparedness and Response Plan.

In support of a cross-sectoral approach, the Ministry of Education has committed to working closely with other ministries, civil society organizations and development partners to ensure the realisation of the Education Sector COVID-19 Response Plan. The plan considers immediate, medium- and long-term strategies to combat the pandemic. The immediate responses cover the lockdown period (including school closures), while the medium- and long-term responses take into account the period beyond school closures and aim to sustain the efforts made during the short-term response. The objectives of the Education Sector COVID-19 Response Plan are to ensure (a) continuity of learning for all students; (b) safe and effective reopening of schools; (c) safety and health of students, teachers and other school personnel; (d) needs of vulnerable students and teachers from disadvantaged communities are met; and (e) resilience against future shocks similar to the COVID-19 pandemic. Table 1 summarizes key areas of the Education Sector COVID-19 Response Plan.

▶ Table 1. Education Sector COVID-19 Response Plan

Short- and medium-term response activities	Long-term response activities
▶ Provide lessons via radio	▶ Expand radio and television programmes
▶ Provide lessons via television	▶ Expand online learning
▶ Provide online learning opportunities	▶ Combine use of digital and mass broadcasting tools
▶ Carry out research on inequalities in accessing schooling	▶ Establish remote assessment strategies
▶ Carry out assessment of learning loss	▶ Provide capacity development for teachers
▶ Organize back-to-school campaign	
▶ Provide nutrition support through school feeding programmes at school reopenings	
▶ Provide scholastic materials	
▶ Mobilize parents and community to ensure students return to school	
▶ Provide remediation and catch-up programmes for students at risk of repetition and dropping out	

4.1 Immediate impact and responses

To ensure the continuity of learning during the period of school closure, the Government of Rwanda and its development partners in the education sector devised a remote learning system for primary and secondary students. This involves expanding remote learning opportunities through radio and television broadcasting of lessons, which were built through the curriculum and began from where learning was suspended in the classroom.

In Rwanda, students could follow their radio and television lessons via basic electronic devices such as mobile phones. As shown in Rwanda's 2018 poverty report, 77 per cent of households in Rwanda had a

radio device[2] and about 71 per cent had a mobile phone in 2017. Alternatively, approximately 18 per cent of non-poor households and 1 per cent of poor households had a television (Government of Rwanda 2018a). As a short-term solution, the Rwanda Education Board, in collaboration with the United Nations Children's Fund (UNICEF) and other development partners, provided scripted lessons from the competency-based curriculum for broadcasting through radio stations, including Radio Rwanda (Houser 2020) and Radio Inkoramutima (Nkurunziza 2020). Table 2 shows the percentage of students who were following the scripted radio lessons from their homes as of 21 August 2020.

▶ **Table 2. Education radio broadcast by subject and radio station**

No.	Subject	Broadcast date	Radio station	% following radio lessons
1	Kinyarwanda (n = 2,518)	18 and 20 August 2020	Radio Rwanda: 100% Radio Inkoramutima: 0%	59%
2	English (n = 77)	17 and 19 August 2020	Radio Rwanda: 100% Radio Inkoramutima: 0%	35%
3	Mathematics (n = 40)	21 August 2020	Radio Rwanda: 87% Radio Inkoramutima: 13%	59%

Source: Monitoring report by the Building Learning Foundations programme in collaboration with UNICEF and the United States Agency for International Development (USAID); n = number of sample students in survey.

The monitoring report shows that about 59 per cent of sample students in primary school were following radio lessons on mathematics and Kinyarwanda. Kinyarwanda and mathematics subjects are taught in the mother tongue. Only 35 per cent of children followed their English lessons through Radio Rwanda. The difficulty of learning English may be the cause of the low remote attendance. It could also indicate that children are less likely to get support learning English in their homes as opposed to other subjects.

With remote learning, children require support similar to that provided by teachers in the classroom. The joint intervention by the Building Learning Foundations programme[3] and the Soma Umenye programme[4] shows that some children were able to get support from their parents. Generally, the highest form of support received by children during lockdown was ensuring that materials were available for lessons. However, many children are not receiving the support needed to continue learning from home, such as assistance with lesson activities and homework.

Research shows that audiovisual lessons can be more beneficial than audio lessons on their own. In Rwanda, most secondary school lessons continued through television with support from Rwanda's development partners in education. However, children's attendance is likely to be affected by the low rate of television ownership in Rwanda, which stands at 11.6 per cent (Government of Rwanda 2018a).

The Republic of Rwanda and Airtel and MTN internet service providers agreed to enable free access to education content on three e-learning portals: (a) Rwanda Education Board (elearning.reb.rw); (b) University of Rwanda (elearning.ur.ac.rw); and (c) Rwanda Polytechnic (elearning.rp.ac.rw). These portals allowed students to continue learning during school closures. However, this support has not been fully realized, especially in poor households where internet access is about 6 per cent. This is compared to about 24 per cent in non-poor households (Government of Rwanda 2018a). In addition, it has been noted that the content of the e-learning portals is not sufficiently interactive to enable engaging and effective learning. Other short-term

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2   Many phones are now serving the function of radios.

3   The Building Learning Foundations programme has been implemented in Rwanda from 2018. It aims to improve learning outcomes in English and mathematics in all primary schools in Rwanda. It was funded initially by the Department for International Development (DFID), which closed on 2 September 2020 and merged with the Foreign and Commonwealth Office (FCO) to create the Foreign, Commonwealth and Development Office.

4   Soma Umenye is a five-year USAID-funded programme that aims to improve reading outcomes in Kinyarwanda for at least 1 million children in public and government-aided schools in Rwanda.

solutions included the establishment of the Rwanda Education Board e-learning YouTube channel. The channel, set up by the Rwanda Education Board, is intended to enable students to continue their studies at home until schools reopen and beyond. Through the channel, students can access all competency-based curriculum lessons taught in primary and secondary schools (Iliza 2020).

Most of the education COVID-19 responses focused on public schools. Students in public schools were supported through radio and television lessons. Many students in private schools, however, received learning content via social platforms such as WhatsApp. Both approaches were highly dependent on parents' level of education and financial capacity. In general, the COVID-19 education responses utilizing radio, television and online lessons worked with some students, though some did not materialize as expected. For example, the e-learning portals established by the Rwanda Education Board, the University of Rwanda and the Rwanda Polytechnic were not visited by the expected number of students, most likely due to lack of internet access.

Though teachers and head teachers could play a significant role in successfully implementing COVID-19 responses, reports show that only 43 per cent of teachers in public and government-aided schools were supporting students with remote learning. The teachers' support focused on (a) mentoring parents and guardians; (b) answering questions from students via messages or voice calls; and (c) providing guidance on how to use WhatsApp or access learning materials from Google drives. Younger teachers were more likely to provide support with home-based learning (Laterite 2020).

In terms of teacher capacity development, the Rwanda Education Board and its partners established coaching and mentoring for teachers on content methodology for competency-based curriculum subjects. The 2020 Laterite report on the effects of school closure on secondary school teachers and head teachers found that 42 per cent of head teachers and 33 per cent of teachers were receiving guidance on how to keep education going during school closure. Teachers are being provided with audio and video materials to support their capacity development. The coaching is conducted virtually and supported by specialists in pedagogy. In support of these efforts, development partners distributed to teachers some electronic devices, such as computers and mobile phones, in schools.

In April 2020, the Building Learning Foundations programme conducted a rapid assessment on primary school information and communication technology (ICT) penetration among target groups, including teachers, head teachers and school subject leaders. The findings indicate that only 41 per cent of teachers can access the internet using their mobile phones, 34 per cent can access the internet at school and 23 per cent at home. Limited internet access hinders teachers' opportunities and abilities to participate in virtual capacity development as well as to support virtual learning (BLF 2020).

Remote and online learning through radio lessons and the internet assisted home-based learning; however, assessing the learning was a challenge. The Rwanda Education Board, in collaboration with other development partners, established an unstructured supplementary service data (USSD) code (*134#) for students' self-assessment. With the USSD code, students could access questions related to their level of learning in different subject areas. A few subjects were accessed for self-assessment by secondary students, while some were not accessed at all. Not all students could use the USSD code for self-assessment.

4.2 Medium-term impact and responses

The medium-term responses ensured the continuity of short-term responses during school reopenings, including the continuation of radio, television and online lessons. In October 2020, the Ministry of Education published health guidelines for school reopening. The guidelines include health measures for school reopening, including organizing a COVID-19 task force in all schools, preparing parents, teachers and other school personnel to implement the measures, establishing infection prevention and control procedures and following criteria for day and boarding school closure in case of confirmed positive cases. The guidelines also describe the communication chain between different stakeholders, including parents, teachers and education officers. They do not, however, provide specific guidance for teachers in specific activities and locations, for example in laboratories and dining halls. The guidelines were also developed without attention

to differences in school contexts, including between rural and urban schools, which may face different challenges in implementing health and safety measures.

On 13 October 2020, the Ministry of Education published an adapted school calendar for the new education timeline. Starting in November 2020, schools opened in phases. Higher-grade students were given priority, with every school mandating social distancing. Younger students (in lower primary) were not scheduled to go to school until 2021. From 29 September to 3 October 2020, the Rwanda Education Board, in collaboration with UNICEF, organized one-day training for head teachers, sector education officers and district directors of education across all districts on safety and health measures for school reopenings.

In preparation for school reopenings, the Ministry of Education and its partners have drafted a remediation and catch-up programme for students at risk. Many students could not continue learning through radio, television and online platforms due to a lack of ICT devices, accessibility to the learning channels and internet access. Therefore, a remediation and catch-up programme was developed to help students that could not access learning through these platforms. The remediation and catch-up programme identifies vulnerable students (in public and government-aided schools) who are at risk of dropping out or repeating a grade. Once identified, students are provided with financial support and special remediation activities that focus on foundational skills such as numeracy and literacy.

When schools reopen, teachers will assist students, over a period of a week, to review the course content covered before the COVID-19 lockdown. Following this review, a classroom-based assessment will be designed and implemented by the teachers. The assessment helps teachers to understand the learning level of the students and to measure the learning losses that might have occurred during school closure. Results from the assessment will inform the required remediation activities.

Before the COVID-19 crisis, Rwanda had already experienced challenges in relation to high student–teacher ratios and limited school infrastructure (Government of Rwanda 2018b). These challenges were exacerbated by COVID-19 health measures, which recommend 21 students per classroom, whereas the existing average is nearly 50 per classroom. The Rwanda Quality Basic Education for Human Capital Development project, funded by the World Bank, involves, among other activities, constructing more classrooms to reduce overcrowding (World Bank 2019). However, by November 2020, most of these classrooms were not ready to accommodate the thousands of primary and secondary students. The health measures implemented in response to the COVID-19 pandemic require increasing the number of classrooms and teachers. Although recruitment has been initiated, the government has encountered challenges in recruiting an adequate number of teachers to improve the student–teacher ratio and to attend the new classrooms being constructed (Ashimwe 2020a).

Rwanda's COVID-19 medium-term responses are constrained by the lack of infrastructure. In 2019, Rwanda's education statistics showed that the ratio of students per computer is 10:1 in primary schools and 8:1 in secondary schools. About 34.8 per cent and 61.1 per cent of primary and secondary schools, respectively, are equipped with internet connectivity. Furthermore, 58 per cent and 66.6 per cent of primary and secondary schools, respectively, have ICT tools for teaching and learning. The ratio of teaching staff per computer is 14:1 in primary schools and 4:1 in secondary schools. Based on these data, it is clear that any response that relies on ICT tools and internet access would not reach all students equally.

The reopening of schools in November 2020 showed that some medium-term responses could not be fully realized. Some schools did not have enough teachers for upper grades and had to borrow teachers from lower grades, and teaching and learning materials needed to be replaced. Some schools also lacked adequate washing facilities and desks for all returning students.

The Government of Rwanda has invested in the prevention of COVID-19 among students. The country plans to do 3,000 COVID-19 sample tests in schools as the government steps up efforts to assess the prevalence of the virus (Ashimwe 2020b). Recent COVID-19 tests show that about 0.5 per cent of students are already infected with the virus (Munyantore 2020). The health guidelines for school reopening are meant to prevent the spread of the virus among students and teachers.

4.3 Long-term plans and projections

According to Rwanda's Education Sector COVID-19 Response Plan, long-term projections relate to building resilient education systems that can adequately respond to similar crises. Priorities are set around expanding radio and television programmes, expanding online learning, combining use of digital and mass broadcasting tools and establishing remote assessment strategies. In terms of capacity development, opportunities will focus on sustainability and resilience in case of future crises, including support for remote learning in case of school closure.
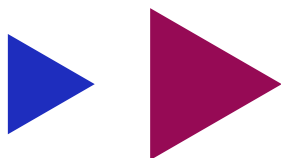
▶ 5. Impact of COVID-19 on the teaching profession

In Rwanda, there are three categories of schools: public, government-aided and private (Government of Rwanda 2019). Working conditions for teaching staff differ between categories. For example, the Government of Rwanda covers salaries and extended benefits for teaching staff working in public and government-aided schools. In private schools, salaries and other extended benefits are covered by school owners. Table 3 shows the number of teachers according to school category before the COVID-19 pandemic.

▶ **Table 3. Primary and secondary school teaching staff in 2019**

Description	Primary	Secondary	Total
Total school teaching staff	43,878	23,585	67,463
Male	19,534	16,903	36,437
Female	24,344	6,682	31,026
Teaching staff in public schools	12,855	7,550	20,405
Male	5,839	5,363	11,202
Female	7,016	2,187	9,203
Teaching staff in government-aided schools	26,771	12,380	39,151
Male	10,979	8,646	19,625
Female	15,792	3,734	19,526
Teaching staff in private schools	4,252	3,655	7,907
Male	2,716	2,894	5,610
Female	1,536	761	2,297

Source: Ministry of Education, Education Management Information System data.

Before the COVID-19 crisis, the number of teachers was significantly higher in government schools (59,556) than in private schools (7,907). The number of teaching staff in government-aided schools (39,151) was considerably higher than in other school categories. The core source of income in private schools is from parents' contributions in the form of school fees.

The COVID-19 crisis especially impacted teachers in the private sector, where contracts were either suspended or terminated because parents stopped paying the tuition fees. Teachers in the public sector, on the other hand, continued to receive their monthly salaries. Some of the private school teachers had to invest their time in other income-generating activities, such as agriculture and home-based coaching. However, these activities are considered as alternatives, since private school teachers would return to their profession of teaching.

5.1 Impact of COVID-19 on teachers in public schools

Since the closure of schools in March 2020, not all teachers in public schools were involved in supporting radio, television and remote learning, resulting in redundancy for some teachers. A few teachers were used to develop scripts for radio and television lessons. Despite receiving their monthly salaries, some teachers in public schools engaged in other income-generating activities, with some engaging in transport- and agriculture-related businesses. An interview with a teacher at a public secondary school revealed that the

COVID-19 crisis impacted teachers' incomes, particularly teachers' incentives, which are paid voluntarily by parents.

To ensure continuity of learning, the Ministry of Education has placed greater emphasis on integrating remote teaching through e-learning portals, strengthening collaboration with parents (to prepare for a scenario where parents are required to play a greater role in teaching their children) and supporting radio-based lessons to ensure the continuity of learning in circumstances such as the COVID-19 lockdown. This will require strengthening the capacity of teachers for remote and virtual teaching and learning. Teaching in the post-COVID-19 context will require adapting teaching practices to suit new learning and teaching conditions, including a blended learning approach.

## 5.2 Impact of COVID-19 on teachers in private schools

The impact of the COVID-19 pandemic was especially felt in private schools, where teachers' contracts were terminated or suspended, which also led to loss of some benefits. This greatly impacted their living conditions. Many relied on their savings and others found work outside the education sector. The termination of contracts was not done in the same way across all private schools. Teachers were not involved in decision-making and many private schools did not develop strategies to help teachers during the COVID-19 lockdown.

Many private school teachers hope that their contracts will be renewed when schools reopen. Since private schools depend on parents paying school fees, some private school leaders are worried that some students may not return to school, thereby decreasing the number of required teachers (key informant interview, 2020).

The COVID-19 pandemic, and the resulting loss of salaries, has had social and mental health impacts on some private school teachers. Depression among private school teachers is real, especially for teachers who relied on their monthly salaries. Different organizations such as churches provide food to people out of work. Some private school teachers engaged in other income-generating activities, including those that ventured into farming vegetables and other crops (key informant interview, 2020).

Other teachers engaged in activities that included coaching children from their own families and other families. The coaching included supporting children to continue their learning at home. This practice was not officially accepted, due to the risk of spreading the virus. Some private school teachers continued to teach voluntarily by sharing learning materials through platforms such as WhatsApp and Facebook. Some would charge parents for any coaching services provided to their children. Another major challenge for private school teachers was the suspension of medical insurance. Normally, as part of their benefits, teachers and their families have the right to medical insurance.

A few private schools continued to pay teachers' monthly salaries, including one school in the Eastern Province of Rwanda. This required additional funds from donors and engaging teachers in income-generating activities. Although the pandemic presented many challenges, some schools also noted that it has led to exploration of remote and online learning opportunities, with the promise of building a more resilient education system (key informant interview, 2020).
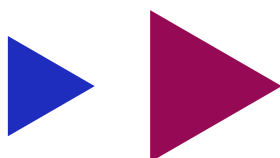
▶ 6. Governance and COVID-19 response

In 2012, Rwanda approved and put into force the statutes governing the establishment and operations of two teacher trade unions. The Rwanda National Union of Teachers (Syndicat National des Enseignants au Rwanda, SNER), a trade union for teachers in public and government-aided primary schools, was established to protect teachers' interests and rights (Government of Rwanda 2014). SNER is organized to participate in political and administrative decisions pertaining to its teachers towards improving the quality of education. Prior to the COVID-19 pandemic, SNER had been engaging with ministry officials on teachers' training and motivation. As confirmed by its President, SNER was not involved or consulted in the preparation of Rwanda's Education Sector COVID-19 Response Plan.

The second union – SYNEDUC – organizes teachers in the private sector and engages in negotiations with employers on behalf of its members. According to the Executive Secretary of SYNEDUC, the union supported teachers to ensure a fair process in the suspension of contracts during the pandemic. The union identified some concerns regarding the suspension of members' contracts and engaged in advocacy activities. SYNEDUC also engaged with financial institutions, such as Umwarimu Sacco, on behalf of teachers to ensure that they were protected against high interest rates on loans. Working with Umwarimu Sacco, SYNEDUC also managed to secure a deal to provide private schools with loans to be used for teacher salaries for three months, although many schools did not make use of this option. Furthermore, the union helped about 380 teachers with food and other basic needs. Although SYNEDUC supported its members during a difficult time, its focus was primarily on the financial welfare of teachers.

A helpline and helpdesk was set up by the Ministry of Education, through the Rwanda Education Board, for parents, students and community members to support their queries related to remote learning options and to generate feedback on the efficacy of resources. A free USSD code service was used to communicate important messages and reminders to parents of learning schedules for their children. The Rwanda Education Board radio and television learning programmes aired instructional broadcasts to cultivate knowledge and involvement in early stimulation, student learning routines and processes and psychosocial well-being of children. Parents are expected to perform as teachers to ensure effective blended learning, which will require a change in mindset and attitude towards the learning of their children. As schools reopen, the role of the community will be key to ensuring that no child is left behind, including children from disadvantaged communities. This will help to tackle potential dropout rates and reduce inequities.
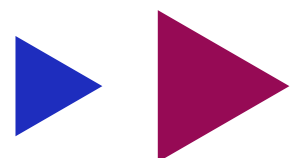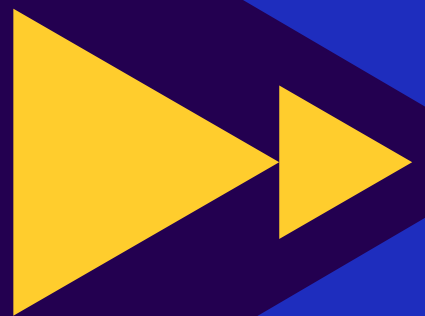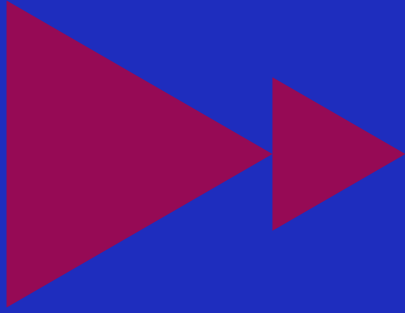
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