THE COVID-19 PANDEMIC:
SHOCKS TO EDUCATION AND POLICY RESPONSES

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Executive summary

Even before the COVID-19 pandemic, the world was living a learning crisis. Before the pandemic, 258 million children and youth of primary- and secondary-school age were out of school.[1] And low schooling quality meant many who were in school learned too little. The Learning Poverty rate in low- and middle-income countries was 53 percent—meaning that over half of all 10-year-old children couldn't read and understand a simple age-appropriate story.[2] Even worse, the crisis was not equally distributed: the most disadvantaged children and youth had the worst access to schooling, highest dropout rates, and the largest learning deficits.[3] All this means that the world was already far off track for meeting Sustainable Development Goal 4, which commits all nations to ensure that, among other ambitious targets, "all girls and boys complete free, equitable and quality primary and secondary education."

The COVID-19 pandemic now threatens to make education outcomes even worse. The pandemic has already had profound impacts on education by closing schools almost everywhere in the planet, in the largest simultaneous shock to all education systems in our lifetimes. The damage will become even more severe as the health emergency translates into a deep global recession. These costs of crisis are described below.

But it is possible to counter those shocks, and to turn crisis into opportunity. The first step is to cope successfully with the school closures, by protecting health and safety and doing what they can to prevent students' learning loss using remote learning. At the same time, countries need to start planning for school reopening. That means preventing dropout, ensuring healthy school conditions, and using new techniques to promote rapid learning recovery in key areas once students are back in school. As the school system stabilizes, countries can use the focus and innovativeness of the recovery period to "build back better." The key: don't replicate the failures of the pre-COVID systems, but instead build toward improved systems and accelerated learning for all students.

Unprecedented global shocks to education

The twin shocks of school closures and global recession could have long-term costs to education and development, if governments do not move quickly to counter them. The school closings shock will lead to learning loss, increased dropouts, and higher inequality; the economic shock will exacerbate the damage, by depressing education demand and supply as it harms households; and together, they will exact long-run costs on human capital accumulation, development prospects, and welfare.

School closures: As of late April, schools have closed in 180 countries, and 85% of students worldwide are out of school.[4] Without aggressive policy action, this will have immediate costs on both learning and health of children and youth:

- **Learning will decline and dropouts will increase, especially among the most disadvantaged.** Students will largely stop learning academic subjects, and the decline may be greater for preschool-age children, whose families are less likely to prioritize their learning during school closures. Learning inequality will increase, because only students from wealthier and more educated families will have the support to learn at home. Finally, dropout risk will rise, as the lack of encouragement from teachers reduces the attachment to schooling for marginal students.
- **Health and safety will also suffer, without the support and structure that schools provide.** Student nutrition and physical health will be compromised, because some 368 million children worldwide rely on school feeding programs. Students' mental health may also suffer, due to isolation during social distancing and the traumatic effects of the crisis on families. Youth out of school may engage in more risky behavior, and adolescent fertility may increase.

Economic shock: The IMF projects that the global economy will shrink 3 percent in 2020, a much bigger drop than during the global financial crisis of 2008-09.[5] This shock will have severe consequences for both governments and households, and it will hit both the demand for and supply of education:

- **Student dropout will rise,** with many students leaving schooling forever, and the higher dropout will be concentrated in disadvantaged groups. When schools reopened after the Ebola crisis cost nearly an entire academic year in Sierra Leone, girls were 16 percentage points less likely to be in school. Higher dropout will likely be accompanied by increased child labor and child marriage for children and adolescents.

- **Learning will suffer even more,** due to economic pressures on households. Even for students who do not drop out, households will be less able to pay for educational inputs—such as books at home or private lessons—until the economy recovers. And parents may move their children from private to public schools, adding pressure and lowering quality in already over-stretched public-school systems.
- **On the supply side, the economic shock will hit schools and teachers.** Fiscal pressures will lead to a drop in education investments, reducing the resources available to teachers. And teaching quality will suffer (either online or when schools resume), as the health crisis hits some teachers directly, and as others suffer from financial pressures due to salary cuts or payment delays. The lack of student assessments during the closures means that teachers will be flying blind on learning as they try to support their students remotely. Finally, the supply of schooling may contract as a lack of revenue forces private schools out of business.

Long-term costs: Left unchecked, these impacts will exact long-term costs on both students and society. Given the likely increase in learning poverty, this crisis could prevent a whole generation from realizing their true potential. Students who are forced to drop out of school or experience significant declines in learning will face lower lifetime productivity and earnings. Inequality will rise, because these impacts will likely be greater for students from poor and marginalized households. The children who need education the most to climb out of poverty will be the ones most likely to be deprived of it by the crisis. This decline in economic prospects could lead in turn to increase in criminal activities and risky behaviors. Social unrest among youth could also rise: in many low- and middle-income countries the combination of a youth bulge and poor prospects could prove a combustible mix. These adverse impacts may reverberate for a long time, as lower human capital in the current student cohort—concentrated among the most disadvantaged—perpetuates the vicious cycle of poverty and inequality.

From crisis to opportunity: Stop the damage, then build back better

These severe consequences—and especially the long-term impacts—are not inevitable. There is no doubt that there will be significant costs to education, and virtually everything else that societies value, in the short term. But if countries move quickly to support continued learning, they can at least partially mitigate the damage. And with the right planning and policies, they can use the crisis as an opportunity to build more inclusive, efficient, and resilient education systems.

The policies to turn this around can be grouped in three overlapping phases: Coping, Managing Continuity, and Improving and Accelerating.

Phase 1: Coping: For the first phase, as countries cope with sudden school closures, the priority is to protect student health and safety and prevent learning loss.

- In addition to protecting students and families from infection, many countries are putting in place **supplemental nutrition or cash transfer programs** to ensure that students who ordinarily depend on school feeding programs do not go hungry.
- To prevent learning loss, **emergency remote-learning programs** have been deployed across the world, from Nigeria to Norway. The best use platforms (such as TV, radio, and smartphones) that can reach every child, regardless of household income. These inclusive approaches are critical: without explicit policies to reach disadvantaged households, only wealthier and more educated families will be able to cope with the shock.
- Beyond providing remote learning, education systems should proactively prevent dropout through **communication and targeted financial support for at-risk students**. Outreach to families can also be an important channel for providing guidance and resources on how best to support children at home while schools are closed.
- Finally, countries should **draw on their universities and other post-secondary institutions** for technology support (for example, to ramp up remote learning), rapid training (such as training of nurses and laboratory technicians), and access to global knowledge.

Phase 2: Managing Continuity: As rules around social distancing are gradually relaxed, systems need to ensure that schools reopen safely, student dropout is minimized, and learning recovery starts. Reopening of schools may be a complex process, with staggered openings and possibly cycles of re-closing during flareups. Systems need to start planning for

this, learning from the experience of systems like China and Singapore that have been through the process. Beyond ensuring healthy schools, much more needs to be done:

- In many low- and middle-income countries, reopening would need to be preceded by **reenrollment campaigns** to minimize student dropout. Groups that may be at higher risk of dropout (such as girls or students from marginalized communities) should receive targeted support and communications.
- Once students are back in school, **learning recovery** is a top priority, to prevent permanent impacts on the opportunities of children and youth. This will require a raft of measures targeted at reversing learning losses, from improved classroom assessment to more focused pedagogies and curriculum (to allow teaching at the right post-closures level) to blended use of teaching and technology. These efforts will need clear system-level guidance and materials, as well as focused, practical training for principals and teachers. It will also require substantial resources, meaning that education budgets must be protected, at a time when families will be less able to support education at home and the demands on public schools might increase.

Phase 3: Improving and Accelerating: The crisis also offers an opportunity to build back educational systems stronger and more equitable than before.

- After the pandemic, parents, teachers, mass media, the government, and others will have **changed their views and perceptions** about their role in the education process. For example, parents will have a better understanding of the need to work jointly with the schools to foster the education of their children. Equity gaps will have been made more evident, along with the urgent need to narrow them. There will be a better understanding of the digital divide—the differences in access to hardware, connectivity, and the right software, but also the huge shortfall of teachers with the digital skills.
- This will create an opening. It is important to use it to **build back better**. Innovations in the Coping and Continuity periods will have shown what is possible when countries focus on the most effective and equitable approaches to close learning gaps for all children. It is crucial to learn from those successes and integrate them into regular processes—including through more effective use of technology in remote-learning systems; early-warning systems to prevent dropout; pedagogy and curriculum for teaching at the right level and building foundational skills; and ramped-up support for parents, teachers, and students, including socioemotional support.

The drive for better education has to start now

Every education system in the world is in emergency-response mode. This is entirely appropriate, given how suddenly this crisis arrived. The immediate priority is coping—which means first protecting health and safety and then doing everything possible to keep students engaged through remote learning and other connections with the school.

But the planning for a better future has to start now. Even as systems cope with school closures, they need to start planning how to manage continuity when schools reopen and how to improve and accelerate learning. The guiding principle should be to use every opportunity, in each phase, to do things better. By learning from innovations and emergency processes, systems can adapt and scale up the more effective solutions. In doing so, they could become more effective, more agile, and more resilient. A vision and proactive action will help not only mitigate the damage from the current crisis, but could turn recovery into real growth. Societies have a real opportunity to "build back better." They should seize it.

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Introduction

The COVID-19 pandemic has already had profound impacts on education by closing schools at all levels almost everywhere; now, the damage will become even more severe as the health emergency translates into a deep global recession. This note describes the shocks hitting education systems and outlines how countries can respond to them.[6]

Even before the COVID-19 pandemic, the world was in a learning crisis.[7] Most countries were seriously off-track in achieving Sustainable Development Goal 4.[8] That goal commits the world to ensure "inclusive and equitable quality education and promote lifelong learning" for all by 2030, but so far even universal high-quality schooling at the primary level—let alone secondary, tertiary, or lifelong learning—has proven unachievable for many countries. The Learning Poverty indicator showed that, before the pandemic, 53 percent of 10-year-olds in low- and middle-income countries were not able to read and understand a simple text.[9] And the crisis is not equally distributed: the most disadvantaged have the worst access to schooling, highest dropout rates, and lowest-quality schooling.

Without aggressive policy action, the shocks to schooling and the economy will deepen the learning crisis. Children and youth who are forced out of school may not return; those who do return will have lost valuable time for learning and will find their schools weakened by budget cuts and economic damage to communities. Many students would have lost their most important meal. And with the poorest households hit hard by the ensuing economic crisis, the opportunity gaps between rich and poor will grow even larger. Beyond these short-run impacts on schooling and learning, countries will ultimately suffer significant long-term losses in education and human capital.

But there is much that can be done to reduce these immediate costs, and ultimately to turn the crisis response into long-run improvements in education. This paper describes the main shocks hitting the education sector as a consequence of the pandemic, and it lays out policy responses—policies that can dampen the harm to students and communities in the short run; drive learning recovery as schools reopen, with an emphasis on closing the learning and schooling gaps that could have widened; and help education systems "build back better" as they regain their footing, accelerating their path of improvement and moving out of the learning crisis.

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Shocks to education

The COVID-19 pandemic will threaten education through two main types of shocks: (1) the immediate impacts of school and university closures, and (2) the impacts of the economic recession sparked by the pandemic response, which have already begun and will deepen for some time to come. These shocks will threaten all the main drivers of learning—prepared and engaged learners, effective and supported teachers, well-equipped classrooms, safe and inclusive schools, and good system management. Unless countries mount major efforts to respond, together the shocks will exact long-run costs on human capital and welfare. Figure 1.1 summarizes these impacts.

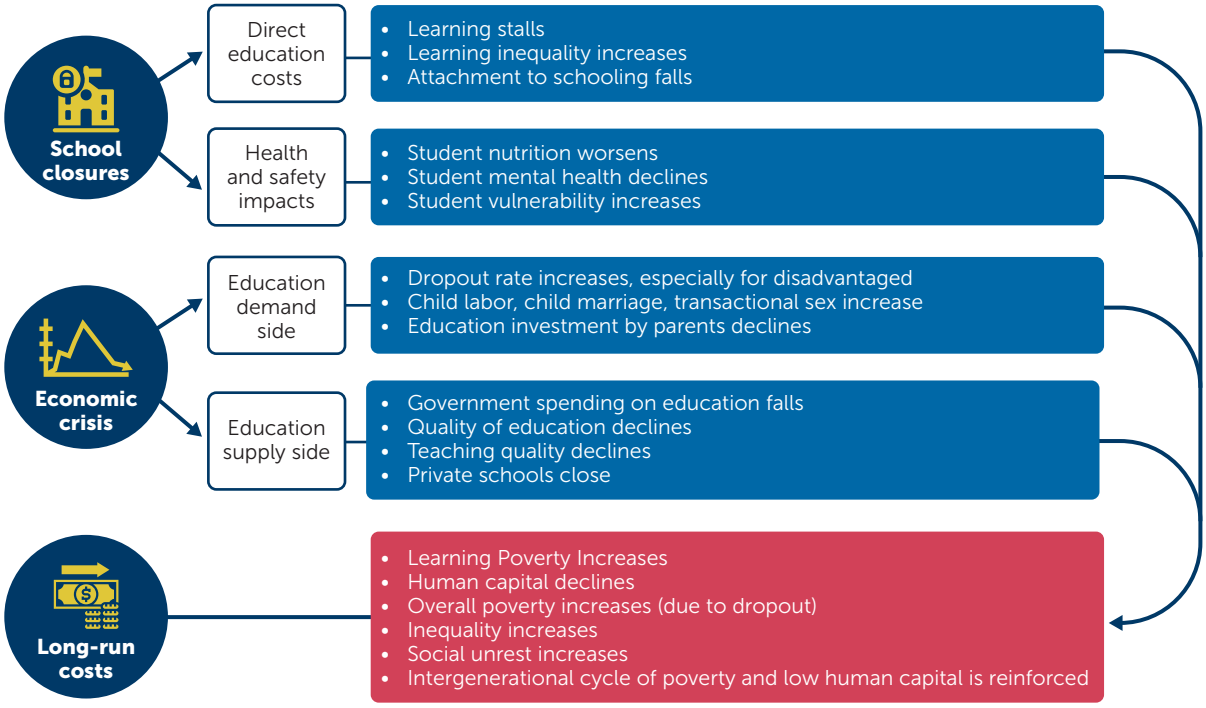
School closures

Most countries have closed all their schools, while others have closed part of their systems. In the absence of effective mitigation programs—for example, distance-learning programs and nutritional supports—the school closures will have many detrimental impacts on children and youth. Some of these impacts will be exacerbated by social distancing policies, which could prevent students from benefiting from community or other sources of support.

Learning impacts

For most children and youth, academic learning will come to a halt. As of April 24, 2020, schools have closed in 180 countries, with many countries announcing extension of closures through the end of April or May.[10] In the Northern Hemisphere, in many systems classes are finished for the year, and in the Southern Hemisphere uncertainty is high. These school closures are affecting approximately 85 percent of the world's student population.[11] Even though students in many low- and middle-income countries learn far less per year of schooling than in the highest-performing countries, learning does take place in even the poorer-performing systems. One indication of this is the significant learning loss that students ordinarily experience during school breaks, for example among early-grade students in Malawi.[12] Moreover, the time out of school can actually lead to learning losses that continue to accumulate after schools reopen. In the four years after a 2005 earthquake in Pakistan that closed schools for about 3 months, students who had lived closest to the fault line lost learning equivalent to 1.5 to 2 years of schooling.[13] In the current crisis, if a quarter of the school year is lost due to school closures, the number of 10-year-old children in learning poverty in Brazil will rise by an estimated 84,000 (or 6 percent)—even if the learning losses stop when schools

Figure 1.1: Shocks to education



reopen.[14] These losses in cognitive domains (such as literacy, numeracy, and reasoning skills) will be easiest to quantify, but there could be costs to learning in socioemotional areas as well.

In tertiary education, too, academic and research activities have basically come to a halt. As of April 8, universities and other tertiary education institutions are closed in 175 countries and communities, and over 220 million postsecondary students have had their studies ended or significantly disrupted due to COVID-19.

Early childhood education and foundational learning in early primary school, in particular, are likely to be negatively impacted. As most households and education systems will prioritize continued learning for older children while schools are closed, emphasis on early childhood education may decline. This may also be because children at this age (0–8 years) are less able to independently take advantage of remote-learning programs and tools. This period of child development and initial instruction for literacy and numeracy is essential for the development of foundational learning skills on which all future learning rests. Student learning is cumulative: if they fail to acquire foundational skills in early grades, children may find it much more difficult to learn later.[15] Hence a crisis-driven weakening of early childhood development and foundational learning in early primary school will mean lower learning trajectories for a whole generation. Stress caused by the crisis could compound these learning problems: stress hormones can disrupt early brain development and cause long-term damaging effects on learning, behavior, and health.[16]

Learning inequality will increase. High levels of learning inequality are already a feature of many low- and middle-income systems, but the closures will exacerbate this problem. The most educated and wealthiest families will be better able to cope with the challenges posed by the crisis and sustain their children's learning at home. They are more likely to have computer equipment and connectivity, a space to work, and books and other learning materials at home; they are more likely to have the knowledge necessary to support their children and teach them academic subjects themselves, as well as to provide emotional and motivational support; and in some systems, they will more likely hire virtual private tutors to keep the instruction going. In the Latin America and Caribbean region, for instance, only 30 percent of children from low-socioeconomic-status (SES) families have access to a computer, compared with 95 percent of children from high-SES families. Even for a lower-tech item, a desk, the gap in access is wide: 50 percent versus 91 percent.[17] All this means that when schooling restarts, disadvantaged children will find themselves even further behind their peers. In non-crisis settings, this pattern is evident during school breaks: children from disadvantaged families show higher rates of summer learning loss during school vacations, perhaps because of differences in time use and support.[18] During the crisis, differential access to remote learning and conditions at home could widen this gap further.

Attachment to schooling may also fall. For some children and youth, being out of school may cause disengagement and reduce their schooling persistence. Children who were already tenuously connected to school could be further discouraged, making them especially vulnerable to dropping out as the economic shock hits. For instance, interest in going back to school may be much lower for vulnerable or struggling students if they feel they will not be able to catch up due to school closures and if schools do not offer extensive support for remedial learning. School access for learners with disabilities was already a major challenge before the crisis,[19] and the number of out-of-school children with disabilities is likely to grow. Because persons with disabilities face higher rates of multidimensional poverty,[20] with an especially strong relationship in low-income countries, they could be especially vulnerable.[21]

Health and safety impacts

Student nutrition and physical health will be compromised. Although COVID-19 itself does not affect children and youth as severely as it does adults, as school feeding programs close, children who rely on them for nutrition may go hungry and malnourished. School feeding programs are found in nearly every country in the world. In 2013, approximately 368 million children worldwide relied on these programs.[22] With the COVID-19-related school closures, within the United States alone, around 30 million children from disadvantaged households who rely on school feeding programs for vital nutrients will be at risk of going hungry.[23] In Latin America and Caribbean, it is estimated that for 10 million children, school feeding programs constitute one of

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the most reliable daily sources of food.[24] These programs are hugely important for determining children's total caloric and nutrient intake.[25] A quasi-experimental study from the Philippines showed that each additional calorie provided in school led to an identical increase in the total calories consumed by the student during the day.[26] Similar results were found in school feeding programs in India[27] and Bangladesh,[28] which may explain why after the 2008 financial crisis, the World Bank experienced unprecedented demand to strengthen support for school feeding programs.[29] Finally, school closures will also shut down crucial deworming programs in many low- and middle-income countries. These programs, administered through schools, have been highly effective in preventing parasitic worm infections that are common in Africa and South Asia.[30]

Student mental and emotional health will suffer. It is estimated that 10 to 20 percent of children and adolescents around the world suffered from mental disorders *before* the pandemic.[31] Moreover, research has consistently shown that children often experience psychological stress following natural disasters and other crises.[32] School closures, fear of COVID-19, and the social and economic disruptions that accompany the pandemic will likely increase stress within the family and lead to anxiety and depression, including among children and youth.[33] They may suffer fear and grief after experiencing sickness or the loss of friends or family members.[34] Research shows that prolonged stress can impair students' learning and threaten their future development.[35] Furthermore, parents and teachers may have difficulty responding adequately to threats to students' mental and emotional well-being during the pandemic, given that they lack the necessary training and are likely to experience elevated levels of stress and anxiety themselves. According to a recent quick survey that the Organisation for Economic Co-ordination and Development conducted of decision makers in 330 educational organizations across 98 countries, including many developing countries, education systems have been facing enormous challenges in addressing students' emotional health.[36]

Students' vulnerability to violence and other threats may increase (e.g., in refugee camps). For many students, and especially those living in fragile contexts, school can provide a (relative) haven from violence and other external threats, as well as access to services such as psychosocial support. With the closure

of schools, children may be more exposed to gender-based and other violence, including in the home.[37] Stress among parents is associated with child abuse and neglect, and there is some suggestive evidence that domestic violence has already increased since the COVID-19 crisis began.[38] Experiencing or witnessing violence can have long-term consequences for a child's health and overall well-being.[39] There is evidence that during the Ebola outbreak in West Africa, as school closures were put in place, adolescent girls were vulnerable to coercion, exploitation, and sexual abuse, some of which resulted in an increase in unwanted pregnancies.[40] Even outside of fragile contexts, student vulnerability is likely to increase during school closures. Teachers are often the only other caregivers who can sound the alarm if a child is exposed to violence or abuse; with schools closed, children do not have access to this layer of protection.

Youth may increase risky behaviors that have long-term consequences, and adolescent fertility may increase. If student disengagement and dropout increase because of the school closures, risky behaviors such as participation in criminal activities may increase.[41] Students may also be more likely to abuse substances as a way to cope with chronic stress and loss.[42] Evidence from exogenous shocks to schooling—whether negative shocks like the Ebola crisis or positive shocks like girls' scholarship programs—shows that being out of school also increases the likelihood that adolescent girls will become pregnant. In many countries, school closures are part of a broader strategy of social distancing and general lockdowns. However, in low- and middle-income countries, enforcement is complicated, particularly in densely populated areas and in areas with high shares of overcrowded households. Hence, even though students are not in schools, social interactions might continue. During the Ebola outbreak, there was a significant increase in adolescent fertility linked directly to the school closures,[43] and in affected villages, girls were nearly 11 percentage points more likely to become pregnant.[44]

Economic crisis

It is not only school closures that will worsen education outcomes, but also the economic crisis that is already hitting and will most likely continue after school resumes. The IMF projects that the global economy will shrink 3 percent in 2020, a much bigger drop than during the global financial crisis of 2008–09.[45] It is estimated that emerging market countries will need at least US$2.5 trillion in financial resources to get through the crisis.[46] The economic downturn will exacerbate impacts on education, through household income as well as fiscal and market channels. These channels will reduce both the demand for schooling and the supply of quality schooling, both during the closures and after schools have reopened.

Impacts on demand for education

Student dropout could rise, with many students leaving schooling forever. Widespread unemployment and income loss will severely test households' ability to pay to keep students in school. One mitigating factor is that the poor job market will reduce the pull factor for youth who are thinking of dropping out to work. But for the poorest households, budget constraints may cause them to keep their children out of school even when schools reopen. Estimates from some recent crises show significant increases in student dropouts:

- In rural **Ethiopia**, the coffee price shock after the 2008 global financial crisis increased school dropout probability of children of age 15 and older by nearly 8 percent, with effects reaching 13 percent for girls.[47]
- The risk of dropping out may be more pronounced for older students. During 2005–2015 in **Brazil**, among households who experienced an economic shock, risk of dropping out was 8 percent higher for secondary students and 20 percent higher for tertiary students. In **Argentina**, it was 15 percent higher for tertiary students.[48] An older study from Brazil, using data from 1982–1999, shows that after a household head becomes unemployed, about 29 percent of 10- to 16-year-old children in those households fail to advance to the next grade in school the next year, and many drop out or enter employment.[49]
- In **Sierra Leone**, schools were closed for almost an entire academic year during the Ebola outbreak. When schools reopened, girls ages 12–17 were 16 percentage points less likely to be in school.[50]
- In **Venezuela**, after an economic crisis erupted due to low oil prices and production, the number of out-of-school children increased by 56 percent and the number of out-of-school girls by 60 percent between 2015 and 2017.[51]

- During the Asian crisis of 1998–99, secondary school enrollment rates in **Philippines** fell by nearly 7 percent for boys and 8 percent for girls.[52]

Increases in student dropout rates could also lead to social unrest and instability, if there are large cohorts of youth out of school and unemployed, with poor economic and social prospects.[53]

School dropout is linked with increased child labor, child marriage, and even transactional sex for children and adolescents. These are not directly education effects, but they are intertwined with lack of viable educational alternatives and lack of resources. In Sierra Leone, child labor by girls increased by 19 percentage points after the Ebola outbreak.[54] There are also reports of increases in unwanted and transactional sex during this time.[55]

Likelihood of school dropout will be significantly higher for those whose families are also hit directly by health shocks. While COVID's health impacts are most severe on older populations, younger adults can also suffer serious illness or death. For children who lose parents or other caregivers, these economy-induced demand-side shocks will be even greater. Longitudinal evidence from South Africa shows that during the HIV/AIDS crisis, children whose mothers died were significantly less likely to remain enrolled in school and had less spent on their education.[56]

A decline in schooling and learning during economic crises is not inevitable;[57] it can be avoided through proactive government action. However, this can happen only if schools remain active, are perceived as safe, and provide what parents perceive to be quality education.

Even for students who do not drop out, households will be less able to pay for educational inputs until the economy recovers. Many children benefit from household-financed educational inputs, such as books and other learning materials or private lessons. These expenditures will drop, potentially exacerbating the supply-side shocks from school closures and (later) reduced school quality.

Parents may move their children from private to public schools, adding pressure and lowering quality in already overstretched public-school systems. Many households would no longer be able to afford private schools (and many private schools may also close; see next subsection), causing already struggling public systems to accommodate a large inflow of new students, thereby hurting quality.

Impacts on supply and quality of education

Cuts in education investments may worsen the quality of schooling. Even in the best-case scenarios, the economic shock will reduce planned increases in education budgets. However, in many countries, education budgets could fall in absolute terms, as governments grapple with lower economic growth and revenues. If fiscal constraints reduce education investments—whether in textbooks, learning materials, or infrastructure improvements—this could further degrade teaching and learning. Usually non-salary expenditures are quickly cut, and in some cases even teachers' salaries and contracts can suffer. In the United States, during the Great Recession of 2008, national public-school per-pupil spending fell by roughly 7 percent and took several years to recover. This decline can directly be linked to lower test scores and lower college-going rates, with larger impacts for children in poor neighborhoods.[58] In Sub-Saharan Africa, public education spending per child could fall by an estimated 4 to 5 percent in 2020 due to the economic crisis. Education spending is also likely to decline as a share of the budget, as governments prioritize health, social protection, and labor market programs; this has already started happening in some countries. In Ukraine, the education budget is expected to be cut by 4 percent in 2020, and reports from Nigeria suggest the Federal government's budget for the Universal Basic Education Commission will be cut by approximately 45 percent.[59]

Teaching quality will likely suffer. Various channels will reduce the availability and quality of teaching, even once schools have reopened. The pandemic itself may reduce supply of teachers, especially the most experienced ones, due to illness or death. The fiscal effects of the economic downturn may reduce teaching quality. Salary delays and cuts may reduce teachers' motivation and ability to devote time to teaching.

Learning measurement has largely come to a halt as a result of school closures. While children are out of school, formative, summative, standardized, and large-scale assessments are generally not being conducted. This means teachers, students, parents, and

policy makers are flying blind on learning. At a time when high-stakes exams have, in most places, also been cancelled or postponed, students and parents do not have a fair, equitable, valid, and reliable way to gauge student knowledge and skills.[60]

Supply in the education sector may contract as private schools close. The demand shock could have longer-term effects on supply. In some countries, private schools are responsible for a large share of the provision of basic education, and shares can be even larger for post-basic education. Overall, nearly 28 percent of secondary students in low- and middle-income countries go to private schools, and the share reaches 51 percent in India and 58 percent in Liberia.[61] While public schools are not likely to shutter permanently as a result of the economic downturn, this is not the case for private schools. Contract teachers in private schools are especially vulnerable.

Low-cost private schools that serve the poor are generally small operators with small margins, and they will not be able to ride out the school closures. For instance, in the case of Pakistan, where 38 percent of students are enrolled in private schools,[62] the average fee charged is 500 rupees per month (less than US$1 per week). These schools typically do not have assets or savings to sustain wages for teachers for more than a few weeks. There is already anecdotal evidence that schools are closing.[63] In countries with large shares of students in private schooling, this could hurt the supply of schooling substantially, and consequently lead to a sharp reduction in school enrollments. Even if government schools absorb many of the former private-school students, the quality of those public schools could drop further if they become overcrowded. A similar dynamic may occur in higher education, given that many countries have seen rapid growth in private tertiary institutions.

Long-run costs

Thus, the COVID-19 crisis threatens to worsen education-related outcomes on many fronts, with large potential costs to human capital accumulation. If the effects of these shocks are not blocked through mitigation measures, the result will be lower productivity and employment, increased inequality, poorer health outcomes, and increased social unrest.

In countries that do not act in the short run, learning poverty will increase. Building of human capital is one of the first things to suffer when economic crises occur. Such crises can prevent whole generations from realizing their potential. For instance, during the 1980–83 crisis in Costa Rica, cohorts that were of secondary school age during the crisis period eventually had lower attainment levels than cohorts that hit secondary school age before or after the crisis.[64] This would have lowered the lifetime income of this cohort significantly, because economic returns to secondary school completion have generally been high (around 19–20 percent) for low-income households.[65]

Students who drop out of school or experience significant decline in learning will face lower lifetime productivity and earnings. They will also have less cushion against future crises. In Argentina, during 1992–2002, the earnings of less-educated workers were more affected by crises than the earnings of more-educated workers.[66] Similarly, in the United States, the real annual earnings and employment rates of less-educated workers fall more during recessions than those of more educated workers.[67] One possible reason for this is that educated workers are better able to adapt to changing economic conditions. In Indonesia during the 1997–98 crisis, educated adults were better able to smooth consumption and less likely to become poor.[68] In the 2008 recession also, youth with higher education were less negatively impacted in terms of employment and hours worked, regardless of whether labor markets were rigid or not.[69]

The burden of increased learning poverty will be borne disproportionately by students from poor and marginalized families. There is evidence that after the Great Recession of 2008 and related cuts to education spending, U.S. school districts serving higher concentrations of low-income and minority students experienced greater declines in achievement from school-age exposure to the recession.[70]

Within households, girls may be more likely to lose out on education. In the Indonesian economic crisis of the late 1990s, the drop in student enrollment was twice as large among families in the poorest quintile than the average.[71] If there are higher (perceived) returns to investing in sons than in daughters, and if credit markets are imperfect, then parents in poorer households are more likely to cut back on investing in girls.[72] In Cameroon, during economic crises in the 1980s and 1990s, girls were 83 percent more likely than boys to

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drop out of primary school, and 56 percent more likely to drop out of secondary school.[73] In Brazil, the impact of household head's unemployment was significantly greater for girls' education in the poorest areas.[74]

These impacts could increase crime, especially among youth. A drop in schooling could increase crimes committed by adolescents and youth.[75] This could be through two mechanisms. First, decline in education attainment decreases potential earnings, thereby driving down the opportunity costs of crime. Second, less schooling may increase crime simply by increasing the time available for young people to commit a crime. Among 16- and 17-year-olds in the United Kingdom, school dropouts are three times more likely to commit crimes than those who have stayed in school, and this gap remains well into their early 20s. In Sweden, the United Kingdom, and the United States, completing high school makes youth less likely to commit crimes, and education is linked with lower crime rates elsewhere—such as in Mexico, where high school dropouts were more caught up in the violence of the war on drugs.[76]

These risks loom especially large in countries that are experiencing a youth bulge, and these countries could also see increased social unrest. An increase in youth dropout during an economic downturn could prove combustible, because of the lack of employment opportunities at a time when social media has reduced the costs of political activism.

Reduced human capital for disadvantaged children could perpetuate intergenerational transmission of poverty and inequality. Gaps in education attainment can be one of the strongest mechanisms for transmitting inequalities from one generation to the next.[77] This is because education mediates a substantial part of the association between social origins and destinations,[78] and education outcomes for today's generation shape opportunities for tomorrow's generation.[79] There are also indirect impacts through other channels: for example, higher education levels of household heads are associated with better health outcomes in the family, meaning that, conversely, children in less educated households are more likely to be in poorer health.

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2 Policies to mitigate these impacts

The many potential costs of the crisis are not inevitable; they can be countered effectively by a swift and aggressive public policy response, and many governments have already begun work to mitigate them. This section identifies the major categories of interventions that hold promise for keeping children learning and, in the longer run, in school. It also provides examples of programs and policies that are already being implemented in each of these categories. This is intended as a structured, relatively comprehensive menu of options; from this menu, policymakers would need to identify the mix of policies and programs that best fit their context and are technically and financially feasible.

These policy responses can be classified in three overlapping categories: (i) **coping** policies, while schools are closed; (ii) policies for **managing continuity**, as schools reopen; and (iii) policies for **improving and accelerating** learning, which should begin now and continue after the system stabilizes and schools are reopened permanently (figure 2.1).

Coping policies

This first set of policies is designed to help education systems cope with the immediate impacts of school closures. Their aim is to help protect students during school closures, prevent learning losses, and put education systems in the service of the country's immediate efforts to contain the pandemic.

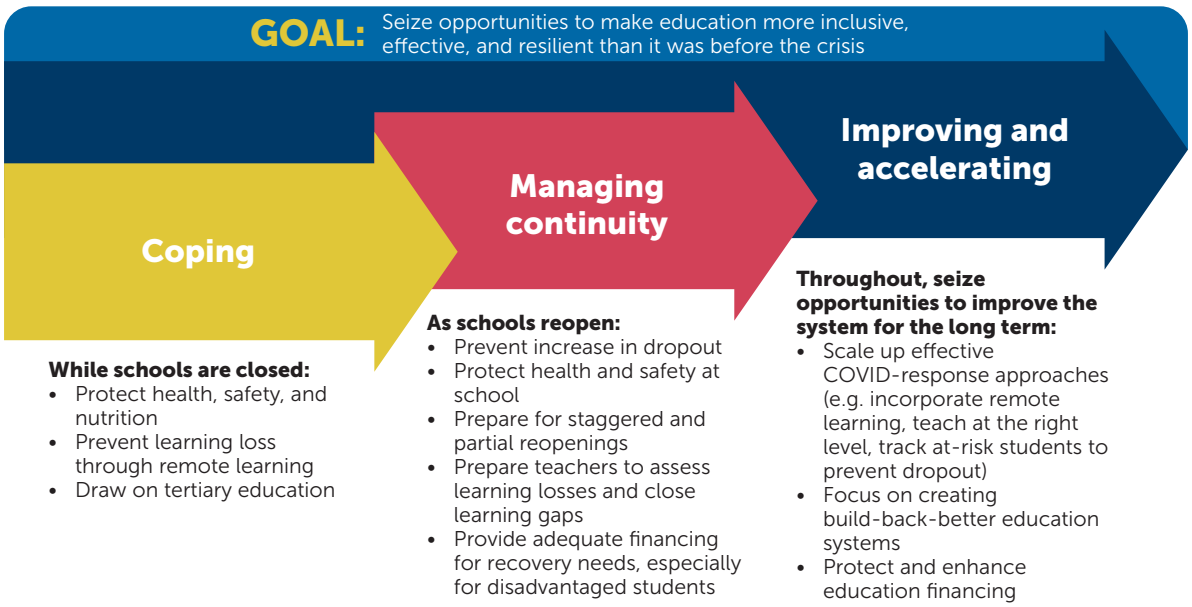
Policies to protect health and safety

The first priority of policy right now is to control the pandemic. Education systems have key assets that allow them to contribute to this effort, including personnel throughout the country and the trust of communities. By participating in the campaign to keep people safe, education systems will hasten the day when schooling and learning can return to normal.

Key mechanisms for promoting the health of families and communities during the period of school closure include the following:

- **Hygiene campaigns.** First, students should be kept healthy and safe, and kept from transmitting the virus. Virtually all systems have already closed schools to promote these goals, but they may also be able to contribute through hygiene and health campaigns. Because of their built-in networks to reach large number of families directly and quickly, education systems can be important platforms for such campaigns. Head teachers and teachers, as trusted community leaders, can also be trained for coordinated community response.
- **Supplemental nutrition programs.** Various options are being considered by international and local organizations to mitigate nutritional deficits arising from school closures and the suspension of school feeding programs. The United Nations Food and Agriculture Organization recommends

Figure 2.1: The three overlapping phases of the education response



that during school closures, governments consider food distribution to the most vulnerable families through mobile units and home delivery, if possible, from local agriculture.[80] These can be aided by the use of digital tools (georeferenced applications) to improve communication regarding access points for food deliveries, distribution times, and recommendations for the proper use of food. Other recommended strategies include increasing the economic allocation of social protection programs (such as cash transfers) by an amount corresponding to the cost of food rations delivered by school feeding programs and providing exemptions from taxes on basic foodstuffs for families with school-age children, especially for workers in the most affected economic sectors.

- **Outreach and guidance for parents and students on how to help children during school closures.** During the crisis, there will be greater need to support all children as they cope with anxiety and stress surrounding the pandemic and school closures. The World Health Organization, Interagency Network for Education in Emergencies, and U.S. Centers for Disease Control provide guidance materials for parents, teachers, and caretakers to respond to anxiety, stress, and depression among children and youth. Immediate support to primary caregivers, so that they can support children under 5 with good parenting techniques, is also important.
- **Deployment of teachers and use of closed schools** to support community activities around containment and recovery from the pandemic. However, this should only be done when these frontline service providers are not involved in delivering remote learning.

Policies to prevent learning losses

Even as they contribute to the fight against the pandemic, education systems must also launch a campaign against learning loss. Without effective action, these losses will likely be serious, both because of student disengagement and dropout and because most households will not be able to sustain learning as well as schools can.

Since learning depends on remaining in school, it will be important to prevent student dropout through communication and targeted financial support. Unless systems are very effective in tracking students, it may be hard to gauge the level of student engagement while schools are closed, and there is a risk of dropout that becomes visible only once schools reopen. Media campaigns to keep students engaged in the meantime may help. As one example, Indonesia launched a "Stay in School" media campaign during the 1990s economic crisis; there is some anecdotal evidence that this campaign helped maintain educational outcomes.[81] But in addition to that, systems should prepare to provide targeted financial support for the most at-risk students when that becomes relevant. Indonesia also did this, launching the Jaring Pegamanan Sosial (JPS) scholarship and fee-forgiveness program during the 1990s economic crisis to prevent dropouts.[82] The JPS scholarship reduced drop-outs in lower secondary grades by 38 percent.[83] In some cases, to prevent a wave of dropouts due to private school closures, governments may also want to consider temporary policies to help those schools stay open, for example, through concessional financing or debt relief.

To mitigate the learning loss of those who remain engaged, it will be essential to put in place effective and inclusive remote learning systems. Although nothing can replace an in-person schooling experience, education systems can engage students in meaningful and productive ways to enhance their learning. Many countries are already moving rapidly and creatively to use education technology to deliver remote-learning solutions (see box 2.1). Some principles to keep in mind are the following:[84]

- **Use existing infrastructure to provide remote learning opportunities that can work for all students.** As these remote learning options are developed, equity considerations need to be central to the design, so that students with poor access are not neglected. Equally important is assessing the current capacity and resources of the system to ensure that the solutions can be scaled up rapidly and accessibly; remote learning that depends on technology that has not been used before is unlikely to be successful in an emergency. Part of this process involves creating an inventory of existing content to be deployed by remote learning, aligning it to curriculum, and organizing it in such a way that learning opportunities correspond to learning objectives. Throughout the process of curating and organizing existing contents, the design should take into account which remote learning opportunities will be suitable for different educational levels. For instance, older students are better prepared

Box 2.1: Using EdTech to prevent learning loss during COVID—Three examples

Argentina's Seguimos Educando program began broadcasting educational content on April 1, 2020. It airs 14 hours a day of television content and 7 hours a day of radio content specially produced for students as a result of school closures. Each broadcast lesson includes a teacher and a conductor (journalist, artist, scientist), in addition to the dissemination of teaching materials. For students without access to technology or connectivity, this television and radio programming is supplemented with "notebooks" packed with learning resources that have been delivered to student homes. The program also makes available a collection of on-demand digital educational materials and resources on the Ministry of Education's **Educ.ar** website. A section on the website, called "the class of the day," provides a comprehensive daily plan for student learning aligned with the television program and printed notebooks. It also has a section on virtual reality that provides a collection of videos in 360° format to give the user an immersive educational experience.

India's multimodal approach includes multiple platforms. The DIKSHA portal contains e-Learning content for students, teachers, and parents aligned to the curriculum, including video lessons, worksheets, textbooks, and assessments, in multiple languages. QR codes in textbooks encourage students to go beyond the book. The application is also available for offline use. Then there is e-Pathshala, a learning application for classes 1 to 12 in multiple languages, which provides books, videos, audio, etc. aimed at students, educators, and parents. The learning platform Swayam hosts 1,900 complete courses, including teaching videos, weekly assignments, exams, and credit transfers, aimed both at school (classes 9 to 12) and higher education (undergraduate and postgraduate) levels. Swayam Prabha is a group of 32 direct-to-home channels devoted to telecasting of educational programs round the clock and accessible across the country. The channels air courses for school education (classes 9–12) and higher education (undergraduate, postgraduate), as well as for out-of-school children, vocational education, and teacher training.

Kenya is rapidly innovating. In addition to radio and TV, education programming is made available as both livestream and on-demand content via EduTV Kenya YouTube channel. In partnership with the Kenya Publishers Association, the government has made electronic copies of textbooks available for free on the Kenya Education Cloud for all students. To provide wider internet coverage to all students and families, the Kenya Civil Aviation Authority, in partnership with Alphabet Inc. and Telkom Kenya, has deployed Google's Loon Balloons carrying 4G base stations over Kenyan airspace. A single balloon can provide internet connectivity across an 80km-diameter area.

Source: World Bank. 2020. "How Countries Are Using Edtech (Including Online Learning, Radio, Television, Texting) to Support Access to Remote Learning During the COVID-19 Pandemic." Online brief, accessed April 13.

for independent study, whereas younger children may need more visual or audio stimulation, or both. If overall instruction time and quality are unavoidably reduced, it is especially important to preserve and maintain instruction for younger students who are in the middle of building foundational literacy and numeracy. These considerations can help in prioritizing the different experiences and modalities for different age groups to maximize engagement and learning for all students. It is also important to provide learning in a way that is accessible to students with disabilities. The best way to do this will vary by context, but an example is using technology that allows visually impaired students to use online studying materials in different formats, such as scanned versions that convert texts into sound or Braille characters.[85]

- **Ensure remote learning opportunities are multimodal and specific to the country context.** Because of the lack of access to high-speed broadband and digital devices in resource-constrained environments, education systems need to consider alternative modalities to ensure they reach all students. In country contexts with no technological infrastructure, offline remote learning models may represent the best and only option. These could include distributing printed materials for students to learn from at home. If technology allows, these could be distributed electronically. In countries where broadband access is limited, broadcast remote learning via educational radio or TV is an option that many countries are already considering or implementing. Such broadcasts can be paired with additional learning materials like text messaging to distribute schedules, guidance, and/or additional exercises. Where infrastructure, funding, and capacity allows, online and mobile remote learning models are effective solutions. In these contexts, increasing access to digital resources by improving connectivity, providing content through a variety of devices, supporting low-bandwidth solutions, and providing consolidated one-stop-shop sites to access content are factors to prioritize in the design of these solutions.

It is essential to provide support to parents and teachers, so they can help children sustain their engagement with education and learning. The introduction of emergency remote learning for children will place a greater burden on parents to help with

teaching. The challenges may be greatest in the case of younger children, who will need more support to participate in remote learning. Organizations like the Interagency Network for Education in Emergencies have compiled a list of learning resources in several languages to help guide parents and guardians.[86] Support to parents is crucial, as homeschooling will be new to many and could be a heavy burden that takes an emotional toll. Parents are critical to providing a structure to the activities of the child even if she has good access to remote learning. Parental support is even more important for children with disabilities and diverse learning needs, whose educational services—if they benefited from such services before the crisis—would most likely have ended with the school closures. In Sierra Leone, during the Ebola epidemic, an international nongovernmental organization (NGO) used community-based rehabilitation volunteers to provide support to children with disabilities and their families in their homes, including by distributing radios and providing learning support.

As part of this support, teachers (as well as students) will need rapid training in basic to intermediate-level digital skills. Many teachers and students, even at the university level, lack the digital skills required to use online digital technologies, or even to transition to using their existing teaching-learning materials in a synchronous or asynchronous mode. These gaps are larger in more disadvantaged areas, so it is important to try to narrow this digital divide to prevent inequality in outcomes from widening during the closures. Standardized training packages for teachers and for students can be provided along with technical support. In some cases, these packages could be expanded to include targeted training for teachers in the content and pedagogy most needed for learning recovery after schools reopen

Another priority is to keep paying teachers, both to ensure continuity of education and to provide fiscal stimulus. As the economic shock causes a fiscal tightening, it may be tempting to cut back on teacher salaries or even dismiss teachers where the legal system allows it. But doing so could have long-term costs. During the 2008 financial crisis, and subsequent cuts in education spending, nearly 300,000 teachers and other school personnel in the United States lost their jobs, and this appears to have had substantial impacts on education quality.[87] Teachers will be needed as soon as schools reopen, even if they are not involved in supporting remote learning; in the meantime they may be needed for health-related community outreach. Ensuring continuity of learning requires having experienced teachers ready to go. Beyond this, in an environment in which most monetary- and fiscal-policy tools are not likely to be effective, continuing to provide and pay for public services is an important macroeconomic stimulus measure.[88] For these reasons, governments may decide that it is important to extend pay protection beyond civil-servant teachers: for example, the government of Punjab, Pakistan, recently issued a regulation for even private schools to keep paying their teachers.[89]

Drawing on tertiary education

There are opportunities for tertiary education to be an important part of the coping efforts, as well as the subsequent phases of response. One pressing need is for universities to support school systems in the rollout of digital/on-line learning. They can also carry out focused applied research and promote local innovation in response to COVID-19, for example, to address shortages in critical supplies and reduce supply chain disruptions. More generally, universities may have the connections necessary to quickly disseminate and leverage knowledge from around the world on how to tackle the crisis—a role that is especially important in such a fast-moving crisis.

Tertiary institutions can also train youth for COVID-related work. Systems should provide targeted online training to students in technical and vocational education and training (TVET) and higher education for high-demand roles in pandemic coping and recovery. While many jobs have been destroyed by the pandemic, or at least put on long-term hold, societies have many pressing COVID-19 response needs that are creating new opportunities. To meet these demands, colleges and universities should provide accelerated training of nurses, lab technicians, and other health professionals. In other sectors, they can provide short-run training in skills for accelerated digital transformation at a time when so many industries demand those skills.

Beyond unique roles like these for tertiary institutions, many of the policies laid out in the remainder of this paper either apply directly to tertiary institutions or have close analogues. Box 2.2 discusses how the twin shocks of closures and recession are hitting tertiary systems, and also how policy can respond to dampen those shocks and ultimately strengthen the systems.

Box 2.2: Implications and policy responses for tertiary education

It is estimated that over 220 million postsecondary students globally have had their education disrupted due to COVID-driven closures. The shocks are reverberating through tertiary education much as they do through school education, and policy will have to respond in analogous ways.

Impacts of closures of tertiary institutions

- **Health and safety Impacts:** With campus closures, there have been mass displacements of tertiary students, including repatriation of international students and staff. Student support networks and access to vital services have been greatly diminished. Students (and staff) are experiencing the physical and mental-health impacts of the disruptions.
- **Learning losses:** Academic activities (coursework, examinations, awarding of degrees) and research operations (campus laboratories and facilities, field work, conferences, and external research collaborations) have come to a halt. Many students may drop out.

Impacts of economic crisis

- **Demand-side shocks:** Reduced private funding for higher education from households, firms, and third parties is likely. A specific complication relates to student loans/debt.
- **Supply-side shocks**: Supply contractions are likely due to permanent closures of programs and institutions; public budgets may be squeezed, and staff and faculty may be furloughed.

Long-run costs: These shocks could have long-run impacts, including: Increased inequity and inequality in access and retention, as at-risk students return at lower levels due to increased financial and situational constraints; loss of higher education's contributions to the local and national civic communities and culture, including provision of continuing education, community meeting spaces, and centers for performance and visual arts; and loss of research, including research collaborations across institutions, borders, and disciplines.

Policy responses for the tertiary education system mirror potential strategies for school education, with three overlapping phases:

- **Coping policies:** Introducing rapid technology and student welfare assessments, messaging to students and staff; keeping at-risk students engaged, including through dedicated tutors and customized work programs; and mobilizing emergency remote learning through available technologies and platforms. On remote learning, it is important to design for scale, give instructors autonomy, engage multiple stakeholders, and rely on data/analytics. Systems will also need to adjust curriculum and examinations for the current academic year. On the research front, supporting migration of research to remote platforms and enabling researchers to maintain access to networks and materials remotely would help maintain research continuity.
- **Policies for managing continuity:** Expanding rapid skilling options for affected tertiary students; expanding internationalization efforts; adapting quality assurance regulations for a more flexible approach; and introducing scholarships and fee-forgiveness to maximize student retention.
- **Policies for improvement and acceleration:** Improving and sustaining remote learning, accelerated training, and student support solutions that work; diversifying financing sources; improving student loan and grant programs; and sustaining the more agile examinations, curricula, and quality assurance mechanisms developed during the crisis.

Source: Adapted from World Bank. 2020. "The COVID-19 Crisis Response: Supporting Tertiary Education for Continuity, Adaptation, and Innovation." Memo. Washington, DC.

Policies for managing continuity

The next phase is Managing Continuity—which means ensuring that schools can reopen successfully and student learning can recover. Even as they grapple with the immediate challenges of the Coping phase, systems must begin planning for the reopening of schools. Even with the best of coping strategies, some learning loss will take place and learning inequality will widen. Therefore, on top of the logistical challenges of ensuring health and safety, reopening will entail the challenge of closing these wider learning gaps—in a context where even before COVID, schools were struggling with these very issues.

A further complication is that the reopening of schools is not likely to be a straightforward one-time process. There may be repeated surges of the pandemic, rather than a one-time peak followed by successful control. As a result, schools may reopen in a staggered way, with cycles of reclosing, or may reopen by level or grade, and most likely with fewer students. This reality implies that the Managing Continuity phase will have to involve considerable flexibility and learning from experience.

Once schools begin to reopen, the priority becomes reintegrating students into school settings safely and in ways that allow learning to pick up again, especially for those who suffered the biggest learning losses. To manage reopenings, schools will need to be logistically prepared, the teaching workforce ready, and financing available. And they will need to have plans specifically for supporting learning recovery of the most disadvantaged students.

Some of these policies would have made sense even before the COVID-19 crisis. One example is professional development that is more practical and targeted at meeting specific classroom needs of teachers. However, in the postcrisis environment, tight fiscal constraints will make it even more important to spend resources efficiently. Systems should resist the temptation to return to business as usual, even as they strive to return to normalcy.

One way to organize these policies is along the five pillars of a successful education system: (i) students who are in school and prepared to learn, (ii) teachers who are valued and supported, (iii) classrooms that are equipped for learning, (iv) safe and inclusive schools, and (v) well-managed education systems. Managing continuity successfully requires progress in each of these areas (in a slightly different order, given that safe schools are a prerequisite).

Prepared learners

First, systems need to bring students back to school. The first logical step once the pandemic subsides is to focus on ensuring that students are back in the classroom and learning again. This may be difficult to achieve for several reasons. Some students may have had to take on an income-generation role to keep their family financially solvent; some may have lost their caregivers to illness; and still others may not be able to afford to the fees involved with schooling. Families may be fearful of sending their children to school if schools do not clearly communicate the precautions that they are taking to block COVID-19 transmission. But while there are many factors that may hinder a student's ability to return to school, several approaches that have been tried in other scenarios could help improve reenrollment rates.

Once communities have confidence that schools are safe spaces, education authorities could consider conducting a reenrollment campaign. After the Ebola crisis, the United Nations Development Programme recommended that affected countries prioritize community awareness campaigns to increase reenrollment, although it is unclear to what extent those approaches were effective.[90] Reenrollment campaigns should also aim to be as inclusive as possible. Past crises have shown some mistakes to avoid: as schools were reopening in Sierra Leone after the Ebola outbreak, the government reaffirmed that "visibly pregnant" girls would not be able to return, although this was repealed in 2019 after a court battle.[91]

For greater effectiveness, reenrollment campaigns should include participatory community action and awareness-raising. In Uganda, a community-monitoring experiment revealed that when school management committees designed their own school monitoring scorecards, it improved pupil test scores, pupil presence, and teacher presence.[92] Similar approaches could be effective for reenrollment—for example, getting inputs from school management committees or Parent Teacher Associations (PTAs) on how to best communicate that schools are open again and ready for students to attend. In a slightly different context, the UNICEF *Back to School Guide*, first developed in response to the Rwandan genocide in 1994, outlines how countries can resume education in postcrisis situations.[93] Countries that implemented community awareness initiatives around educational issues saw increased enrollment, especially for girls and other disadvantaged student groups.

Both financial and nonfinancial incentives can be deployed to maximize reenrollment and attendance as schools reopen. The inclusion of incentives, some of which were already in place before the COVID-19 pandemic—whether feeding programs, provision of school uniforms, or payment of school fees—can also help drive reenrollment.[94] As emergency cash transfer programs are being deployed around the world,[95] the education sector could collaborate with social protection and other sectors to accompany them with information campaigns and soft conditionalities to encourage school enrollment.

Removing or waiving school fees can improve student enrollment and attendance. There is a substantial literature on conditional cash transfers such as the Oportunidades program in Mexico, Bolsa Familia in Brazil, and other similar programs around the world, including many studies on the efficacy of


PHOTO BY: © DOMINIC CHAVEZ/WORLD BANK

such transfers in increasing school participation.[96] Post-Ebola, the Sierra Leonean government waived tuition fees for two years, and development partners, along with civil society organizations and NGOs, provided books, uniforms, and school supplies to offset education costs borne by families.[97] In China, the government explored various ways to alleviate the financial burden of schooling for poor families. Reforms included (i) tuition control; (ii) tuition waivers, free textbooks, and living stipends for children from poor families; and (iii) tuition waivers for rural families. The tuition waiver, combined with subsidies (free textbooks and living stipends), had a positive and significant effect on school enrollment of all children, while the impacts of the tuition waiver reform were concentrated on the poorest, with positive effects only on children whose per capita household income was at least four times the absolute poverty line.[98]

It will be important to prioritize support to at-risk students and youth who will be less equipped to reenter an academic setting. This pandemic, like many previous crises, has laid bare the inequities in education systems around the world. After the HIV/AIDS epidemic in Africa left many children orphans, Zimbabwean children who migrated households due to a change in their caregiving situation were seven times more likely to drop out than those who did not move.[99] The same study showed that those who were at increased risk of dropping out were also from the poorest families who did not have the means to continue schooling. The COVID-19 pandemic has increased risks of adult morbidity and mortality. Hence, many children will likely experience some change in their caregiving situation and many families will encounter serious financial hardship. To get better data on those who are most at risk, UNICEF's *Back to School Guide* advocates recruiting

youth volunteers to conduct simple door-to-door surveys to identify out-of-school children.

Early-warning systems are an important first step to prevent a spike in school dropout. With more students at risk of dropping out, governments will have to design well-targeted interventions that address the underlying socioeconomic, academic, and socioemotional problems leading to dropout. Dropping out of school is a gradual process, and students at risk exhibit tell-tale signs along the way. Evidence from Central America[100] shows that administrative data on students' past performance and achievements, possibly in combination with measures of socioeconomic vulnerability, can be powerful tools for identification. Relatively low-cost interventions can allow school principals and teachers to better understand student-specific needs and intervene in a timely manner.

Don't forget girls. In many countries, girls are excluded from education for various sociocultural reasons. In Africa, where there are high rates of adolescent pregnancy, many girls are banned from completing their education. School closures may lead to an increase in the burden of care-related tasks, which disproportionately affect girls in many contexts.[101] This will affect their ability to stay engaged in education in the longer term. Households may also direct their own home-schooling resources preferentially toward boys (as a future investment) over girls. In low- and middle-income countries, women are still 8 percent less likely than men to own a mobile phone, and 20 percent less likely to use the internet on a mobile, which would limit their capacity to keep up with home-schooling materials.[102] To address these issues, communication, transfer, and reenrollment programs may need targeted design features to better reach girls. In some African nations like Cape Verde, schools have special accommodations for young mothers at school so that they can breastfeed, and in Gabon, some schools have nurseries or early childhood centers.[103]

Ramped-up school feeding programs can have positive impacts on school reenrollment and attendance,[104] while at the same time helping mitigate the nutritional shortfalls some students may have experienced during school closures (although there is less conclusive evidence on whether they have a similar impact on academic achievement). It will be important to resume school meals for the 368 million children around the world who are now missing out on them as a result of COVID-19. Once schools reopen, they should follow best practices for school feeding programs,[105] such as the practice of connecting school feeding with local food production. Given the massive economic losses that will occur with this pandemic, creating this type of symbiotic relationship may boost local small businesses as well as serve needy student populations.[106]

Social and emotional learning (SEL) provides schools with a viable strategy to address students' anxieties, stress, and self-esteem, while improving their academic outcomes. Successful SEL programs are those that follow a whole-school approach by (i) mobilizing instructional strategies to integrate SEL into regular curriculum, (ii) introducing, as necessary, dedicated SEL curricular activities, and (iii) ensuring a safe and supportive school climate. Teachers can deliver regular curricular activities involving instructional strategies (e.g., interactive learning, establishment of goals and rules, and use of greetings and closings), which have been shown to improve academic skills as well as socioemotional skills.[107] For schools that have the capacity to allocate specific time slots to deliver SEL programs, it is possible to target specific socioemotional skills (e.g., emotional coping and empathy) that need to be addressed urgently after the pandemic. There are evidence-based intervention programs and delivery principles (e.g., SAFE—sequenced, active, focused, and explicit) that work to foster both socioemotional skills and academic outcomes.[108] Lastly, the whole-school approach to SEL requires the entire school climate to be conducive to students' social and emotional development. This usually involves securing a safe, warm, caring, and interactive environment. Most of the successful SEL programs also provide support to families and local communities so that students will continue to be exposed to a socioemotionally nourishing environment beyond the school. It may be tempting for educators to consider designing a new SEL intervention program that is specifically adapted to the local contexts and needs. However, it takes a long time to develop a new SEL program. Therefore, especially in the middle of a crisis, it may be wiser to explore the wealth of existing evidence-based SEL practices and intervention programs, given that many of the successful programs can be adapted across diverse contexts.

Schools and local communities should consider counseling services for students and families

during and even after the number of new cases drop and schools reopen. Counseling services are indispensable not only for those directly affected by the pandemic, but also for children and youth that may have developed anxieties and depression by living through the terrifying events. In countries where educational institutions have professional counselors or psychologists who would respond to students with psychosocial needs, schools may need to be well prepared for a surge in demand by increasing the number of counselors or extending their service hours. But in countries where schools have no (or few) counselors, teachers may have to take the responsibility to provide students with some psychosocial support. Countries facing fragility, conflict, and violence often face high demand for trained teachers who can provide psychosocial support for children and youths. International agencies such as the United Nations Relief and Works Agency for Palestine Refugees have delivered teacher training programs to help meet these needs.[109] Note that many social and emotional learning programs also deliver teacher training designed to improve teacher's capacity to meet students' psychosocial needs.

Guidance and counseling would also be important for higher-education and TVET students about to enter the labor market. The first years after entering the labor market are often the most productive period for high school and university graduates. Not only do young workers suffer the highest unemployment rates in recessions, but the impacts persist well after economies recover: recent evidence confirms that entering the labor market during a recession has long-lasting negative effects on earning and middle-age health conditions.[110] Governments should therefore do what they can to proactively support these students through a period of uncertainty and anxiety through virtual counseling and guidance sessions, while also assisting them on the labor-market side.

Safe and inclusive schools

Government protocols for emergency school closures and subsequent reopenings should be established to guide schools and lower their risks of becoming the source of group infections. Safety must come first, before the learning recovery process can start. Reopening plans should consider not just the safety of students—most of whom are not likely to become very sick if they become infected—but also of their families and communities, who could suffer severe health consequences if school reopening leads to a local flare-up in the pandemic. It is also essential to protect the health of teachers: many teachers are older and therefore more vulnerable to the disease, and spending all day indoors with large numbers of children will make them more susceptible to infection.

The school reopening process could be complex. All schools might open partially, or reopening could start in selected schools, depending on infection rates at the local level. It may also vary by grade, perhaps with lower grades and levels reopening first. Even after schools reopen following a significant reduction in new cases, schools could still become a source of mass infections and new outbreaks. Governments can help by providing schools with clear decision-making criteria for triggering emergency closures.[111] Some of the East Asian countries experiencing a reduction in new cases have started to announce such protocols. For instance, the Japanese Ministry of Education, Culture, Sports, Science and Technology has released a guidance note with a check-list for local school districts, which includes criteria to help determine the decision to close either only the schools with new cases or all schools in a region.[112] Such a guidance note should avoid suggesting a one-size-fits-all approach and instead leave some room for local school districts (or schools) to make informed decisions flexibly by taking into account local circumstances and constraints.

Education systems will need to prepare for gradual and staggered reopenings with protocols for continued social distancing in place. While the notion of social distancing has rapidly become a norm in many countries that have been affected by the pandemic, it is not clear if students will be able to collectively maintain this practice in school settings surrounded by close friends and familiar teachers. Schools may need to explore alternative ways to deliver classes (e.g., staggered shifts or alternating weeks) and group events (e.g., scaled-down ceremonies, sports events, and PTA gatherings), while teachers may need to learn how to deliver curricular activities with minimal physical contacts among students but without losing the spirit of collaboration.

Important lessons can be learned from countries like Singapore and China, which have gone through the process of staggered school reopenings. Norway is also currently in the process of reopening schools

in April 2020.[113] The system is adopting measures to minimize risks following reopening. These include putting in place stricter sanitation protocols and social distancing practices within schools, more outdoor classes, dividing the day so that half the group meets early, the other meetings later, and the rest of the teaching can be done at home, reducing number of school days per week (as also seen in Singapore). Denmark is also another country opening relatively early, in mid-April; it is starting with children under age 11 and setting out strict protocols to be followed, and it acknowledges that school activities may need to differ significantly from past practice.[114]

Systems should plan for mixed or blended education provision, given the potential for localized recurrence of COVID-19 outbreaks. Just after the lockdowns are lifted, there could be shorter-term scenarios where education providers will have to plan for a blended mode of education provision, with some schools open and others (as appropriate for schools, regions, cities, etc.) in temporary lock-down because of renewed COVID-19 outbreaks in local areas. As of April 10, 2020, Singapore had renewed its lockdown, and in China schools are reopening only slowly. Thus, educators and schools should plan for a scenario of blended provision in the medium term.

Schools can also help maintain students' health and safety by following government protocols that describe procedures to improve sanitation and administer health screening. For instance, the U.S. government provides health and safety guidance for schools such as posting signs of symptoms, cleaning surfaces of frequently touched areas, and limiting events and meetings that require close contact.[115] Schools can also play an important role in monitoring students' health conditions by carrying out simple health screening and regularly checking the instances of high-risk symptoms and health-related absences. Where resources allow, schools should also screen and provide counseling for students dealing with COVID-driven adversity in their households.

Many schools in low-income countries also require continued efforts to secure access to clean water, sanitation, and hygiene (WASH) to ensure students remain healthy and avoid being subject to potential viral infections. These WASH interventions have already contributed to improving sanitation, hygiene, and water access in countries such as Kenya, Mali, and Niger. While the evidence on the impact of WASH on health and learning outcomes have not been consistent across programs, a number of studies show it can improve disease-related outcomes among students and lead to desirable changes in knowledge, attitudes, and behaviors, such as handwashing with soap.[116] In some cases, making schools healthier for students may require investments in basic school infrastructure, including water and sanitation facilities.[117] These examples highlight that managing continuity in education will need to be a multisectoral effort.

Classrooms equipped for learning

To plan for learning recovery, education systems need to assess students' post-COVID learning level. Ministries of education and schools can use the interim period before the reopening of schools to (i) assess teachers that could participate in accelerated learning or remedial programs, (ii) identify learning gaps among whole cohorts and students in need of support (learning, financial, or nutrition), and (iii) assess overall learning loss, so that accelerated and remedial programs can be targeted correctly.

Based on these assessments, systems should plan to implement large-scale remedial programs to mitigate learning loss and prevent exacerbation of learning inequality after school closures. In parts of China (Sichuan and Hainan provinces), efforts are under way to make individualized plans for students with disadvantaged backgrounds. Brazil has a nationwide remedial program, Programa Acelera Brasil.[118] There is also evidence from accelerated learning programs in countries such as Bangladesh, Cambodia, Ghana, Honduras, and Tanzania.[119] Lessons from such programs need to be harnessed in service of post-COVID school planning. At the same time, catch-up programs should be carried out in a way that does not add to stress, especially for younger children whose school readiness may have been affected more by the economic downturn.

Where cessation of learning has affected whole cohorts, plans for teaching essential missed material should be integrated with plans for resuming progress through the curriculum. Assessments will reveal areas where interruptions to schooling have affected whole cohorts in similar ways: all or almost all students may have failed to master key material, especially in foundational subjects. Explicit plans

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for reteaching missed content efficiently, along with plans for prioritizing the most important grade-level content, should be done in ways that respect the continuity of grade-to-grade learning sequences.

Governments will need to equip classrooms to deal with learning recovery and increased student gaps and needs. Equity is a matter of the utmost concern in this crisis. On restarting classes, teachers will likely face classrooms with larger disparities in terms of both academic and socioemotional skills. Increased heterogeneity in terms of student ability makes teaching practices less effective. Governments will need to invest in coaching programs, with experienced tutors helping teachers to adjust pedagogical practices and improve classroom management. These programs have been found to be effective not only at improving learning outcomes at scale in South Africa and Peru,[120] but also improving measures of child well-being in rural Mexico.[121] The academic scope of these programs will need to adjust to the education levels and socioeconomic context, with a stronger focus on reading and math in the early grades and more deprived areas. Training programs should explicitly aim to improve teachers' ability to address student socioemotional skills, especially in schools with high shares of at-risk students. The experiences of Escuela Amiga (Peru), Becoming a Man (United States), and PODER (Mexico) can provide useful insights into how to design and deliver interventions that effectively address socioemotional issues.

A modified school calendar could help students catch up. Most school calendars include vacation times. Countries can use these periods over the next 6 to 18 months to make up for lost face-to-face instruction time and recover learning losses at an accelerated pace. This will help minimize academic loss from school closures. For instance, systems could consider running summer and winter remedial programs, either for all students or for those whose learning has suffered most during the closures. Some countries, like Ukraine, have already extended the school year into the summer period.[122] In some contexts, such efforts would need to take into account agricultural cycles, especially harvest periods.[123]

Supported teachers

Even with all these preparations in other areas, learning recovery will not happen without well-supported teachers. Teachers are at the heart of the learning process, and the new challenges will require them to be even more responsive to student needs.

Support encompasses attention both to the needs of teachers and to the needs of their students. Support means protecting the income and health of teachers as they reenter schools, building on the measures that have already begun during closures. But it also should include equipping them with the skills they need to help students recover the learning they have lost during the shutdowns.

Teachers will require professional development and guidance in several areas:

- **Training to assess learning lags:** A starting point for all learning recovery will be carrying out formative assessments of the students when they return. Teachers will have to know how much learning loss there has been before they can figure out at what level the instruction should be targeted. Systems would need to ensure that teachers have access to appropriate assessment tools and resources, including effective ways to communicate information and deliver instructional support to students and parents. These measures are even more important given that in many contexts summative, standardized, and large-scale assessments have been cancelled in the wake of the pandemic, which means teachers, students, parents, and policy makers are flying blind on learning. Since many teachers were not well prepared to do these assessments even before these shocks hit, the training will need to be practical and targeted at assessing the core skills.
- **Training to "teach at the right (post-COVID) level":** Teachers will also need to know how to use this information to help students begin making up these learning lags. Tailoring the teaching to students' needs is challenging, but effective and scalable strategies to help teachers "teach at the right level" are available.*[124] These strategies can be tailored to the post-COVID needs. Specifically, teachers will need practical guidance on which areas of learning require the most work and pedagogical techniques to close those gaps.[125]
- **Guidance on curriculum prioritization:** The goal of teaching students at the right level may not be consistent with following the curriculum. Teachers will need to understand that they have permission to deviate from the curriculum when necessary, and they should be given guidance on which parts of the curriculum to prioritize if it proves impossible to cover it all.
- **Training to identify and support at-risk students:** Because the risk of dropouts and difficult home situations will rise, teachers need to be able to identify the students who most need support. This includes support for those facing risks to their physical and mental health. Depending on the system's resources, the support may not have to come from the teacher herself. But the teacher will be the first line of defense.
- **Training on digital skills:** This will be key in a context where the new normal will increasingly involve the use of technological tools and where the uncertainty of the pandemic might require returning to remote learning options at any moment.

All these skills are essential, not just to get learning on track again, but also to narrow learning gaps that will have widened during the school closures. If teachers feel they must simply return to the curriculum without the tools to adjust their pedagogy to students' needs, the most disadvantaged students—those who lacked good access to remote learning and family education support—will be hurt the most. They will have fallen farthest behind during the period away from school, and if instruction just picks up where it left off, they will lag further and may eventually drop out.

Because these demands come on top of the many challenges that systems already face, preparation

for teachers needs to begin now. Even in normal times, evidence has shown that many teachers do not have the tools or the knowledge to assess students' learning effectively, or to adapt their teaching to what those assessments show. Nor do they necessarily feel empowered to focus on core areas of the curriculum, even if students are falling short across the board. Systems should begin preparing teachers now to deal with these new challenges. In systems where the emergency remote-learning systems will not occupy teachers fulltime and they are not deployed for other community needs, there should be time available to provide them with practical professional development in these areas. Remote learning solutions deployed during the Coping phase can be improved and scaled up for rapid upskilling of large number of teachers in subsequent phases of the response.

More autonomy and early detection will help to reduce teacher burnout. Student behavior patterns could change as a result of COVID-19, with more students displaying inattention and sociability issues once they return to school; in that case, teacher burnout will likely increase.[126] Teacher absenteeism and turnover driven by burnout could further worsen learning outcomes[127] and make the education system less efficient. An important element of teachers' working conditions is their control over classroom activities.[128] Especially in contexts where large shares of students fall behind as a result of COVID-19, well-trained teachers should be given more independence to tailor instruction to students in varying situations and contexts. Ministries of education should work in collaboration with health authorities and NGOs (e.g., the Education Support Partnership in the United Kingdom) to allow early detection of burnout, reduce potential stigma, and define clear paths to adjusting teacher workloads and lifestyles to manageable levels.

Good management

This pandemic is an opportunity to get systems to use data and monitoring to track reintegration, learning, and health of all students. Strong administrative data systems are the backbone of early-warning systems that can identify which students are likely to drop out and therefore should be targeted for interventions. Many U.S. school systems leverage their rich administrative data available for increasingly effective dropout prediction and prevention,[129] as do systems in many European countries.[130] This pandemic underlines the importance for all education systems to better harness their administrative data for enhancing targeted student support.

Crises are often a time when communities and stakeholders exhibit resilience by putting in place rapid, localized innovations. It is important to support, promote, and learn from such rapid innovations. In Guinea during the Ebola epidemic, community watch committees, which included teachers, led both contact tracing and support for affected families. This integrated, community-driven approach proved effective.[131] In Liberia, an already established peacebuilding education and advocacy program reassigned young volunteers to join the fight against Ebola, supporting both disease control and health education. When schools reopened in 2015, 241 of the 300 volunteers were allocated to 83 public schools for a year. Communities welcomed and benefited from this intervention.[132]

It is crucial to prioritize adequate financing to support new recovery needs, especially for disadvantaged students. Lessons from past crises suggest that as funding becomes tight, disadvantaged students and schools suffer the most.[133] The resultant increase in inequities can take years to recover from. One potential solution is to suspend or revise temporarily performance-based elements in per-capita funding, which can ensure continuing financing and funding and prevent reductions due to lack of achievement or compliance. Such measures not only help in the continuity of essential services but also send a much-needed message to disadvantaged communities and schools that they are not being forgotten.

Systems will also need to deal with disruptions to student assessment systems; one example is the need to adjust high-stakes examinations for the 2019/2020 and 2020/2021 school years. Cancellation of large-scale exams may be particularly important to prevent health impacts of in-person administration. Systems could consider extending or modifying the school calendar to allow for information to inform high-stakes decision making to come in. They may also consider automatic promotion between grades. Norway has canceled all written examinations for 10th-grade (final year) students in junior high school and for students in all three years of high school.[134] In Uttar Pradesh, India, students in grades 1–8 will be promoted to the next grade without

taking examinations.[135] It is particularly important to plan proactively for students who need to apply to the next level of education. In Denmark, students in secondary schools, including TVET, will take a reduced number of exams using written, oral, and on-line exams.[136] Some systems are introducing a modified format for examinations. In the United Kingdom, online exams have been introduced for medical school students for the first time.[137] However, solutions involving online platforms need to ensure test validity, reliability, fairness, and equity, all of which are challenging. Ultimately, the optimal choice for countries is likely to be highly context specific.

Policies for improvement and acceleration

The third phase consists of policies for improvement and acceleration of learning. Coping and even continuity with the pre-COVID period are not enough. The world was already living a learning crisis and experiencing high levels of inequality of opportunity. Even with swiftly implemented education policy effort, learning, schooling, and equity will all likely suffer. Therefore, efforts should be geared to make up for the lost time to prevent permanent losses in the human capital of children and young people currently in school age. But beyond this, countries should also seize the opportunity provided by the crisis response and innovations to build their systems stronger than before. The school after this pandemic will be different. Many actors—parents, teachers, mass media, government, and others—will have changed their views and perceptions about their role in the education process. Many equity gaps will have been made more starkly evident, and the urgent need to act on them will be clearer.

Improve and scale up effective COVID-response policies

One major priority is to sustain, adapt, and improve COVID-response initiatives that have worked. Some of the measures taken in the coming months will be purely emergency-response measures—conversion of schools to medical or health-outreach, for example, or redeployment of some teachers to health-outreach duties. But many other policies, created out of necessity during the first two phases, will represent real improvements in how the system functions.

It is essential to learn from these successes and integrate them into regular processes so they can be sustained. Some of the most promising areas to apply this approach are:

- **Effective uses of technology in remote-learning systems**: The school closures will necessarily drive a lot of innovation in the use of learning technology, as discussed. Once schools have reopened, systems can shift from emergency remote-learning systems to more sustained models that blend remote learning and other uses of technology with teacher-led instruction. Systems should have a sense of what is working so far, in terms of technology; the most effective methods can be integrated with classroom teaching to drive learning and keep students engaged.
- **Early-warning systems to prevent dropout:** Ideally, systems will have worked to identify and track at-risk students during the period of school closures and then reenrollment. Given the impossibility of gathering data on key predictors of dropout (such as grades or attendance) during the closure period, this will be challenging. But the task should become much easier once schools have reopened, for two reasons. First, administrative data will now be available to help in tracking, and teachers will be more able to observe students and gauge whether they are at risk. Second, once most students are back in school and once economies stabilize, fewer of them may be vulnerable to dropping out, so that the systems can focus on the minority who are most at risk. The key will be to continue focusing attention on this issue after reenrollment is completed.
- **Teaching at the right level**: As the previous section describes, the Maintaining Continuity period will require much more effective pedagogy to help students recover their lost learning quickly. Countries will have learned how important it is to use assessments in the classroom to guide differentiation and instruction at the right level for students. And faced with tight constraints on school time due to the shortened year, teachers and schools will have learned the value of focusing on teaching the core foundational skills effectively, rather than diffusing their efforts across a wide range of skills and topics in the curriculum that can't possibly be covered in the time available. These lessons should not be lost; instead, they should be integrated into standard practice in the postclosure period.

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- **Ramped-up support for parents, teachers, and students, including socioemotional support:** Everyone involved in the school community will need support in the coming months, not just support for sustaining academic learning but also help in socioemotional and other areas. People will come up with innovative ways to provide that support, and in the recovery period it should be possible to sustain some of those innovations. For example, during the period of closures, some governments are providing families with children's books and guidance on supporting learning; continuing these programs after schools reopen could accelerate recovery and long-term improvement. After the pandemic, there should be greater awareness of the importance of tending to the welfare of students and their families, and of the teachers that support them.

This list identifies some core areas for improvement, but it is by no means comprehensive. Frontline innovation will add to this list in the coming months, so it is important to keep tracking and learning from what's working.

Build-back-better education systems

The post-COVID phase will offer many other opportunities to "build back better." The previous section has highlighted the policies that can be sustained and scaled up after they are proven to work in the Maintaining Continuity phase. But there are other reforms—changes that may require more lead time than is available in that phase—that can and should support the move to a stronger post-COVID education system.

One example is adjustment to high-stakes examinations. As noted earlier, school closures and health concerns are driving many countries to suspend or modify high-stakes exams on an emergency basis. After students return to school, countries should ask themselves whether simply reinstituting the pre-COVID exam system is the best course of action. Other changes launched during the crisis, such as focusing of curriculum and greater attention to student well-being, may spur moves to reform exam systems that are currently viewed as undermining real learning.

Another such change is curriculum simplification (or focusing). Curriculum reforms take time, and they are not likely to happen in time for school reopening. But as governments provide guidance to teachers on what parts of the curriculum to focus on during the immediate learning recovery period, on an emergency basis, they may want to consider making more permanent by reforming curricula. Overly complex and demanding curricula overtax the capacity of many systems, so using the crisis as an impetus to focus them may improve outcomes. They can do this by improving the curricular focus on key learning goals and milestones, especially for foundational learning. As countries consider how to make up for lost classroom time, they will measure progress against stated learning standards—but in some cases, this will reveal that those milestones are outdated or unfocused. Countries where most children were already failing to learn to read by age 10, even before the current crisis, may use this opportunity to sharpen goals for literacy and alignment of instruction with those goals. In this way, improved focus and efficiency of classroom instruction serves as a form of remediation for systems whose learning outcomes were chronically low.

Third, systems should invest in building up effective data systems. During the Coping and Managing Continuity phases, there will undoubtedly be many innovations in the collection and use of data to guide the emergency response. Those that work well should be sustained in this third phase. But there will also be other major investments in data systems that will require longer lead time, including systems to collect important school-level data that will not be collected during the closure period. These investments should begin as soon as possible, so that the new systems can be in place as schools begin to stabilize again and the system can move off its emergency footing. This will allow governments to track whether learning is recovering, what factors are driving improvements, and who is being left behind.

Fourth, there will need to be new investments in the long-term resilience of system, schools, and students. Despite heroic efforts by many educators and administrators, the COVID-19 crisis has driven home, even in rich countries, how unprepared governments are to absorb major shocks. Especially in the human development sectors, where lives and futures are at stake, there need to be mechanisms for sustaining service delivery during emergencies and for doing so in a way that is inclusive.

The goal of these changes will be to reinforce the COVID-driven shift to a system that is more effective, equitable, and resilient.

Protect and enhance education financing

Finally, to build back better, post-COVID systems will need to devote the financing necessary to solidify these improvements. This will not be easy: experience from past recessions shows that as governments budgets are hit, per-capita student spending declines.

But even though fiscal constraints will be tight, education needs support to prevent a lost generation of students. Sharp drops in public education funding can have long-term effects on student outcomes, compounding the harmful impacts of the crisis on households' ability to support children's education. Any debt relief or debt cancellation should be accompanied by conditions on increasing social spending to avoid loss of human capital and stem increases in poverty.

In particular, financing for frontlines and areas of greatest need will need to increase, using mechanisms that have worked in past crises. One principle is to direct funding to those households and schools hit hardest by the crisis, for example through formula-based funding that prioritizes the most vulnerable. In terms of mechanisms, there are many tools available to promote learning recovery and prevent dropout, including block grants, cash transfers (conditional or unconditional) to households, and school fee waivers. These can be effective even in severe economic crises, as illustrated in the following:

- **Indonesia provided block grants** to schools to cushion the impacts of its deep 1997–98 economic crisis.[138] As a result, teacher attendance and performance did not deteriorate, and school principals overwhelmingly praised the block grant policy intervention.[139]
- **Government-funded school-fee waivers** for private schools can also be a useful tool. They can help mitigate the harm done to the quality of education in public schools by preventing a sudden outflow from private schools and overcrowding of public schools that cater to low- and middle-income families.[140]

Financing should be allocated based on proven effectiveness as well as need. Even more than in the past, governments will need to avoid spending scarce resources on ineffective programs. Thanks to the wealth of new evaluations and other research in the past 20 years, governments now have much more information to guide these choices. That information can be supplemented by new evidence, generated in the Coping and Managing Continuity phases, on what is working in the period of the COVID-19 crisis. Beyond using it to guide their budget allocation decisions, governments may need to create targeted guidance to schools on how to protect education quality despite the fiscal constraints. It is also possible to crowd-source localized solutions and initiatives and disseminate these ideas broadly. Some systems in past crises, such as Mexico in the 1980s and Indonesia in the 1990s, have managed to protect at least some educational outcomes in the face of tighter fiscal constraints; the better evidence available today should make this easier.[141]

More generally, governments should safeguard overall education spending to protect and boost human capital. Increased education spending can be an important part of fiscal stimulus packages. For instance, within the U.S. 2009 Federal American Recovery and Reinvestment Act, nearly 15 percent of funding was allocated to education.[142] Beyond protecting overall education budgets, this will require other measures. For example, because of the economic and health shocks, districts or schools may fail to meet performance requirements (for example, on student achievement or compliance) for reasons that are beyond their control. In such cases, it may be appropriate to suspend or revise performance-based elements in per-capita funding to keep funding flowing until the economy returns to normal.

The international community should support this effort. Both to sustain human capital and to promote equity, international actors should do what they can to help governments safeguard and improve education financing. For example, any discussion on debt relief or debt cancellation should be accompanied by commitments to sustain social spending to avoid loss of human capital and stem increases in poverty levels.

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Conclusion

Even before the COVID-19 pandemic, the world was living a learning crisis. And the crisis was not equally distributed: the most disadvantaged have the worst access to schooling, highest dropout rates, and the largest learning deficits. The COVID-19 pandemic has already had profound impacts on education by closing schools almost everywhere on the planet, in the largest simultaneous shock to all education systems in our lifetimes. The damage will become even more severe as the health emergency translates into a deep global recession. The school closings shock will lead to learning loss, increased dropouts, and higher inequality; the economic shock will exacerbate the damage, by depressing education demand and supply as it harms households; and together, they will exact long-run costs on human capital accumulation, development prospects and welfare.

But if countries move quickly to support continued learning, they can at least partially mitigate the damage. And with the right planning and policies, they can use this crisis as an opportunity to build more inclusive, efficient, and resilient education systems. The policy responses to achieve this can be summarized in three overlapping phases: Coping, Managing Continuity, and Improving and Accelerating.

In the Coping phase, remote learning has been deployed creatively in many countries. However, given that countries were in general not prepared for a shock like this, all are learning along the way that they must try to use different platforms that allow them to reach as many students as possible. And this is the critical challenge. Without explicit policies to reach more vulnerable households, only rich and educated families will be able to cope with the shock.

When Managing Continuity, educational systems should try to prevent dangerous (and possibly irreversible) reductions in enrollments and to close learning gaps that will likely have expanded during the closures. Efforts should be geared to make up for the lost time to avoid permanent impacts in the human capital of children and young people currently in school age. This will require a raft of measures targeted at reversing learning losses, from improved classroom assessment to focused pedagogies to system-level support. It will also require substantial resources, and education budgets must be protected at a time when families will have less disposable income to support education at home and the demands on the public system might increase.

But there is an opportunity provided by the crisis response and innovations to build educational systems stronger and more equitable than before, in the phase of Improving and Accelerating. The school after this pandemic will be different. Many actors—parents, teachers, mass media, the government, and others—will have changed their views and perceptions about their role in the education process. For example, parents will have a better understanding of the need to work jointly with the schools to foster the education of their children, while mass media will understand the critical role that TV and radio still play and the huge responsibility they have. There will be a better understanding of the digital divide: both the differences in access to hardware, connectivity, and the right software, but also the huge shortfall of teachers with the digital skills. Many equity gaps will have been made more evident, and the urgent need to act on them will be clearer. And the innovations in the Coping and Managing Continuity periods will have shown what is possible, when countries focus on the most effective and equitable approaches to close learning gaps for all children. Societies thus have a real opportunity to "build back better" and use the most effective crisis-recovery strategies as the basis for long-term improvements. They should seize the opportunity.

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Endnotes

1 UNESCO Institute for Statistics 2020b.
2 World Bank 2019b.
3 World Bank 2018b.
4 World Bank 2020e.
5 IMF 2020a.
6 Throughout this paper, the term *schools* is usually used as shorthand for educational institutions at all levels, from early childhood through to tertiary education. The society-wide shocks from COVID-19 are hitting most institutions and students in similar ways, so many of the points apply to all. For a specific discussion of the effects on universities and other postsecondary institutions and potential policy responses, see the relevant subsection and box 2.2 in the "Policies to Mitigate These Impacts" section.
7 World Bank 2018b.
8 UNESCO 2019.
9 World Bank 2019b.
10 World Bank 2020e.
11 UNESCO 2020.
12 Slade, Piper, Kaunda, King, and Ibrahim 2017. This phenomenon has also been noted in the US; see, for example, Cooper, Nye, Charlton, Lindsay, and Greathouse 1996.
13 Das, Daniels, and Andrabi 2020.
14 World Bank 2020a.
15 Crouch and Gove 2011.
16 Sege and Browne 2017.
17 Busso and Camacho Munoz 2020.
18 Cooper, Nye, Charlton, Lindsay, and Greathouse 1996.
19 Mizunoya 2017. Among 12-year-olds across 13 countries in Sub-Saharan Africa, the likelihood of ever having enrolled in school was 10 percentage points lower for children with disabilities than those without disabilities See World Bank 2018a.
20 Mitra, Posarac, and Vick 2013.
21 Filmer 2005.
22 United Nations 2020.
23 United States Department of Agriculture 2020.
24 FAO (Food and Agricultural Organization of the United Nations) 2020.
25 Alderman and Bundy 2012.
26 Jacoby 2002.
27 Ahmed 2004.
28 Afridi 2010.
29 Alderman and Bundy 2012.
30 Evidence Action 2020.
31 Kieling, Baker-Henningham, Belfer, Conti, Ertem, Omigbodun, Rohde, Srinath, Ulkuer, and Rahman 2011. This figure includes mental disorders such as anxiety, depression, posttraumatic stress disorders, and schizophrenia. Determinants of mental health and mental disorders include not only individual attributes such as the ability to manage one's thoughts, emotions, behaviors, and interactions with others but also social, cultural, economic, political, and environmental factors. Exposure to adversity at a young age is an established preventable risk factor for mental disorder.
32 Papadatou, Giannopoulou, Bitsakou, Bellali, Talias, and Tselepi 2012; Thienkrua et al 2006; Liu 2017.
33 Wadsworth and Berger 2006; World Health Organization and Calouste Gulbenkian Foundation 2014; Cortina, Sodha, Fazel, and Ramchandani.
34 Stevenson, Barrios, Cordell, Delozier, Gorman, Koenig, Odom, Polder, Randolph, Shimabukuro, and Singleton 2009.
35 Shonkoff, Boyce, Cameron, Duncan, Fox, Gunnar, and Thompson 2005.
36 Reimers and Schleicher 2020.
37 Risso-Gill and Finnegan 2015.
38 John, Casey, Carino, and McGovern 2020; Fraser 2020.
39 Stiles 2002.
40 Onyango, Resnick, Davis, and Shah 2019.
41 Some evidence on this comes from randomized controlled trials of programs that have succeeded in reducing dropout and have also reduced crime; in the current context of school closures, the opposite dynamic may hold. See, for example, Heller, Shah, Guryan, Ludwig, Mullainathan, and Pollack 2017.
42 Sinha 2001.
43 UNDP (United Nations Development Programme) 2015.
44 Bandiera, Buehren, Goldstein, Rasul, and Smurra 2019.
45 IMF 2020b.
46 Lawder and Shalal 2020.
47 Asfaw 2018.
48 Cerutti, Crivellaro, Reyes, and Sousa 2019.

49 Duryea, Lam, and Levison 2007.
50 Bandiera, Buehren, Goldstein, Rasul, and Smurra 2019.
51 UNESCO Institute for Statistics 2020a.
52 Lim 2000.
53 Farzanegan and Witthuhn 2017.
54 Bandiera, Buehren, Goldstein, Rasul, and Smurra 2019.
55 Werber 2015.
56 Case and Ardington 2006.
57 Educational attainment increased in the United States during the Great Depression and in Mexico in the 1990s. Sources: Goldin and Katz 1999; Kisswani 2008; McKenzie 2003.
58 Jackson, Wigger, and Xiong 2018.
59 Al-Samarrai 2020.
60 Liberman, Levin, Luna-Bazaldua, Harnisch 2020.
61 World Bank 2019a.
62 Based on Pakistan Social and Living Standards Measurement survey, 2014/15.
63 Yousafzai 2020.
64 Funkhouser 1999.
65 Psacharopoulos and Patrinos 2004.
66 Fiszbein, Giovagnoli, and Patrinos 2007.
67 Hoynes 2000.
68 Frankenberg, Thomas, and Beegle 1999.
69 Cockx 2016.
70 Shores and Steinberg 2017.
71 Thomas, Beegle, Frankenberg, Sikoki, Strauss, and Teruel 2004.
72 Rose 2000.
73 Eloundou-Enyegue and Davanzo 2003.
74 Duryea, Lam, and Levison 2007.
75 Belfield, Nores, Barnett, and Schweinhart 2006; Cullen, Jacob, and Levitt 2006.
76 Anderson 2014; De Hoyos, Gutiérrez Fierros, and Vargas 2016; Hjalmarsson, Holmlund, and Lindquist 2015; Machin, Marie, and Vujić 2011.
77 Blau and Duncan 1967; Becker and Tomes 1994; Breen and Jonsson 2007; Duncan and Murnane 2011; Jerrim and Macmillan 2015.
78 Breen and Jonsson 2005.
79 Ferreira 2001.
80 FAO (Food and Agricultural Organization of the United Nations) 2020.
81 Cameron 2009.
82 Filmer 2001.
83 Cameron 2009.
84 World Bank 2020d.
85 The forthcoming 2020 Global Education Monitoring report (UNESCO 2018) discusses options available, but points out that not many education systems use available assistive, cost-effective technologies, for example, for students with print disabilities or dyslexia or those using sign-language.
86 Education Above All 2020.
87 Evans, Schwab, and Wagner 2019.
88 Loayza and Pennings 2020.
89 The News International 2020.
90 Hallgarten 2020.
91 BBC News 2020.
92 Barr, Mugisha, Serneels, and Zeitlin 2012.
93 UNICEF 2013.
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103 Human Rights Watch 2018.
104 Jomaa, McDonnell, and Probart 2011.
105 Lesley, Alice, Donald, and Carmen 2016.

106 Tembon 2016.
107 One example is Responsive Classrooms. **https://www.responsiveclassroom.org/wp-content/uploads/2019/02/RC-Efficacy-Study-Summary.pdf**.
108 Durlak, Weissberg, Dymnicki, Taylor, and Schellinger 2011 provides a list of intervention programs as well as evidence on their impact.
109 UNRWA (United Nations Relief and Works Agency for Palestine Refugees) 2013.
110 Schwandt and von Wachter 2020.
111 US Centers for Disease Control and Prevention 2020a.
112 Ministry of Education, Culture, Sports, Science, and Technology – Japan 2020.
113 Government of Norway 2020.
114 Murray 2020.
115 US Centers for Disease Control and Prevention 2020b.
116 McMichael 2019.
117 Schools may also require other infrastructure investments, for instance to ensure access to electricity or broadband connectivity.
118 World Bank 2020b.
119 Longden 2013.
120 Cilliers, Fleisch, Prinsloo, and Taylor 2019; Castro, Glewwe, and Montero 2019.
121 Agostinelli, Avitabile, Bobba, and Sanchez 2019.
122 World Bank 2020b.
123 Shonchoy and Ito 2011.
124 Banerjee, Banerji, Berry, Duflo, Kannan, Mukherji, Shotland, and Walton 2016.]
125 The learning losses in Pakistan after the 2005 earthquake were much larger than can be explained by school closures alone. Therefore, it is likely that the children learned less in each year after reenrolling in school (Das, Daniels, and Andrabi 2020). It is possible that teachers weren't equipped to promote learning recovery or that they felt compelled to stick to the original curriculum, notwithstanding the learning lost during earthquake-related school closures, and that this generated further losses even after schools reopened.
126 Friedman 1995.
127 Benhenda 2019.
128 Ingersoll and May 2012.
129 O'Cummings and Therriault 2015.
130 European Commission 2013.
131 UNDP 2015.
132 Gercama and Bedford. 2015.
133 Jackson, Wigger, and Xiong 2018.
134 News in English 2020.
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136 Ministry of Children and Education – Denmark 2020.
137 Tapper, Batty, and Savage 2020.
138 Shafiq 2010.
139 Frankenberg, Smith, and Thomas 2003.
140 Shafiq 2010; Skoufias 2003.
141 Prawda and Psacharopoulos 1993; Filmer, Nielsen, Suwaryani, and Indriyanto 2014.
142 UNESCO 2010.

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The COVID-19 pandemic threatens education progress worldwide through two major shocks: (i) the near-universal closing of schools at all levels and (ii) the economic recession sparked by pandemic-control measures. Without major efforts to counter their impacts, the school-closings shock will lead to learning loss, increased dropouts, and higher inequality, and the economic shock will exacerbate the damage, by depressing education demand and supply as it harms households. Together, they will inflict long-run costs on human capital and welfare.

But if countries move quickly to support continued learning, they can mitigate the damage and even turn recovery into new opportunity. The policy responses to achieve this can be summarized in three overlapping phases: Coping, Managing Continuity, and Improving and Accelerating. In implementing these policies, education systems should aim to recover but not replicate the past—given that in many countries, the pre-COVID status quo was already characterized by too little learning, high levels of inequality, and slow progress. Countries now have an opportunity to "build back better": they can use the most effective crisis-recovery strategies as the basis for long-term improvements in areas like assessment, pedagogy, technology, financing, and parental involvement.

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