EDUCATION BUDGET PLAN FOR EMERGENCIES RESPONSE:
THE CASE OF COVID SHOCKS

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EXECUTIVE SUMMARY

Education systems around the world are vulnerable to various shocks related especially to health and economic shocks, natural disasters, and conflicts. The COVID-19 pandemic which has severely affected education systems, has highlighted the importance of emergency contingencies to ensure resilient education sectors to sustain student learning.

This study examines the case of the COVID pandemic as an illustration of shocks and responses in the education system in the context of emergencies and reviews some international experiences of education under emergencies. It discusses the planning of education budgets in the context of the necessary prioritization of education spending by governments given the fewer available revenues and greater spending needs during emergencies.

We first review the impact of the current health pandemic on the education system through school closures and economic demand and supply effects, as well as fiscal impacts especially on education budgets. We then examine responses put forward and potential priorities in education financing and place them in perspective with previous health and financial crisis.

Part of the government overall fiscal responses to emergencies, it is critical to protect education budgets over the next years so as to minimize disruptions in education, but also to build more equitable, effective and resilient education systems. Even though fiscal constraints are expected to be tight following crisis, protecting the education budget and improving the efficiency and effectiveness of existing budget could prove essential to prevent a lost generation of students and a drop in human capital. Decrease in public education funding can have long-term effects on student learning outcomes, compounding the harmful impacts of the crisis on households’ ability to support children’s education.

To confront the important learning losses and inequalities, targeted individual support programs aiming at reducing learning losses and at bridging learning gaps across vulnerable demographic groups, should be prioritized.

In the current pandemic context, the blended education approaches brought about by the crisis -- mixing in-person and remote learning-- despite its current deficiencies, could be seen as an occasion to harness new education technologies to reimagine the education system, to make it more efficient, more equitable and more resilient to future shocks.

We discuss the need for adequate preparation to shocks in the education system which would require identification of appropriate structure and mechanisms to coordinate education stakeholders and interventions to make systems and budget planning responsive to future emergencies.

Given that still few information based on evidence is currently available on potential best practice for emergency education budget plan, we discuss some country experiences, in particular the cases of Ethiopia, the USA and South Korea.

Recommendations are formulated, including the creation of a study group to examine the possibility of establishing an education in emergency response strategy framework.
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INTRODUCTION

Education systems around the world are vulnerable to various shocks related especially to health epidemics and other natural disasters, conflicts, and economic shocks. The massive impact of the COVID-19 pandemic on education systems and learning has highlighted the importance of emergency contingencies to ensure resilient education sectors to sustain student learning.

This brief report examines the case of the COVID pandemic as an illustration of shocks and responses in the education system in the context of emergencies and reviews some international experiences of education under emergencies. It examines the planning of education budgets in the context of the necessary prioritization of education spending by governments given the fewer available revenues and greater spending needs during emergencies.

We first review the impact of the pandemic on the education system through school closures and economic demand and supply effects, as well as fiscal impacts on education budgets. We then examine responses put forward and potential priorities in education financing and place them in perspective with previous health and financial crisis. Given that the current pandemic is exacerbating existing access gaps, learning deficiencies and inequities, priorities should be placed on reducing widening learning gaps that affect vulnerable groups and finding solutions to move toward more resilient and equitable education systems.

We discuss the need for adequate preparation to shocks in the education system which would require identification of appropriate structure and mechanisms to coordinate education stakeholders and interventions to make systems and budget planning responsive to future emergencies.

Given that still few information based on evidence is currently available on potential best practice for emergency education budget plan, we discuss some country experiences, in particular the cases of Ethiopia, the USA and South Korea.

Various recommendations are formulated, including the creation of a study group to examine the possibility of establishing an education in emergency response strategy framework.

1. EDUCATION EFFECTS OF THE COVID-19 PANDEMIC

The COVID-19 pandemic has affected education systems through two major shocks: (i) the near-universal closing of schools at all levels part of the pandemic response, accompanied by the introduction of remote learning approaches, have brought severe direct impact on education, (ii) the economic recession associated with the slowdown of economic activities following pandemic-control measures has led to supply and demand effects on education. Together these shocks have reduced education access and learning levels and have amplified already important achievement gaps affecting especially vulnerable student categories and areas, within and across countries.
1.1 CLOSURE OF SCHOOLS

Children's learning and welfare have been significantly affected by the closure of schools worldwide. School closures have left most students out of school for various periods -- 1.6 billion in 180 countries at the height of the pandemic lockdown in April 2020, and still about 700 million students in December 2020 (UNESCO, 2020a; UNESCO, 2021). School closure has affected even more strongly low-and-middle income countries (LMIC) with average days of in-person instruction loss more than twice the one observed in high-income countries (World Bank, 2020a).

In East Asia and Pacific (EAP) countries, every student in the region was out of school at one time or another since January 2020, many for significant durations. Schools in the region were closed for an average of 2.7 months between January 1 and August 31 (or 46 percent of the total time they would have otherwise been in session)(World Bank, 2020b, p.11).

EFFECTS ON LEARNING LOSSES

For most children and youth, time out of school and use of alternative mode of delivery have led to significant learning loss (OCDE, 2020d; UNESCO, 2020a). Long-term impacts of COVID-19 on human capital could represent a 0.7 learning-adjusted year of schooling lost on average (World Bank, 2020b). In China and the ASEAN-5 countries, learning-adjusted years of schooling are expected to drop by 0.8 year, with somewhat smaller decline in small East Asian economies (0.7 year) and the Pacific Island countries (0.4 year) because of less common school closures in the region (World Bank, 2020b, p. 24).

School closures is estimated to put an additional 72 million primary school aged children at risk of falling into “learning poverty”, that is children unable to read and understand a simple text by age 10 (Azevedo, 2020; World Bank, 2020c).

INCREASE LEARNING INEQUALITIES AMONG POOR

In many countries, the pandemic has amplified the existing global learning crisis and learning inequalities. School closures and the use to remote learning approaches have exacerbated high levels of learning inequality, already a feature of many low- and middle-income countries before the pandemic. The huge digital divides in terms of connectivity and digital skills among categories of student has meant that the various remote learning approaches used during school lockdowns – combining online resources with radio, TV, and mobile phones – have amplified learning inequality (Lieberman, 2020; OECD, 2020e).

Indeed, access and capacity to use remote learning approaches, as well as the quality of parental support and home learning environments, are strongly a function of socio-economic characteristics. The most educated and wealthiest families are better able to cope with the challenges posed by the crisis and sustain their children’s learning at home. Poor households for their part tend to have less access to mobile technologies and to the internet and computer equipment that could enable distance learning. They are less likely to have the knowledge and

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[1] ASEAN-5 (Association of Southeast Asian Nations-5) refers to: Indonesia, Malaysia, the Philippines, Singapore, and Thailand.
technical skills necessary to support their children and teach them academic subjects themselves. They are also less likely to have access to an adequate space for children to learn and books and other learning materials at home, as well as to provide emotional and motivational support; and less likely to hire virtual private tutors (World Bank, 2020a, p. 12).

Given these further disadvantages with remote learning approaches, adverse effects of the pandemic on learning and human capital are disproportionately bear by the poor. Simulations conducted by the World Bank show that school closure will more adversely affect learning outcomes among poor students. Within ASEAN-5 countries, the share of students within the poorest quintile not reaching minimum proficiency in reading in PISA is expected to increase from 67% to 77% following the pandemic (See Figure 1 in the Appendix) [2] (World Bank 2020b, p. 25)

Furthermore, the pandemic is expected to increase the percentage of primary school-age children living in “learning poverty” from 53 percent to 63 percent in low- and middle-income countries. This would represent a loss of about $10 trillion in future lifetime earnings for these students, an amount equivalent to almost 10 percent of global GDP (World Bank, 2020c).

The same impacts are observed in high income countries. In the US for instance, a recent study of assessment scores in Washington D.C. found that public school students for which school has been essentially remote since March were four months behind in mathematics, on average, compared with a typical year, and one month behind in reading (EmpowerK12, 2020). Black and at-risk students — those whose families receive food stamps or other public assistance, or who are homeless or in the foster care system — were even further behind, especially in reading. Virtually all the loss in reading was found to be among students living in the poorest areas, while, on the contrary, students living in wealthier neighborhoods were found to have made slight gains in reading during the pandemic (EmpowerK12, 2020).

GREATER EFFECTS ON YOUNGER CHILDREN

Moreover, younger children are more severely affected by school closure especially those from poorer households. Most education systems and households have tended to prioritize continued learning for older children while schools were closed. This weak emphasis on early childhood education and early primary school years may also be because younger children are less able to independently use remote learning tools. This lack of instruction in the early period of child development which are fundamental for overall future capacity and progress, could prove most detrimental for the development of learning skills and human capital accumulation (UNICEF, 2020d; World Bank, 2020a, p. 12).

HEALTH IMPACTS

Nutrition and health have also been impacted by school closures, exacerbating learning losses and inequalities. Although COVID-19 itself tends to affect children and youth’s health less severely than adults, the school closure has meant the interruption of an important source of nutrition for a large segment of school children. School feeding programs are found in nearly every country [3] The interruption of school meals and feeding programs could translate into a higher incidence of malnutrition and stunting, affecting student learning. For instance, according to World Bank (2020b, p. 26), more than a third of households in Indonesia reported facing at least some sort of food shortage during the pandemic.

[2] High income EAP (East Asia Pacific) countries refer to: Australia, Brunei, French Indonesia, Guam, Hong Kong, Japan, Korea Republic, Macau, New Caledonia, New Zealand, Palau, Singapore, Taiwan.

[3]
Countries also report significantly less immunization and prenatal care since the beginning of the pandemic. In one third of primary health care networks in EAP countries, shutdown of national services of immunization have been reported since the early March. In Laos for instance, meaasle vaccination coverage dropped by more than half during the first six first months of 2020, and by 34% in PNG which also report large drop in ante natal care coverage (World Bank, 2020b, p 26). School closures and household’s health shocks have also impacted student mental health and isolation (OECD, 2021).

1.2 ECONOMIC SHOCK

In addition to the shocks on education systems caused by school closures, the pandemic and various containment efforts have led to a severe economic shock. The recession has significantly impacted education both on the education supply and demand sides through effects on employment, household incomes, and government revenues (Carvalho and Hares, 2020).

The pandemic, which has been described as “the most adverse peacetime shock in over a century;” much bigger than the global financial crisis of 2008-09 (World Bank 2020a), has brought about the largest contraction in global GDP per capita since World War II. In the first half of 2020, GDP per capita dropped by 5.6 percent. Overall, in 2020, all economies went through a recession with world GDP output declining on average by 4.4%. In ASEAN-5 countries, contraction was slightly less at 3.4% (IMF, 2020b, p. 9) (See Figure 2 in the Appendix).

In EAP countries, while slightly smaller than in the rest of the world, the employment and earning impacts of the pandemic have been very significant [4] (World Bank, 2020b, p. 4). Firm sales in EAP countries in April and May 2020 dropped by 38 to 58 percent compared to the same month in the previous year on average. This has led to severe income and employment effects on households and businesses – especially for smaller firms and the informal sector, which have affected the education sector.

DISPARITIES OF SHOCKS ON SMALL AND MEDIUM ENTERPRISES (SME) AND INFORMAL SECTOR

In most countries, the lockdown hit harder employment and demand in the service and manufacturing sectors, affecting especially SMEs and informal sector activities (Egas et al, 2020; ILO, 2020; Komin et al., 2020). Larger size firms proved more able to adapt to digital technology and recovered faster. According to World Bank (2020), the sales of SMEs in EAP countries felt by 7 to 23 percentage points more than larger firms in 2020. SMEs and people evolving in the informal sector firms have experienced significant employment and income declines during the pandemic (World Bank, 2020b, p.10).

IMPACTS ON POVERTY

This more substantial impact on SME and informal sector activities has mean that more vulnerable segments of society, poor and rural households, have disproportionality bear the economic impacts of the crisis (FAO, 2020; CGAP, 2020). For the first time since the Asian financial crisis in 1998, an increase in extreme poverty is expected.

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[3] In 2013, approximately 368 million children worldwide relied on these programs. In the United States for instance, around 30 million children from disadvantaged households rely on school feeding programs for vital nutrients and are at risk of going hungry (World Bank, 2020d, p. 12)

[4] EAP countries are especially exposed to the world economy through trade of good services labor and capital. Countries more reliant on exports, such as Vietnam Cambodia Malaysia Mongolia and Thailand, are especially exposed to reduced global demand, as well as travel disruption and tourism (World Bank, 2020b).
Prior to the onset of COVID-19, 33 million people were projected to escape poverty in 2020 based on the upper-middle-income class poverty line (US$5.50/day, 2011 PPP). Instead, poverty is likely to be 1.6–1.8 percentage points higher than previously projected (World Bank, 2020b, p. 10).

According to phone surveys from 28 countries, more than 60 percent of households have experienced a decrease in their family income in 2020. Poorer countries seem to have been hit harder, with more than 80 percent of households in Senegal or Malawi reporting loss of income since the pandemic (Le Nestour et al. 2020).

In upper-middle income countries, the cost per student of secondary education for families is close to 7 percent of the average income per capita and more than double in low-income countries (Le Nestour et al. 2020).

Overall, between 88 and 115 million more poor people are forecast in 2020 (World Bank, 2020b). South Asia and Sub-Saharan Africa are expected to be the hardest hit regions. An additional 49 to 57 million and 26 to 40 million people are expected to be pushed into extreme poverty in these regions respectively. In the EAP region, the sustained trend of poverty reduction is expected to be reversed for the first time in 20 years in the region (except in China where poverty is projected to decline). Between 33 to 38 million more poor people than in the pre-COVID-19 scenario are expected in the EAP region (based on the upper-middle-income class poverty line (US$5.50/day, 2011 PPP), including between 5.3 and 9 million people more in extreme poverty (below 1.90 $ per day) (See Figure 3 in the Appendix). These economic shocks on government revenues, businesses and household incomes, especially the most vulnerable, affect both the demand and supply of education (World Bank, 2020c).

IMPACT ON THE DEMAND SIDE FOR EDUCATION

On the education demand side, loss of household income due to job losses, drop in remittance payments and other factors associated with the pandemic, force tradeoffs affecting schooling decisions and learning outcomes.

Remittances are expected to fall by 20 percent in 2020 in low and lower-middle-income countries, the equivalent of approximately US$142 billion (World Bank, 2020a). Such drop is likely to have a negative effect on household education spending given that research has shown that in several countries, education is one of the main use of remittances (Asare et al., 2020).

Particularly for poor households, these declines in household income and health shocks will lead to reduced investments in education, as households will be less able to pay for educational costs (Le Nestour et al, 2020). Indeed, even in countries where schooling is officially free, various supplementary costs like transportation, parent-teacher association fees, supplies and uniforms can make education expensive, especially at the secondary level. As household budgets tighten, evidence from past crises suggests that shocks are likely to increase the financial burdens families face in sending children to school, leading to a decline in education spending in poorer countries.

For instance, the Asian financial crisis in 1997-98, which reduced significantly household income in many countries, led to declines in education spending in low- and middle-income countries. In Indonesia for example, reductions in family incomes led to a 17 percent fall in education spending among rural households and a 10 percent fall among urban households, as well as a drop in enrollment rates, particularly for the poorest children (World Bank, 1998; Thomas et al, 2004).

In the current pandemic, student dropout is expected to rise, with many students dropping out of school permanently. The higher dropout rates will be concentrated in disadvantaged groups. Indeed, even before the crisis, in all regions of the world and across every level of education, there exists a clear relationship between household wealth and the likelihood of children not going to school. In all income country groups, primary and secondary school-aged children from the poorest income quintile are two to three times more likely to be out of school than children from the wealthiest quintile (Carvalho and Hares, 2020).

During the Ebola crisis, nearly an entire academic year of learning was lost in Sierra Leone, with girls 16 percentage points less likely to be back in school (Akmal et al., 2020). Furthermore, as observed in previous financial and health crisis, higher dropout rates are expected to be accompanied by increased child labor and child marriage (World Bank, 2020a).

[5] Prior to the onset of COVID-19, 33 million people were projected to escape poverty in 2020 based on the upper-middle-income class poverty line (US$5.50/day, 2011 PPP). Instead, poverty is likely to be 1.6–1.8 percentage points higher than previously projected (World Bank, 2020b, p. 10).

[6] According to phone surveys from 28 countries, more than 60 percent of households have experienced a decrease in their family income in 2020. Poorer countries seem to have been hit harder, with more than 80 percent of households in Senegal or Malawi reporting loss of income since the pandemic (Le Nestour et al. 2020).

[7] In upper-middle income countries, the cost per student of secondary education for families is close to 7 percent of the average income per capita and more than double in low-income countries (Le Nestour et al. 2020).
IMPACT ON THE SUPPLY SIDE OF EDUCATION

On the supply side of education, the economic shock also hit teachers and schools, including through a reduction in student assessment activities, leading to learning loss and further achievement gaps among categories of students.

Assessing student progress in acquiring knowledge and competences and identifying gaps between individuals and categories of students, are important component of school activities that allow measuring learning and potential roadblocks among categories of students. As a result of school closures, student learning measurement has largely come to a halt. According to a survey of UNESCO, UNICEF and the World Bank (2020), in three quarter of the countries surveyed, the pandemic led to the postponement or rescheduling of system-level examinations, ranging from four to 12 weeks delays, with a few countries reporting having cancelled their examinations altogether. Furthermore, most countries have not been planning systemwide assessments at the primary level when schools reopen, which will impede their ability to measure learning losses comprehensively and against expected student learning trajectory.

Such lack of student assessments means that teachers do not have access to proper information on learning as they try to support students remotely and when schools reopen – a key element for providing targeted remedial programs and support to students (UNESCO and ILO, 2020).

Another effect of the pandemic crisis on the education delivery side is the reduction, even once schools reopen, in the availability and quality of teaching. The pandemic itself has reduced the supply of teachers, especially the most experienced ones due to illness or mortality. In addition, fiscal pressures coming both from increase costs due to the introduction of health and relief measures and reduced government revenues, may lead to reduced resources available for personnel compensations, leading to employment losses, salary cuts and delays, which will affect school quality and student learning (World Bank, 2020a).

[8] In richer countries, there could be a counter cyclical effect of increasing education spending following a health or financial crisis (Le Nestour et al, 2020). For instance, in middle-income countries, some economic crises have been associated with increases in school participation in Latin America. Furthermore, the last financial crisis did not have any significant impact on school participation in OECD countries (World Bank, 2020b).

[9] The 2 rounds of the survey were conducted among 118 and 149 countries respectively between May and October 2020. Around a quarter of the surveyed countries reported keeping their exams as planned, but with half reducing the curriculum to be assessed (UNESCO, UNICEF and the World Bank, 2020).
The economic shocks associated with the pandemic create important fiscal policy challenges. The reduced economic activity brought about by the pandemic and associated responses translate into lower levels of tax and other government revenues and higher costs, which affects education budgets (OECD, 2020b). In Sub-Saharan Africa (SSA) for instance, government revenue is expected to fall as a share of GDP between 2019 and 2020 from 17.2 to 16.4 percent (World Bank, 2020d).

Despite declines in government revenue, government spending is expected to increase in the context of the pandemic relief and recovery programs (IMF, 2020a). In SSA for instance, government spending is expected to increase by approximately 13 percent in real terms in 2020. In EAP countries, government have put forward fiscal measures amounting to around 5% of GDP as part of the pandemic response. Thailand especially provided fiscal support of about 13% of GDP, compared to less than 2% in Vietnam. About 2/3 of these income and revenue measures were directed toward individuals to support household incomes, using social insurance for formal sector workers, and social assistance to support poor invulnerable markets (World Bank, 2020b, p. 12).

Lower government revenues and higher spending on health and fiscal relief are expected to result in most countries in a deterioration of fiscal balances (World Bank, 2020d, p. 3). In EAP countries, large fiscal deficits and debt increase are projected.[10] These revenue constraints create sharp trade-offs for governments between spending on relief, recovery, and growth, while protecting social sectors, such as education (World Bank, 2020b, p. 39).

EDUCATION

The budgetary challenges confronting the education sector are steep. Financial gaps could be substantial over the next several years, especially in low- and middle-income countries. Effects on education finance will be driven by lower public sector revenues and higher spending needs, reduced household spending and expected cuts to education aid.[11]

Intuitively, how could education budgets be impacted when confronted to a health shock and economic slowdown? A substitution effect might be expected in which governments with limited resources are forced to prioritize health over education, at least in the short-term. The need to give priority to responding to the public health emergency and to strengthening safety nets is likely to reduce the amount of funding available for other public spending, including education (World Bank, 2020d).

[10] Tighter budget constraints in the EAP region than in most other regions are associated with lower revenue mobilization and greater reliance on indirect taxes representing more than 50% of government revenues in several countries, which have amplified revenue loss given contraction in international trade and domestic consumption. In EAP countries other than China, government revenues represent only 18% of GDP on average, compared to 25% in other developing countries and 36% in industrialized economies. Important fiscal deficits are expected to increase government debt projected to be on average by 7% points of GDP in 2020 (See Figure 4 in the Appendix) (World Bank, 2020b p.38).
[11] Aid volumes of the largest donor countries are likely to be negatively affected by the sharp drop in economic growth associated with the pandemic (OECD, 2020a; World Bank, 2020b).
Lessons from past crises show that economic shocks can indeed have negative impact on social spending, but evidence from past health crises indicates that it will not necessarily be the case everywhere (OECD, 2020c). For instance, during the Ebola pandemic in Sierra Leone, public education spending fell in real terms and as a share of the budget, falling from 15 to 12 percent of total government spending between 2014 and 2017. However, mixed impacts were observed from the financial crisis of 2008-09. In OECD countries, education budgets were initially protected during the crisis but following the crisis, a third of countries cut their overall education budgets and about half cut teacher salaries (OECD, 2013; World Bank 2020d). In East Asia, the financial crisis had no discernible effect on public education spending, including in Indonesia, Myanmar, and Vietnam (World Bank, 2020d, p.5).

The expected impact of the COVID-19 pandemic on education budgets bears some similarities with past crises. Thus far, some cuts have been observed among countries, while many have introduced additional financing to support education during the pandemic (See section 3.2) (OECD, 2020a).

In addition to tightening fiscal spaces, the pandemic has increased education costs. Schooling costs have risen as countries implemented large-scale distance learning methods, as well as new health and safety measures to protect students as schools reopen. However, these sanitary measures could prove hard or costly to implement as across the developing world, more than 40 percent of schools globally lacked handwashing facilities prior to the pandemic. Furthermore, high pupil-teacher ratios in many areas will likely make physical distancing challenging when in-person teaching resumes, unless additional classrooms and teachers are available (UNESCO and ILO, 2020).

Various estimations have been conducted to forecast the potential impact of the pandemic on education spending. According to the Center for Global Development, in the context of reduced growth projections, if the share of government spending on education remains the same post-COVID (between 3.7 percent and 4.7 percent of GDP in low- and middle- income countries), total education spending could drop by 2-4 percent in middle income countries (Le Nestour et al. 2020). Such drops in education spending could have lasting negative impacts on education outcomes.

The World Bank for its part analyzed the likely effect on public education spending of reduced GDP growth under two scenarios of stable and reduced education budget share. Even in the best-case scenario of constant education share, the economic shock is expected to reduce planned increases in education budgets in the short term. In many countries, education budgets could even fall in absolute terms, as governments grapple with lower economic growth and revenues. According to these forecasts, in low- and middle-income countries, the pandemic was expected to significantly reduce planned increases in education spending in 2020 (see Table 1 in the Appendix). In particular, if governments reprioritize their budgets and reduce the share allocated to education, the likely downside scenario is that per capita education spending would decline in almost all country income groups and regions. In EAP countries, under that scenario per capita education spending was expected to fall by 5.5 percent in 2020 (World Bank, 2020d, p. 4)

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[12] Latin America, the financial crisis had mixed effects on education spending, with some countries showing decline (e.g. El Salvador, Guatemala, Honduras) and other showing continued growth (e.g. Paraguay, Peru) (World Bank, 2020d, p. 5).
[13] For example, the WHO and UNICEF recommend physical distancing and the provision of PPE in schools in order to ensure safe reopening (UNESCO and ILO, 2020).
[14] Countries reliant on export commodities, including Angola and Nigeria, may be hit especially hard (Le Nestour et al 2020).
[15] The baseline scenario assumes that the share of the overall budget allocated to education remains the same and a downside scenario assumes a fall in the share of the budget allocated to education of 10 percent with governments reprioritizing their budgets towards health and social protection in the short run.
In 2021, even though a return to economic growth has been forecast, government spending growth is expected to be slow and, in some cases negative according to these estimations. If education’s share of the overall budget were to remain unchanged, the net effect on education spending would be that it would continue to grow, but at significantly lower rates than before the pandemic, especially in low- and middle-income countries. In high-income countries, education spending is forecast to decline in real terms along with overall government spending. In EAP countries, education spending growth is expected to be almost null (0.3 to 0.4%) (see Table 1 in the Appendix) (World Bank 2020d).

While overall fiscal impacts of the crisis are still unknown, it is important to protect education budgets. Reduced education spending could further degrade teaching and learning, amplifying learning loss and inequalities. Budget cuts could lead to reduced non-salary expenditures, such as for textbooks, learning material or infrastructure improvements, and in some cases reduced teachers’ employment and salaries, which can worsen the quality of schooling.[16]

Furthermore, when reductions in government spending result in reduced education services, it can also prevent parents from returning to work, having to stay home to take care especially of their young children. This would further depress household employment incomes and reduce education spending, slowing the overall pace of economic recovery (World Bank, 2020d).

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16 For instance, in the United States, during the Great Recession of 2008, national public-school per-pupil spending fell by about 7 percent and was associated with lower test scores and lower college admissions, especially among poorer households (World Bank, 2020a).
Without major efforts to counter their impacts, the economic and school-closings shocks will lead to learning loss, increased dropouts, and higher learning inequalities, inflicting long-run costs on human capital, equity and welfare (OECD, 2020e). Potential budgetary priorities to buffer the effects on the education sector are first examined. Budget responses put in place in past emergencies and in Asia and around the world in the context of the current pandemic are then reviewed.

3.1 EDUCATION EXPENDITURE PRIORITIES

Developing effective responses to the pandemic crisis place even greater demand on government education budgets. Public funds are needed to protect children, to minimize learning losses associated with school closures and to reduce distributional consequences on the most vulnerable children.

**DURING SCHOOL CLOSURES**, which still affect a large subset of countries and education levels, governments need to ensure that adequate resources, not included in previous budgets, are made available to provide for remote learning activities. Also, funding is necessary to maintain and expand student support programs, especially school feeding programs and other household transfer programs which are even more needed in the context of school closing. Resources to ensure continuous coverage of these programs are critical for enabling students continuous learning.[17]

**WHEN SCHOOLS REOPEN**, allocation of additional funding to schools is essential to implement new health and safety requirements. Funding is required also to undertake outreach activities needed to convince students to return to school (new and previous out-of-school students), and to support remedial teaching activities to minimize the learning losses due to school closures. It is especially critical that additional support be provided to disadvantaged children on which the effects of the pandemic fall disproportionately, most likely also more heavily on girls (Akmal et al, 2020). Such additional support is essential to ensure that they have opportunities to make up for learning loss during the school closure and to reduce widening gaps between student categories.

Availability of additional funding is important to ensure also that schools do not seek additional fees or contributions from parents and hence placing additional burden on families, in order to ensure that children return to school.

The use of school stipends, cash transfer programs and fee waivers could be considered given the evidence that they can help to encourage children to enroll and increase their attainment and learning. In Sierra Leone for instance, as part of the Ebola outbreak response, the government had waived school fees which proved an essential factor in encouraging children to return to school (World Bank, 2020d, p. 8).

[17] For example, in the US, the Coronavirus Aid, Relief, and Economic Security (CARES) Act has allocated US$12.6 billion to higher education institutions, with half of this funding earmarked for providing emergency aid grants for students including six-month deferments on student loans (World Bank, 2020a).
3.2 BUDGET RESPONSES

Part of the government overall fiscal responses to the pandemic, it is critical to protect education budgets over the next years and to improve the efficiency and effectiveness of existing budget, so as to minimize disruptions in education, but also to build more equitable, effective and resilient education systems.

Even though fiscal constraints are expected to be tight, protecting and increasing the education budget in the forthcoming years is essential to prevent a lost generation of students and a drop in human capital. Indeed, decrease in public education funding can have long-term effects on student learning outcomes, compounding the harmful impacts of the crisis on households’ ability to support children’s education.

Countries who cannot maintain or increase their pre-pandemic levels of spending in education given limited fiscal space need to find ways to reallocate resources for the pandemic response. Decisions over how to reallocate public spending involve difficult trade-offs, but priority must be given to funding health, social protection, and priority sectors, including education. These priorities will help to protect lives and livelihoods, but also minimize human capital and learning losses.

Budget reallocation to education from other parts of the budget will also help parents to return to work and to maximize the education sector’s contribution to long-term economic growth. In past crises, some countries have used fiscal stimulus packages to protect and mobilize resources for education also to revive their economies and enhance their medium-term growth prospects.[18]

When intersectoral budget readjustments are not feasible, reallocations within the education budget need to ensure that frontline services are protected. Funding additional costs associated with the pandemic response are to be prioritized. This might involve temporarily shifting resources from non-essential services to the frontlines and postponing capital investments in order to minimize disruptions to the quality of education services.

ACTUAL RESPONSES

Looking at countries’ actual responses to the COVID-19 crisis, the IMF policy tracker reports that countries such as Equatorial Guinea, Ethiopia, Panama, Sweden and the US have included additional education spending in their fiscal stimulus packages (IMF, 2020a). Other countries such as Algeria are making efforts to ensure that social spending, including education, is protected during the current crisis (World Bank, 2020d, p. 9).

According to results from 2 rounds of surveys conducted by UNESCO, UNICEF and the World Bank between May and October 2020,[19] almost all surveyed countries (95 per cent) reported providing additional funds to the education budget to cover COVID-19-related costs. Among Upper-Middle-Income countries (UMIC), such as Thailand, most additional funding came from increased domestic funding (63%) (See Figure 5).[20] Increased development assistance was reported by 58% of countries.[21]
Also, reallocations from within existing education budget was reported by almost 2/3 of UMIC.[22] For these countries who cannot increase or maintain their pre-pandemic levels of spending in education, such reallocation decisions involve difficult trade-offs within education budget, but would need to ensure that frontline services are protected. This might involve temporarily shifting resources from non-essential services to the frontlines, and postponing capital investments to minimize disruptions to quality of education services.

There are also evidence of countries that have cut their education budgets to allow increase spending on health and social protection. Budget cuts in education are reported by about one-fifth of countries surveyed. Cuts are more common in low- and lower-middle-income countries, with 42 per cent reporting education budget cuts (UNESCO, UNICEF and World Bank).[23]

Furthermore, 14% of countries report teacher wage bill reductions (12% of UMIC and 30% of LMIC). Among these countries, 64 percent also stopped the hiring of new teachers in 2020-21 (SeeFigure 6 in the Appendix) (UNESCO, UNICEF and World Bank, 2020, p. 40).

Also, 11 per cent of countries surveyed indicated that school feeding budgets were likely to be cut during this fiscal year or the next (Figure 6). The expected economic and welfare impact of such cuts are dire for poor households where the value of a school meal can be equivalent to about 10 per cent of a household’s monthly income (UNESCO, UNICEF and World Bank, 2020).

**EQUITY GAPS DURING THE PANDEMIC**

The disproportionate impacts that the pandemic exerts on vulnerable students add further urgency to tackling inequalities among student categories and increasing the targeting and effectiveness of public funding (World Bank, 2020d).

Prioritizing adequate financing to support recovery needs, especially for disadvantaged students is crucial. Lessons from past crises suggest that as funding becomes tight, disadvantaged students and schools suffer the most. Allocation mechanisms that have worked in past crises could be used for financing frontlines services and areas of greatest needs, for example through formula-based cash transfers to schools or (conditional or unconditional) transfers to households that prioritizes the most vulnerable (World Bank, 2020d).

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[22] Reallocations from within the existing education budget was less common in most countries, but especially in low-income countries (See Figure 5 in the Appendix) (UNESCO, UNICEF and World Bank, 2020, p. 39).

[23] For instance, Azerbaijan, Bulgaria, Ecuador, Kenya, Nigeria, and Ukraine have proposed cuts to education spending to support health or other stimulus activities. In Nigeria, basic education spending from the federal budget is expected to be cut by about 45 percent. In Ukraine, the education budget is set for a cut of around 4 percent in 2020 (World Bank, 2020d).
[4]

PRIORITIES AND INNOVATIONS TO CONSIDER AS A RESPONSE TO THE PANDEMIC SHOCKS

While there is few information available yet on best practices based on evidence for ensuring continuity of learning and for mitigating large and mounting learning losses during a global pandemic or other emergencies, some budgetary priority avenues and programs could be considered to help recover and rebuild stronger, more equitable and resilient education systems, especially using new education technologies (Lieberman, 2020; UNICEF, 2020c; World Bank, 2020i).

EQUITY GAPS: FINANCING AND DEPLOYMENT OF TARGETED SUPPORT

In the context of the current pandemic or other emergencies, support should be provided in priority to vulnerable students and groups, to help reduce learning losses and gaps across categories of students, including those with learning difficulties, socioeconomically disadvantaged students, those with disabilities and immigrants, that have further fallen behind during the school closure and the use of remote learning approaches.

The development of effective support programs and tutorial need to match individual students to required support, and to manage their progress and needs over time. Comprehensive evaluation and provision of needs, including nutritional, physical, mental, and socio emotional, must be put forward.

MONITORING AND ASSESSING STUDENT NEEDS

Budget priorities should also be given to monitoring the impacts of school closures and remote learning methods and at ensuring systematic assessment of student needs (Luna-Bazaldua and Pushparatnam, 2020). The range and magnitude of student learning and development must be assessed in order to devise targeted support programs. This would require for instance for principals and teachers to identify student needs, especially to flag students that have not been engaging in remote learning, that have been absent and that are behind grade level (Bowden et al 2020).

Such process would require also to develop mechanisms to identify and help students at risk of falling behind and of dropping out. For such purpose, teachers’ reports could be supplemented by grade, attendance records and other existing data, as well as surveys of parents and caregivers.

This could involve visiting or communicating with student families while schools rely on remote learning. For instance, in districts in the US, some teachers spend part of their work week going door to door to visit families, tracking students who were not logging on to virtual classes and whose education has been suffering. In the DC area for instance, teachers especially visited the city’s poorest neighborhoods to identify students at risk and to provide support (Goodnough, 2021).[24]

[24] Keeping track of students that don’t log on and making sure that students participate in classes during the pandemic has been a tall order across the US, with districts reporting record-high absentee rates. It can be especially difficult or
SUPPORTING PARENTS AND CAREGIVERS’ EDUCATIONAL INVOLVEMENT USING LOW TECHNOLOGY METHODS

Parents or caregivers, especially with young children, have taken on new roles during the pandemic to help with at-home learning. Support should be provided to help their effective involvement. Among the approaches devised to support parents in their remote education efforts, many LMICs education systems have used SMS, phone calls, and other accessible, affordable, and low-technology methods of information delivery.

Results from a randomized evaluation in Botswana show the promise of such model of parental support combined with low-technology curriculum delivery at contributing to student learning. In a first strategy evaluated, SMS texts were sent to households with a series of numeracy “problems of the week.” In a second strategy, the same texts were combined with 20-minute phone calls by NGO staff members, who walked parents and students through the numeracy problems (Bhula and Floretta, 2020).

Both interventions have shown to significantly improve learning, halving the number of children who could not do basic mathematical operations. Furthermore, parents became more engaged with their children’s education and had a better understanding of their learning progress.[25]

While such methods are imperfect substitutes for in-person schooling, these accessible, affordable and low-technology methods of information, can help engage parents in their child’s education and contribute to learning, even potentially after schools reopen (Bhula and Floretta, 2020).

BRIDGING THE DIGITAL DIVIDE AND REIMAGINING THE EDUCATION SYSTEM

Despite its current deficiencies, the hybrid education approaches brought about by the crisis — mixing in-person and remote learning, could be seen as an occasion to harness new education technologies and reinventing the current model (OECD, 2021; Reimers and Schleifer, 2020; UNICEF, 2020c; World Bank, 2020i).

Undeniably, in addition to low technology methods, new education technology—using for instance on-line approaches — offer important promises to enhance education provision and targeted teaching, and to make the education system more efficient, more equitable and more resilient to shocks. As emphasized by UNICEF (2020c) and the World Bank (2020i), the education system could be reimagined to build on new education technology. This reimagination of education involves devising comprehensive targeted support for vulnerable groups to allow leveling the playing field toward greater equality in access and academic achievement among groups and regions.[26]

If new education technology tools are adequately used, given their public good nature, efficiency gains in terms of pedagogical contents and provision could be achieved, which could allow providing high-quality learning tools and environment for all. High quality learning tools and pedagogy, provided equally and consistently for all, could help overcome the current deficit of teachers and competences in remote areas and small schools that confront many countries.

[25] In areas where internet access is limited, other governments and organizations are also experimenting with radio and TV to support parents and augment student learning. For instance, in Côte d’Ivoire, the MoE created a radio program on math and French for children in grades one to five, involving hundreds of short lessons. In India, the NGO Pratham collaborated with the Bihar state government and a television channel, to produce 10 hours of learning programming per week, creating more than 100 episodes to date (Bhula and Floretta, 2020, p. 2)
As UNICEF’s Reimagine Education initiative emphasizes, this revolution advance would involve:

- “The most vulnerable children and young people to be prioritised in getting connected and gaining access to quality digital learning;
- Digital learning to be relevant to each individual child and young person, including their level of education and language, and is accessible for children with disabilities;
- Education funding to be protected and for the needs of the most vulnerable children and young people to be prioritised; and
- Decision-makers to maximise innovation, impetus and investment through cross-community collaborations involving governments, businesses, community groups, industry pioneers and more.” (UNICEF, 2020c).

Indeed, a precondition for an education technology approach to provide more efficient and equitable education requires bridging the technological divide confronting vulnerable children. Currently, new education technology use is not feasible in many areas, as less than half of households in low- and middle-income countries (LMICs) especially have internet access (Bhula and Floretta, 2020).

Bridging the gap would initially require assessing technology needs and devising solutions to provide access to low-income households and other vulnerable groups. In addition to providing solutions to internet access and device gaps, technical support must be available for families to help develop technical skills. Vulnerable populations, in particular students with disabilities, with learning difficulties, socioeconomically disadvantaged students and immigrants, need more individualized support for using technologies and accessing schoolwork resources at distance. Furthermore, resources and training opportunities should be offered for students and families that are unfamiliar with technology.

Sustainable schools and education systems making use of in-person teaching and remote learning methods using education technology would also involve building learning networks in which teachers would be trained and prepared to provide distance learning and in-person instruction (UNESCO and ILO, 2020). Indeed, in addition to students and families, teachers need support establishing teaching methods and contents using new technologies. The implementation of such approach could involve for instance for the MoE and districts to survey teachers and school leaders about their needs and to support the development of instructional coaching programs and portals of resources to facilitate the transition to remote learning on the delivery side.

Ultimately, such approach harnessing new education technologies would ensure continuity in the learning process between the school and the home and community, help develop parents and caregiver involvement in education effort, and allow tacking advantages of the education technology promises and advances in terms of learning methods to make the education system more equitable and more resilient to shocks (World Bank, 2020h).

[26] As UNICEF’s Reimagine Education initiative emphasizes, this revolution advance would involve:

- “The most vulnerable children and young people to be prioritised in getting connected and gaining access to quality digital learning;
- Digital learning to be relevant to each individual child and young person, including their level of education and language, and is accessible for children with disabilities;
- Education funding to be protected and for the needs of the most vulnerable children and young people to be prioritised; and
- Decision-makers to maximise innovation, impetus and investment through cross-community collaborations involving governments, businesses, community groups, industry pioneers and more.” (UNICEF, 2020c).

[27] In the U.S., for instance, where millions of students do not have access at home to the digital devices and broadband internet, many school districts in several states have set up community Wi-Fi programs using hotspots, and have distributed laptops to students (EdTrust, 2020).
What would it take for an education system to be more resilient to risks and emergency situations, enabling countries to better respond to challenges and cope with future emergencies?

The COVID pandemic has highlighted the need to take action to build education systems more resilient to risks and emergency situations. In this section, we review studies that have examined issues of resilience of education systems and emergency planning at the international and national levels. We highlight some of the elements and questions addressed in developing a framework for education budget plan under emergency. Given the shortage of evidence on best practices, some useful country experiences of education emergency mechanisms are discussed, in particular those of Ethiopia, the USA and South Korea.

A recent study by UNESCO-UNICEF-GPE-FCDO (2021), Education Sector Analysis Methodological Guidelines (Vol. 3), devotes a chapter on the question of “Risk analysis for resilient education systems”. It sketches general considerations regarding risk mitigation and governance, and highlights some of the main questions that such country assessment needs to address. These include: “What policies, systems and practices are in place to strengthen the resilience of the education system to crises? “Are financial arrangements to fund education in emergencies adequate? ” (UNESCO-UNICEF-GPE-FCDO, 2021, p. 106).

It is recommended that crisis and risk management policy be institutionalized within the education system to enhance national education sector resilience and help countries better cope with future crisis. In particular, a dedicated team of education staff should be tasked with developing and implementing emergency policies, and coordination mechanisms especially with the health sector at all levels (central, decentralized and school). Options to help prevent disease outbreaks and pandemics from affecting education communities and prepare them to respond to such events should be developed.

Such emergency framework should seek to ensure access, quality, equity and management of the education system. Prevention activities include establishing strong communication and coordination mechanisms with regional local governments and communities and across sectors to help sustainable efforts during and after crisis hit.

According to UNESCO (2021, p.7), enhancing system resilience constitute a long-term goal and include the ability for education stakeholders to reflect on crises and build on experiences. Education system strengthening “…should be part of a continual quality improvement process that identifies lessons learned (which can be shared within and between countries); helps prepare, prevent, and respond to future crises; and takes strides towards institutionalizing crisis and risk management in the education sector.”

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[28] Frequency of natural disasters has increased steadily over the past century, from 9 in 1902 to more than 150 in 2015 (Cambridge Education, 2017).
Cambridge Education (2017) also provides guidance for education in emergencies. An initial step identified consists at reviewing current system and practices, assessing how well the education system at all levels is prepared to face, manage, withstand, respond to and recover from hazards and/or conflicts.

UNICEF (2019) “Risk-Informed Education Programming for Resilience Guidance Note” also provides a lens to review and develop education systems’ risk management arrangements. The study provides an overview on education risk analysis, program design and adaptation, and monitoring risks and programs.

In addition, the implementation of the World Bank’s SABER (Systems Approach for Better Education Results)’s module on education resilience could provide countries with complementary information and resources on education system resilience structure and practices. The education survey module focuses on four components: (i) managing and minimizing adversity in education; (ii) using and protecting positive engagement and assets in education communities; (iii) fostering relevant school and community support; and (iv) aligning education system services with resilience assets (UNESCO-UNICEF-GPE-FCDO, 2021, pp. 196-197).

Another integral part of a resilience analysis review of the education sector consists in contingency planning analysis. This includes analyzing risks and establishing advance arrangements so as to ensure timely, effective and appropriate responses at all levels within the sector. Ultimately, it would result in: “organized and coordinated courses of action with clearly identified institutional roles and resources, information processes and operational arrangements for specific actors at times of need, based on scenarios of possible emergency situations” (UNESCO-UNICEF-GPE-FCDO 2021, p. 208).

Such contingency analysis at the central level would also include the setting up of: “systems to safeguard and back-up student and personnel records, curriculum documents and examination information; budgeted contingency funds to cover rapid response costs; emergency procedures for rapid teacher recruitment and mobilization; special mechanisms to avoid disruption in teachers’ salary payments.” (UNESCO-UNICEF-GPE-FCDO 2021, p. 208). Another key component of a resilience analysis and the development of an education emergency framework consists at reviewing the adequacy of emergency funding mechanisms and developing emergency budget mechanisms.

According to ECW (2018), funding for emergency in education at the national and international level is severely underfunded. Resources for education in emergencies are especially scares at the international level. In 2016, they represented only 1.9 percent of total humanitarian spending and 3.5 percent of sector-specific humanitarian financing. The gap in financing is wide. It has been estimated that about 8.5 billion USD annually would be needed for humanitarian education funding to reach all children in need of education support, representing 20 times the 2016 level of education in emergencies funding (UNESCO-UNICEF-GPE-FCDO 2021, p. 208).

At the national level, assessing the preparedness of national budget systems to response to education emergencies involves reviewing emergency funding mechanisms preparedness and ensuring the development of emergency budget mechanisms. Questions that need to be addressed in a funding for emergency review include: What are the existing emergency budget response mechanism in place? Do the national education sector budget account for costs and financing of safety, resilience and social cohesion, and emergency preparedness activities?
What other sources of national funding are available in emergency situations? Does the MoE provide funds to ensure ongoing safety and maintenance of school facilities? (UNESCO-UNICEF-GPE-FCDO 2021, p.215).

Such analysis of funding for emergency in education preparedness include the review of public education funding by source (government, NGOs, international organizations, households) to assess the sources of emergency funding and determine the level of budget dependency on nongovernmental stakeholders. These information and data can help to analyze the funding gaps, assess equity and sustainability issues, and identify potential funding leverage for scaling up the risk prevention, mitigation, and response interventions (UNESCO-UNICEF-GPE-FCDO, 2021, p.212).

EVIDENCE OF BEST PRACTICES AND COUNTRY EXPERIENCES

Despite its importance and renewed interest in planning for education in emergency, few evidences on best practices are available on existing budget mechanisms for emergency, as well as on the supply side of emergency supply funds. A recent review conducted by Cambridge Education (2017) highlights the limited research on responses to natural disasters and how education systems could be programmed to address the need of emergencies. The study stresses that: “little is known about how to make education services more resilient to shocks and how to help the system to bounce back quickly after a disaster.” (Cambridge Education 2017, pp. 2-3).

Despite shortage of evidence on best practices on education emergency framework and budget mechanisms, some national and international experiences of education emergency mechanisms could be identified at the international and national levels. Still, very few specific evidence on budget mechanisms under emergency, sources of emergency funding (e.g. ODA, debt financing) and levels are available.

INTERNATIONAL LEVEL

The United Nations has created a coordination system in education aiming to enhance efficiency, accountability and coordination among education stakeholders working in emergency situations. The Education cluster, led by UNICEF and Save the Children, is set up to bring together all organization involved in EIE (Cambridge Education 2017). The Education cluster is involved in the context of protracted conflicts causing instability and displacement of civil populations it is also involved in refugee crisis as well as in the context of natural disasters. [30] At the country level, the Education cluster is meant to liaise with MoEs, as well as education donor groups and other organization to organize coordinate and implement EIE response within countries. Its main functions include supporting service delivery, informing decision making, planning and developing strategies (Cambridge Education 2017, p. 4).

Also, bilateral agencies have supported various education systems in crisis situations (Cambridge Education, 2017, p. 3). DEFID for instance recognizes the need to focus more on disaster preparedness, resilience and risk management to reduce subsequent dependency on humanitarian aid. It estimated that a pound invested in preparedness saves over 2 pounds in humanitarian aid and increases the speed of the response (Cambridge Education, 2017, p. 21).

[30] Natural disasters are defined as sudden and often unpredictable adverse events resulting from the earth’s natural processes causing significant disruption to human activities. These include geological, hydrological and meteorological crises. Sudden onset epidemics, such as Ebola crisis and the COVID pandemic, are considered as natural disasters (Cambridge Education, 2017).
NATIONAL LEVEL

A few countries have developed strategies and established contingency plans, including specific institutional arrangements in the education sector to deal with emergencies, in particular with regard to health and humanitarian crisis.[31]

For instance, in the wake of the COVID-19 pandemic, Burkina Faso updated its existing multi-risk strategy and accompanying three-year costed action plan to include prevention measures to health risks. These revisions include especially teacher training on health and sanitary measures and the expansion of sanitary infrastructure across school facilities (UNESCO 2021, p. 3).

In South Sudan, the General Education Strategic Plan (GESP) 2017–2022 which formulates the national roadmap for implementing, monitoring, evaluating and financing the education sector includes education in emergencies and humanitarian activities linking medium-term development objectives of the MoE (UNICEF, 2019, p. 4). Another example is that of Ethiopia.

ETHIOPIA

In Ethiopia, a multi-agencies education cluster was created to help coordinate education interventions and stakeholders in emergencies associated with natural disasters, conflict and refugees. Reactivated in 2016 in the context of droughts followed by floods that lead to shortage of drinking water and school feeding affecting more than 3 million children in several regions, the Ethiopia Education Cluster (EEC) aims at responding to emergency context and at ensuring safe and quality education during emergency situations (EEC, 2017, p. 5).

The EEC is under the leadership of the MOE, UNICEF and SCI and seeks at ensuring partnership between national, regional and local government levels and various international aid partners. In 2017, the EEC had about 20 active national and international, non-governmental and UN partners (EEC, 2017, p. 21). In addition to the national education cluster, 9 regional clusters are active in affected areas. The main functions of the EEC include: support service delivery; plan and implement EiE strategy; monitor and evaluate performance; build national capacity in preparedness and contingency planning in the education sector; and support advocacy. The individual agencies that respond simultaneously to emergencies under the coordination of the EEC are embedded with a response framework which involve six main components, includin initial assessment of needs and consultations, inter-cluster prioritization, definition of objectives, activities, outputs and outcomes (see Figure 7 in the Appendix).

In addition to monitoring and reporting on educational activities, the EEC shares the responsibility along with the MOE and partners to monitor and report on affected schools and children and has developed data collection mechanisms. The cluster applies an equity lens to its humanitarian interventions and seek at ensuring that the most marginalized children are included and benefit from education interventions (EEC, 2017: 20).

Overall, budget managed by the EEC in 2017 was about 45 million USD, which is mainly used for school feeding, learning supplies, sanitary infrastructure and temporary classrooms (EEC, 2017: 25). This emergency budget represented about 1.7 % of government expenditure on education in Ethiopia.[32]

[31] For instance, Thailand budget structure has a central fund under the prime minister and cabinet responsibility that could be used in emergencies.
POLICY LESSONS

Among the policy lessons that could be identified from the Ethiopian experience are especially the importance of:

1) Creating of a cross-sectoral government body to respond to crisis.
2) Building cross-sectoral contingency plans and budget plans under crisis with clear responsibility for each related agency.
3) Having a Monitoring and Evaluation (M&E) framework in place for emergency.

The pandemic experiences of two other countries, the USA and Korea, are also interesting to contrast.

USA

The USA is a good example of a country with a large-scale average decline in student learning during COVID-19, which has been reported to be taking place in many countries around the world (Azevedo, et al., 2020).

Recent data collected from 25 states among students tested after several months of pandemic school closures, show a significant decline in learning. Evidence indicate that primary level students on average learned only about 67% of the math and 87% of the reading that students in the equivalent grades have performed in previous years, representing a learning loss of an equivalent of 3 months of learning in mathematics and 1 1/2 months in reading.

In addition to setting back learning for all students, the pandemic has led to an important increase in inequalities in learning. Students from marginalized communities – minorities, poor and students with disabilities – experienced a larger gap compared with previous years, than children from wealthier families or in private schools. Ultimately, there is a need at the national level for adequate preparation to shocks in the education system. This would require identification of appropriate structures and mechanisms to coordinate education stakeholders and to make budget planning and systems responsive to future emergencies. As illustrated in Figure 8, learning loss was especially acute in schools serving minorities, where scores were 59% of the historical average in math and 77% in reading.

Some key explanation factors relate to the US context. The US school systems were mostly unequipped to respond when COVID-19 began spreading. Indeed, the American education system is fragmented among 50 state systems, with weak financing and leadership roles of national and state governments. These various education systems are essentially built around in-class experience, from technology investments in school-level broadband internet and devices, to curriculum design and how teachers are trained. Also, in many communities, schools are also the hub for supports, such as school meals, mental-health counseling, and childcare. In many homes, especially for low-income families, students lack access to the internet, devices, and a dedicated, quiet place to study (Dorn et al., 2020).
SOUTH KOREA

At the opposite end of the spectrum is the case of South Korea which presents a very low level of student learning loss during the pandemic. Available evidence based on student evaluations show that Korea was able to avoid learning loss due to school disruption. Average student performance stayed about the same across grades, subjects, performance levels and areas of the country following the crisis. For instance, assessment results in middle and high schools show very little learning loss (about 0.6% in 8th grade and 1.1% net decrease in 10th grade). However, learning inequalities increased somewhat, especially for higher grades (Yarrow et al., 2021).

As illustrated in Figure 9, despite low level of learning loss on average, the number and percentage of Korean students performing in the middle of the distribution in grades 8 and 10 declined in 2020, while the number of students at the top and bottom of the performance distribution increased, resulting in a modest increase in inequality of learning levels during the pandemic.

The resilience of Korea’s education system to the crisis could be seen as resulting from an intentionally designed system, enabled at the core by an education technology (EdTech) policy dating back from almost 3 decades. Key factors for this success include strong human capacity, teacher and student in EdTech, high levels of investments, including connective infrastructure, and developing high-quality learning materials for use online, and maintaining a stable policy environment (Yarrow et al., 2021).

Korea’s EdTech investments date back since 1996, with master plans updated every four years, focusing on establishing infrastructure, developing educational content and platforms, and providing teacher training, and establishing norms. For instance, the government established Information Communication Technology (ICT) skills standard and accreditation systems for teachers, based on an analysis of teachers’ digital literacy levels and their responsibilities at schools. These various master plans were fully financed and implemented over the first 15-year period, and as a result, all schools in Korea were equipped with ICT infrastructure. On the budgetary side, the Korean government’s budget for EdTech is large and increasing. In 2020, it was approximately US$1.5 billion, representing about 2% of education budget, which is almost four times more than the budget in 2016 in nominal terms (MOE, 2021).

After the outbreak, education was moved completely online starting in April 2020, and the Ministry of Education (MOE) worked with other government ministries and stakeholders to support all students. For example, the MOE cooperated with the Ministry of Science and ICT, Statistics Korea, and provincial education offices along with private companies to provide digital devices and subsidize Internet subscriptions fees. The MOE also carried out an emergency childcare program, cooperating with the Ministry of Gender Equality and Family, and the Ministry of Employment and Labor, to support students and families during online classes (Yarrow et al, 2021).

[33] More recent Master Plans (2011-2018) have been focused on strengthening EdTech equity and quality, and support more flexible and personalized learning such as the SMART education and digital textbooks. The education policy introduced in 2012, facilitating “Self-directed, Motivated, Adaptive, Resource enriched, Technology embedded (SMART)” education to promote students’ self-learning using data and technology, according to their personal needs and learning levels (Yarrow et al, 2021).
POLICY LESSONS[34]

1) Korea experience highlights the possible system-level resilience enabled by EdTech. With large and continued investments in developing staff and student capacities, a country’s education system can mitigate learning losses and be resilient and inclusive for future threats.

2) Human infrastructure should be the primary focus of EdTech strategies.[35] It is necessary to provide EdTech training to all teachers and establish ICT standards and accreditation systems.

3) Special attention should be placed on student achievement gaps, with a focus on the poorest and those at the bottom end of the learning curve. The differential impact of online learning should be considered. The educational polarization in Korea demonstrates that EdTech could be a way to address existing inequalities but could also exacerbate them.

4) Long-term financing strategies rather than one-off procurements are helpful. Due to the investment size and its recurrence, the annual budget allocations should align with multi-year EdTech plans (resources permitting). Infrastructure could be expanded through private-public partnerships.

5) Ensure inclusive remote learning for students with disabilities. Targeted support should be provided for vulnerable students with different disabilities.

6) Pursue a comprehensive government and multi-stakeholder approach, and incorporate evidence-based approaches in EdTech in order to seek efficiency and effectiveness. The Korean government consistently promoted strong linkages between ICT and education policies, as well as the clear roles and responsibilities of different government ministries and stakeholders for effective policy implementation, and broader policies that promote long term economic development.

CONCLUSION

Education systems around the world are vulnerable to various shocks related especially to health epidemics and other natural disasters, conflicts and economic shocks. The COVID-19 pandemic which has severely affected education systems and caused significant learning losses has highlighted the importance of emergency contingencies to ensure resilient education sectors to sustain learning.

The COVID-19 crisis is exacerbating the learning crisis that have been facing many developing countries before the pandemic, further amplifying learning poverty and inequalities between student categories and areas.

Confronting these important learning losses and inequalities, districts and schools need to systematically assess the impacts of school closures and remote learning on students, and to implement targeted individual support programs aiming at reducing learning losses and at bridging learning gaps across students, prioritizing vulnerable demographic groups.
The blended education approaches brought about by the crisis, mixing in-person and remote learning, despite its current deficiencies, could be an occasion to harness new education technologies, to make the education system more efficient, more equitable and more resilient to shocks. For this rupture of the traditional mode of teaching and learning to be consistent with both efficiency gains and learning inequality reductions, bridging the technical divide facing vulnerable children is a necessary condition.

As emphasized by UNICEF (2020c) and the World Bank (2020i), this reimagination of education involves devising comprehensive targeted support for vulnerable groups to allow leveling the playing field toward greater equality in access and academic achievement among groups and regions.

Ultimately, there is a need for adequate preparation to future shocks in education systems which would require identifying appropriate mechanisms for contingency planning and coordination of education stakeholders at the national, regional and local levels, to make budget planning and systems more responsive to future natural disasters and other emergencies.

Best practice evidence should become available as countries’ COVID responses and emergency mechanisms are further analyzed, but already some recommendations could be formulated in light of the importance of planning for future emergencies.
RECOMMENDATIONS

1) A study group should be established to examine the possibility of creating an education in emergency response strategy framework -- a new cross-sectoral institution improving the existing mechanisms for education under emergency.

Such framework should include an institutional structure which would allow ensuring contingency planning and preparedness to future shocks and coordinating the various stakeholders active in education during emergencies at the various levels.

The task of the study group should also include defining a budgetary framework to ensure appropriate funding sources to invest in preparedness and response during crises.

The national model of Ethiopia or the international level “Education cannot wait” (ECW) global fund, which seeks at coordinating and canalizing foreign aid to countries affected by crisis, could be potential models for a national-level education emergency framework.

2) Ensure that financing priority is given to disadvantaged students who suffer the most during a global emergency. This includes monitoring and devising targeted support programs to vulnerable students, and students at risk of falling behind and of dropping out.

3) Seek support from external funding sources in preparation of emergencies and explore innovative financing methods, such as Social Impact Bonds.

4) Move toward the introduction of Medium-Term Expenditure Framework (MTEF) in education to improve budget planning and resilience of education budget plans.

5) Explore potentials of Korea’s EdTech strategy approach. Korea experience highlights the possible system-level resilience enabled by EdTech, but also analyze what additional steps could be taken to reduce learning inequalities.

[36] Founded in 2016, the ECW is a global fund under the management of UNICEF to provide a collaborative and rapid response to provision of education in emergencies. See for details: https://www.educationcannotwait.org/?gclid=EAIaIQobChMIz6GG2dqB8wIV3QiICR34fwv6sEAAAYASAAEgJztvD_BwE


[38] On MTEF, see for instance: http://www1.worldbank.org/publicsector/pe/MTEFprocess.doc#-text=MTEF%20s%20a%20%20transparent%20planning,while%20ensuring%20overall%20fiscal%20discipline
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APPENDIX

Figure 1: The effects of the COVID-19 shock on learning are likely to be larger among the poor than among the wealthy

The share of students achieving below minimum proficiency on PISA/PISA-D tests (measured by PISA scores below 2)

Source: Cloutier et al. (2020).
Note: Share of students below minimum proficiency levels, as measured by a PISA score of less than 2. Simulation results based on the latest available PISA and PISA-D scores for 15 countries (unweighted average).


Figure 2: Domestic and external shocks have sharply reduced growth in the EAP region

Note: Year on year growth.

Source: World Bank (2020b, p. 5)
Figure 3: Additional Poor at the US$1.90-a-Day Poverty Line in 2020, per the COVID-19-Baseline, and COVID-19-Downside Scenarios

Figure 4: Fiscal positions in EAP countries are expected to deteriorate and add to government debt

Source: World Bank staff estimates.
Note: Estimates refer to general government, except for Indonesia and Malaysia, which refer to central government only.

Source: (World Bank 2020b, p.21)
Figure 5: Additional financial resources received for education response to COVID-19, by source of funding and income

Figure 6: Countries with budget declines in 2020-21, by component and income group

Note: This figure presents the share of countries that indicated a reduced government budget in 2020 or 2021 either on wage bills (either without teachers or school feeding in relation to (n) the number of countries that have provided a valid response on questions relating to fiscal budget declines. Caution is advised in generalizing the results represented in the figure as the countries that responded to this question cover less than 50 percent of the total 4-17 year old population. More information on the coverage of each income group can be found in Annex 1.

Table 1: Forecasts point to a significant slowdown in public education spending

Real growth in education spending per capita (%)

<table>
<thead>
<tr>
<th>Region</th>
<th>2020 pre-COVID</th>
<th>2020 (b)</th>
<th>2020 (d)</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Income</td>
<td>1.3</td>
<td>5.4</td>
<td>-5.1</td>
<td>-2.6</td>
</tr>
<tr>
<td>Upper Middle Income</td>
<td>1.9</td>
<td>1.8</td>
<td>-8.3</td>
<td>0.4</td>
</tr>
<tr>
<td>Lower Middle Income</td>
<td>2.5</td>
<td>1.8</td>
<td>-8.4</td>
<td>0.8</td>
</tr>
<tr>
<td>Low Income</td>
<td>14.0</td>
<td>11.1</td>
<td>0.0</td>
<td>2.5</td>
</tr>
<tr>
<td>East Asia and Pacific</td>
<td>1.8</td>
<td>5.0</td>
<td>-5.5</td>
<td>0.3</td>
</tr>
<tr>
<td>Europe and Central Asia</td>
<td>2.0</td>
<td>4.3</td>
<td>-6.1</td>
<td>-1.7</td>
</tr>
<tr>
<td>LACAB</td>
<td>3.6</td>
<td>3.1</td>
<td>-7.2</td>
<td>1.2</td>
</tr>
<tr>
<td>MENA</td>
<td>1.9</td>
<td>3.8</td>
<td>-6.6</td>
<td>-2.4</td>
</tr>
<tr>
<td>South Asia</td>
<td>7.2</td>
<td>4.0</td>
<td>-6.4</td>
<td>5.3</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>7.7</td>
<td>6.5</td>
<td>-4.2</td>
<td>0.0</td>
</tr>
<tr>
<td>All Countries</td>
<td>3.6</td>
<td>4.8</td>
<td>-5.7</td>
<td>-0.5</td>
</tr>
</tbody>
</table>

Note: (b) = baseline, (d) = downside. Source: World Bank (2020d, p. 40)
Figure 7: Ethiopia Education Cluster Response Framework

**Need**
As determined through Meher Assessment finding and consultation with partners

**Objective**
Represents the changes that EEC aims to achieve in responding to the identified needs

**Activities**
Actions taken through which inputs are mobilized to produce specific output

**Output indicator**
A measure of products, goods or services that resulted from the completion of the activities

**Activity outcome**
A measure of the short term effect of an activity on the targeted beneficiary group

**Objective outcome**
The measure of the EEC progress towards achieving success against objective of the cluster

Source: Ethiopia Education Cluster (2017) p. 14
Figure 8: USA: Increased inequality gaps in learning in math and reading

Most students are falling behind, but students of color are faring worse


Figure 9: Percentage change of students from 2019 to 2020 in each achievement level (8 and 10th grades)
