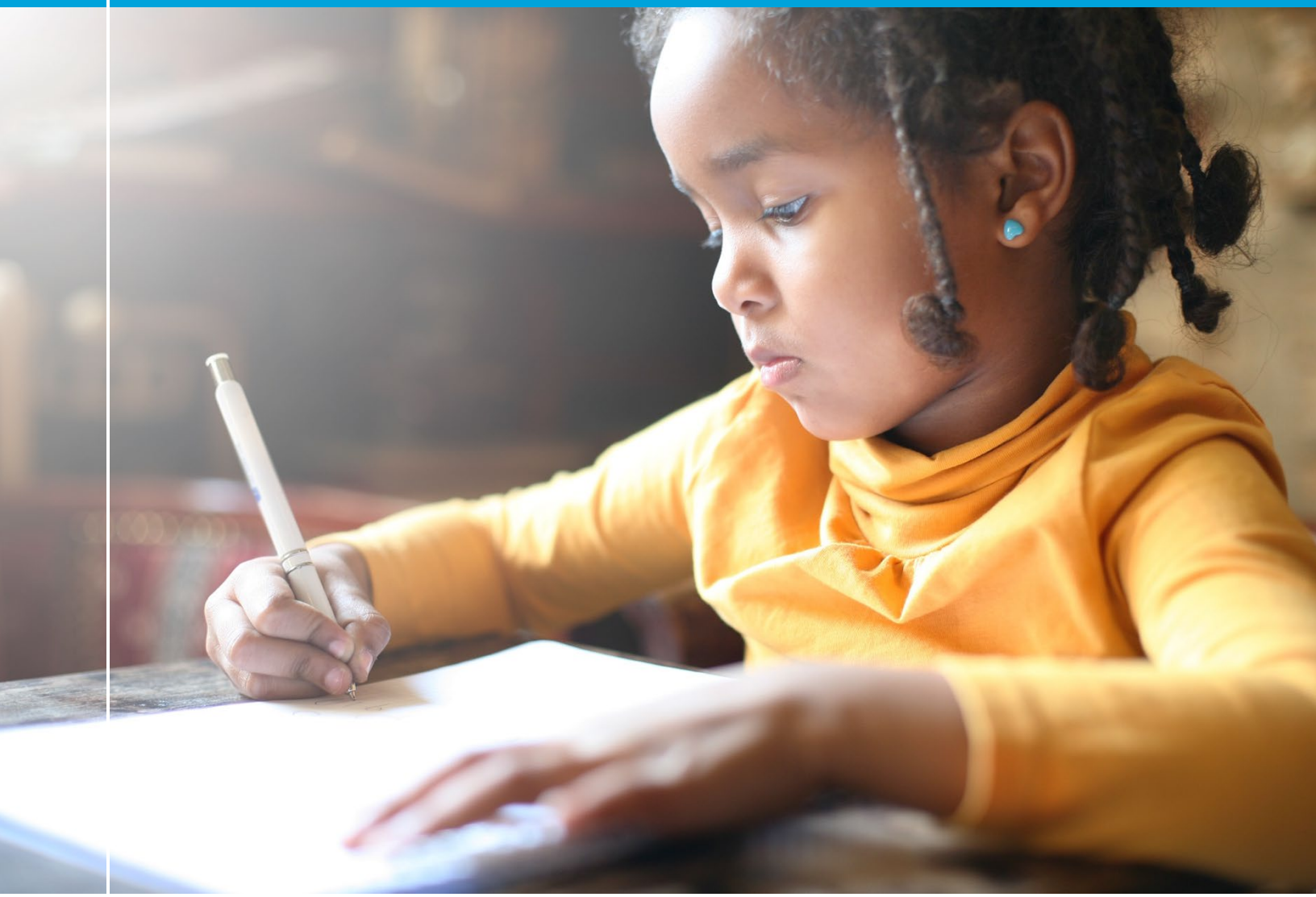
The State of Global Learning Poverty: 2022 Update



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The State of Global Learning Poverty: 2022 Update

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Acknowledgments

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Foreword

The deep pre-COVID learning crisis has been made even more severe by the pandemic. One of the most intuitive indicators of the learning crisis is the learning poverty rate, which measures the share of children who cannot read a simple text with comprehension by age 10. Widespread learning poverty predated the pandemic: this report shows that in 2019, before the pandemic hit, the learning poverty rate was already estimated at 57 percent in low- and middle-income countries, and that in Sub-Saharan Africa it was 86 percent. Moreover, global progress against learning poverty had already stalled: between 2015 and 2019, there was no reduction in global learning poverty. Reading, together with writing, numeracy, and socioemotional skills, is a building block for all the other education outcomes that societies care about. The very high level of global Learning Poverty is a signal that many education systems, despite their progress in the recent decades at improving access to schools, have not delivered learning. The magnitude of the learning challenge in the developing world is immense, and it is now even larger than before as a consequence of the pandemic.

Since the onset of COVID-19, the school closures and disruptions caused by the pandemic have likely driven learning poverty rate much higher still. The 2022 simulations presented in this report that build on the most up-to-date data and evidence on learning and the impacts of the pandemic suggest global learning poverty in low- and middle-income countries has surged to an estimated 70 percent. The increases have been especially large in South Asia and in Latin America and the Caribbean, the regions where schools have been closed the longest. Because universal foundational skills are essential to the flourishing of individuals and societies, this widespread learning poverty threatens to undermine the future of today's children and the economic prospects of their countries.

Concerted action against learning poverty is urgently needed now, with every society prioritizing the welfare of today's children and youth. To safeguard the future, it is essential to make this a turning point. We need to ensure a sharp acceleration of learning, starting in the short term with a robust recovery from the COVID shock. There will be nothing automatic about this recovery and acceleration. Just reopening schools does not heal the scars of the pandemic, let alone solve the problems that caused such high levels of learning poverty even before COVID. Policymakers, schools, teachers, and families will need better strategies, bolstered by additional financing and support, to recover and accelerate learning, especially for those most harmed by the school closures. In most countries, those most harmed are not only marginalized minorities or the very poor; despite efforts in many countries to reach students with some type of remote learning, the vast majority have seen their learning process seriously impacted. The stagnation of global progress since 2015 shows that education systems were already failing in reducing learning poverty. To provide opportunity for all children, this has to change—and change will require both political and technical advances that ensure effective approaches for promoting foundational learning reach all children and youth. This report lays out a menu of policy options for doing this. It is essential for governments to set clear priorities for tackling learning poverty and figuring out which approaches work best in their countries.

Fighting this learning crisis is the challenge of our times if we do not want to lose this generation of children and youth. Investing in their education is a precondition to avoid a future negative shock to productivity, earnings, and welfare; is essential for social stability, peace, and security; is critical for building fairer societies and ensuring equality of opportunities for all; and is essential to change

mindsets regarding the urgency of climate change. This is a global challenge, and a collective effort is needed to raise awareness and support national efforts.

A global coalition can support these national efforts, which is why our six organizations are working together very closely on the agenda of foundational learning. This coalition is advancing on various fronts. First, we are speaking with one voice on the vital importance of foundational skills to the SDGs. Learning poverty is one key indicator of this, as it stands in for a broader set of foundational skills that all children need for further education, employment, and citizenship. At the same time, we are working closely together on other fronts—closing the learning data gap, building evidence on how to promote foundational learning for all children, and providing coordinated financial and technical support to countries that show real commitment to reducing learning poverty. We are confident that countries can turn the tide on reducing learning poverty, accelerating learning, and building the foundations for more prosperous and equitable societies.

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Executive Summary

- **Even before COVID-19, the world was facing a learning crisis, with nearly 6 out of every 10 ten-year-olds in low- and middle-income countries suffering from learning poverty—meaning they were unable to read and understand a simple story.**
- **Now COVID-19 pandemic school closures and disruptions have deepened the crisis, sharply increasing learning poverty and exacerbating the inequalities in education.**
- **Without urgent action to reduce learning poverty, we face a learning and human capital catastrophe.**
- **If children do not acquire the basics of literacy—together with numeracy and other foundational skills—the futures of hundreds of millions of children around the world, and their societies, are at grave risk.**
- **There is a narrow window to act decisively to recover and accelerate learning.**
- **This will require firm political commitment and implementation of evidence-based approaches for rapid impact.**
- **The good news is that the core policies that can help recover learning lost to the pandemic will also address the deeper underlying learning crisis that predated COVID-19, accelerating learning and delivering long-term benefits for economies and societies.**

Global learning poverty is at crisis levels and continues to worsen in the wake of the worst shock to education and learning in a century. The learning poverty indicator was launched by the World Bank and the UNESCO Institute for Statistics in 2019 to spotlight the global learning crisis. High rates of learning poverty are an early signal that education systems are failing to ensure that children develop critical foundational skills and thus are far from reaching, and in many cases are not on track to reach, the SDG 4 target of universal quality education for all by 2030. This makes it much harder for children to acquire the technical and higher-order skills needed to thrive in increasingly demanding labor markets, and for countries to develop the human capital needed for sustained, inclusive economic growth.

The learning crisis long predated COVID-19. New data presented in this report confirms that learning poverty was very high even before the pandemic hit: in 2019, the average global learning poverty rate in low- and middle-income countries was 57 percent. In other words, nearly 6 out of 10 children were not acquiring even minimal proficiency in literacy by age 10 before the pandemic hit. And in Sub-Saharan Africa, 86 percent of children already suffered from learning poverty in 2019.

Even more concerning, progress against learning poverty had already stalled before COVID-19. The new data shows that between 2015 and 2019, global learning poverty rose further from 53 percent—the baseline estimate when the learning poverty indicator was launched—to 57 percent. This stagnation marks a change from the 2000-2015 period, when global learning poverty had fallen from 61 to 53 percent.[1]

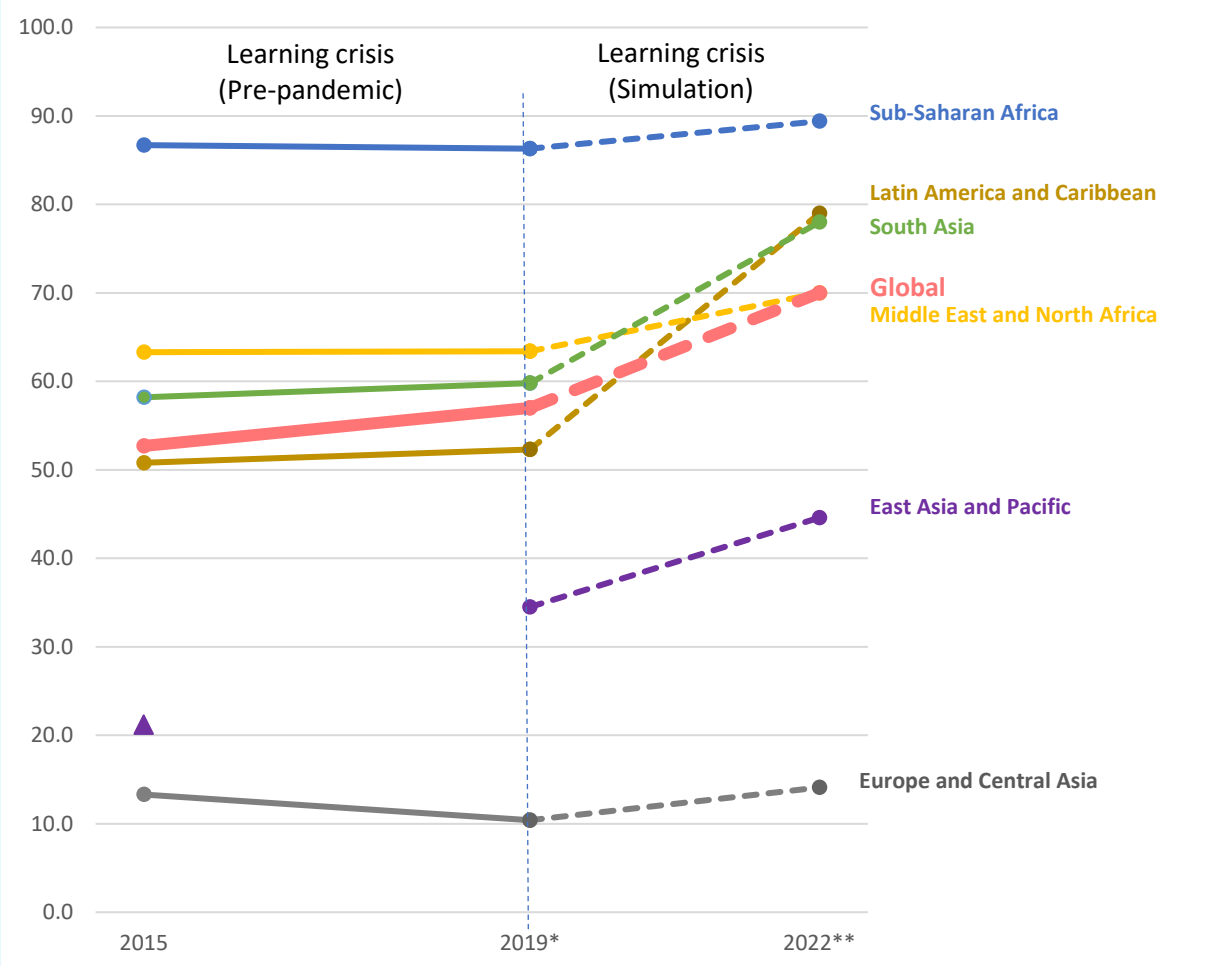
Since then, the pandemic has led to an unprecedented disruption of schooling and learning around the world. Globally, between February 2020 and February 2022, education systems were fully closed for

in-person schooling for about 141 days on average. In South Asia and Latin America and the Caribbean, children lost on average 273 and 225 full days of school, respectively. As a response to the school closures, almost all countries implemented different strategies of remote learning. As countries realized that, due to the lack of connectivity and the existence of a wide digital divide, it was not possible to rely only on the internet to provide learning materials or any type of interaction between students and teachers, they relied on TV and radio, which expanded quickly across the globe. However, these efforts were very heterogenous across regions in terms of strategies, depth of supply, and usage. Evidence is accumulating that the capacity of these remote learning efforts to substitute for in-person learning is very low. As a result, in many countries the school closures led to large learning losses. This is true even in countries with high internet penetration and higher levels of digital skills among the teaching force.

The simulation results based on the latest available data and evidence indicate that the pandemic has likely caused a sharp increase in global learning poverty, to an estimated 70 percent (Figure 1), and exacerbated inequalities in education. To assess the potential impact of the pandemic in education we simulate possible changes in Learning Poverty. The simulation modeling for this report shows that 7 out of 10 children in low- and middle-income countries could now be suffering from learning poverty. This means that an additional 1 out of every 8 children in low- and middle-income countries is now in learning poverty, and that all of the gains in learning poverty that low- and middle-income countries recorded since 2000 have been lost The increases in learning poverty have likely been largest in South Asia and in Latin America and the Caribbean, due to the very long school closures in those regions. In both regions, school closures were long and widespread across the territory, and schools were kept shuttered even after economies started to gradually open and even after vaccines started to be available for large segments of the population. In both regions, lack of connectivity for about half of the population precluded the use of internet for remote learning or to distribute learning material. Use of TV and radio for remote learning expanded quickly in many countries, but that was not enough to provide meaningful learning to most students. Only the richer segments of the population—those with broadband connectivity, access to devices for the use of each family member, a place to study, availability of books and learning material, and a conducive home environment, among other conditions—were able to maintain a reasonable level of education engagement. On the other hand, in Sub-Saharan Africa and in East Asia and the Pacific, with the exception of a few specific countries, school closures were much shorter. Comparing across income levels, in middle-income countries the likely increases in learning poverty were generally much larger than in low-income countries. This pattern stems largely from the longer school closures in middle-income countries and their higher levels of in-school learning during normal times. In all these countries, the efforts to expand remote learning were insufficient to compensate for the impacts of school closures.

The simulation model shows that because of the long school closures and the ineffectiveness of remote learning attempts during the pandemic, 7 out of 10 children in low- and middle-income countries could now be suffering from learning poverty. That would mean that due to this shock, an additional 1 out of every 8 children in low- and middle-income countries are now in learning poverty, and all of the gains in learning poverty that low- and middle-income countries recorded since 2000 have been lost. But this is a simulation. Learning losses can be reversed if urgent action is taken.

Figure 1. Learning Poverty Globally and by Region—2015 and 2019, with 2022 Simulation Estimates



Note: Numbers for 2022 are simulations. The global figure is for all low- and middle-income countries. Regional and global figures are all population-weighted averages. For the East Asia and Pacific region, the 2015 and 2019 averages are not directly comparable, due to major improvements in data quality and availability and new assessments recently available for the two years. This report follows the World Bank regional classification; for details, please see this page.[2] For methodological details and all other simulation results, see Azevedo et al. 2022.

Recent data available for a few countries corroborates the expectation that learning losses might be very large. Emerging data that measures actual learning levels of children in reopened school systems around the world in many cases corroborates the predictions of large learning losses.[3] For example, data available for the State of São Paulo in Brazil (one year after the onset of the pandemic), for the state of Karnataka in India, and for a few states in Mexico shows learning losses equivalent to the extent of the school closure—meaning that one year of school closures maps to roughly one year of normal learning that was not achieved or was forgotten.

The very high levels of learning poverty, both before COVID and now, violate children's right to education. After all the hard work by so many families and educators to provide education for all, manifested in rising enrollments, it is unacceptable that 70 percent of children in low- and middle-income countries may not be reading with comprehension at even a minimally adequate level. Moreover, parents are often not aware of how little their children are learning, because of the lack of effective use of learning assessments. This violates the trust that families have placed in education—trust that has led to 90 percent enrollment at primary level in the low- and middle-income countries—and it undermines realizing the high returns that investments in education can deliver to children and their communities

The very high levels of learning poverty, both before COVID and now, violate children's right to education.

Coming on top of the widespread pre-COVID learning poverty, the learning losses from the pandemic could generate a major shock to human capital accumulation and productivity. Lost foundational learning will translate into lower levels of skills, which in turn will reduce productivity and earnings of today's children once they enter the workforce. Research using systematic measures of adult skills shows that even among those with the same level of schooling, those with better literacy and numeracy skills earn substantially more.[4] Lost foundational learning due to the shock will ultimately translate into lower levels of adult skills, which in turn will reduce productivity and earnings of today's children once they enter the workforce. These human capital impacts from disruptions can have substantial effects on the affected generation; in Zimbabwe, children whose schooling was reduced by a drought in the 1980s saw their lifetime earnings fall by 14 percent.[5] During the Ebola outbreak, teenage pregnancies increased in some communities by as much as 65 percent,[6] and some girls never returned to the classroom after schools reopened, due to increased rates of sexual abuse and exploitation, as well as teenage pregnancies.[7]

A swift response is essential: not only was learning poverty already high, but the recent learning losses could be compounded over time, making the cost of inaction especially high. Many education systems were already unable to ensure learning, and now students are returning to school with even less of the foundations needed to benefit from instruction. Evidence from past disruptions to education, such as the 2005 Pakistan earthquake, shows that without recovery measures, learning losses may grow even more after children return to school, if the curriculum and teaching do not adjust to meet students' learning needs.[8] As students fall further behind the curriculum, the risk grows that many will

become disengaged and ultimately drop out of school. Even if they remain in school, this dynamic could lead to a much greater range of learning levels in the classroom, which makes it even more challenging for teachers to meet the needs of their students. Actions that countries take in the short term—even over just the next year—could therefore make a big difference for the longer-term learning trajectory of a generation at risk.

What to do in the next few months?

It is not enough for children to return to school. The curriculum and teaching must adjust to meet students' learning needs. As students fall further behind the curriculum, the risk grows that many will become disengaged and ultimately drop out of school. Many countries are already implementing several of the policies in the RAPID framework, but scaling them up to all children in all countries is urgently needed.

Without action, the current generation of students now risks losing $21 trillion in lifetime earnings in present value, or the equivalent of 17 percent of today's global GDP. Relative to current incomes, this economic cost is disproportionately borne by low- and middle-income countries, in which this generation of students could lose $11 trillion of lifetime earnings.[9] In addition to this intergenerational inequality shock, evidence is mounting that the shock has worsened inequality within the current generation of children, as those from lower socioeconomic backgrounds and other disadvantaged groups have suffered larger learning losses.[10] Putting this as annual earnings equivalent, in low- and middle- income countries, this implies that the average person of the school-age generation might see a reduction in annual income of $975.

Recovery from this major blow to human capital requires national political commitment at all levels, from the highest political offices to all members of society. A key first step is for political leaders to highlight to the public the serious threat that the learning crisis poses, the extent it has worsened due to disruptions in schooling and learning during the pandemic, and to make solving it a top priority. But commitment at the top levels of government is not enough. Recovering from this massive shock, and then turning the tide against the longer-term learning crisis that predated COVID, will also require broader national coalitions for learning recovery and acceleration—coalitions that include families, educators, civil society, the business community, and other ministries. And this commitment needs to be further translated into concrete actions at the national and sub-national levels, with better learning measurement to end the learning data crisis, clear targets for progress, and evidence-based plans supported by adequate financing and good implementation. National commitments to education require that all actors align in the design and implementation of reforms with the sole objective of improving the education and wellbeing of children and youth—not the positions or interests of political parties or unions, nor the interest of suppliers, vendors, or providers, or any other education stakeholders, but only the interest of students.

The good news is that there are policies to recover learning losses in the short term, and that these policies will also allow countries to accelerate learning and take on the deeper pre-pandemic learning crisis. The RAPID framework for learning recovery and acceleration (recently formulated by the UNICEF,

UNESCO, and the World Bank) synthesizes the menu of policy interventions that countries could consider and adapt to their local context—many of which are already being implemented at the country level, although in different combinations and with varying reach. These interventions also coincide substantially with those that were most effective at accelerating learning before COVID, based on evidence from high-performing education systems and rigorously evaluated programs.[11] These are short-term interventions that must be complemented with many other reforms in teachers' careers and incentives, curriculum, instructional methods, safety, infrastructure, and management, among others, in order to sustain acceleration. RAPID focuses on what countries must do—and what many already doing—during the next few years. The five elements of RAPID are:

- **Reach every child and keep them in school:** As schools reopen, it is crucial to monitor children's enrollment, attendance, and grade progression; understand why some children have not returned to school; and support them to return and to stay in school. Back-to-school campaigns, family outreach and early warning systems can help keep children in school, as can removing school fees, as well as introducing or expanding cash transfers and school feeding programs.

- **Assess learning levels regularly:** Measuring children's current learning levels after their return to school is essential, to help teachers target instruction in the classroom to each child's starting point. This requires providing teachers with formative assessment tools that they can easily apply in the classroom. Regular system assessments of learning are also needed to guide system-level decisions on how to continue to reduce to learning poverty and dropout..

- **Prioritize teaching the fundamentals:** Learning recovery efforts should focus on essential missed content and prioritize the most foundational skills and knowledge, particularly literacy and numeracy, that students need for learning within and across subjects and for more advanced learning in the future. This focus is especially important, given the dense and overreaching curricula implemented in many countries, and it is essential to free teachers from the excessive burden of having to cover too much material. Learning recovery programs should also help teachers to improve their teaching of foundational skills, notably through specific and practical training and teacher guides connected to well-designed student textbooks. Pre-COVID evidence from countries like Brazil and Kenya showed that a greater focus on foundational learning, with practical tools to support it, is central to successful learning acceleration as well.

- **Increase the efficiency of instruction, including through catch-up learning:** To recover missed learning, school systems need to adopt effective teaching practices that support teachers in their immediate classroom challenges, as they are receiving children with larger and more varied learning deficits. These practices include learner-focused recovery strategies such as structured pedagogy programs, instruction targeted to students' current learning levels, individualized self-learning programs, tutoring, and catch-up programs for out-of-school children. In tandem with these strategies, extending instructional time by modifying the academic year or offering summer school can further accelerate learning recovery. Several of these interventions, too, were identified as cost-effective approaches to learning acceleration before COVID.[12]

- **Develop psychosocial health and well-being:** The pandemic has harmed the mental health and psycho-social wellbeing of both learners and teachers, compounding risks for those who are already marginalized. It is crucial to ensure that schools are safe and that children are healthy and protected from violence and can access basic services—such as nutrition, counselling, water, sanitation, and hygiene services. Promoting children's welfare is inherently of great value, and it also has the benefit of promoting learning: children learn best when they experience joy and a sense of belonging at school.[13]

A key step for political leaders is to highlight for the public the serious threat that the learning crisis poses and the extent it has worsened due to disruptions in schooling and learning during the pandemic, and to make solving it a top priority.

To lead to broad, sustained acceleration of learning, these short-term interventions must be implemented at scale, and this implementation must be part of a national strategy of structural reforms over the longer term. Some countries are adopting some of these interventions for learning recovery—but to avoid huge losses to productivity and inclusion of today's children, this now needs to happen much more widely, and it needs to serve as the basis for learning acceleration. While the interventions can make a substantial difference in the short run even where policy frameworks are weaker, sustained progress will depend on reforms like ensuring a professionalized teaching career and ongoing teacher support, providing well-designed textbooks and teaching and learning materials for all, closing the digital divide, ensuring that schools are safe and inclusive, and investing in managing schools and the system in a professional way that focuses relentlessly on improving education outcomes.

With the urgent implementation of these policies, it is possible to recover and accelerate learning and to build more effective, equitable, and resilient education systems. This is what is needed to increase learning by as much as possible by 2030—and continue that work beyond 2030—and to ensure that all children and youth have the opportunity to shape the future they deserve.

Contents

Introduction

"A world where every child could read is definitely a goal worth pursuing."

Ayomide Olawale

19-year-old student, Nigeria

All children should be able to read with comprehension by age 10. Reading is a gateway for learning as the child progresses through school—and conversely, an inability to read slams that gate shut. Beyond this, when children cannot read, it is usually a clear indication that school systems aren't well organized to help children learn in other areas such as math, science, and the humanities. And although it is possible to learn later in life with enough effort, children who don't read by age 10—or at the latest, by the end of primary school—usually fail to master reading later in their schooling career.[14]

Even before COVID-19, it had become clear that many children around the world were not learning to read proficiently. While most children were in school, a majority were not acquiring foundational skills. Moreover, even before the pandemic-driven school disruptions, nearly 260 million children and youth were not in school.[15]

This is the leading edge of a learning crisis that threatens countries' efforts to build human capital and shared prosperity, and achieve the Sustainable Development Goals (SDGs). Without foundational learning, students often fail to thrive later in school or when they join the workforce. They don't acquire the human capital they need to power their careers and economies once they leave school, or the skills that will help them become engaged citizens and nurture healthy, prosperous families. When young people lack these skills, it threatens equity and stability of a nation. And as a major contributor to human capital deficits, the learning crisis undermines sustainable green growth, poverty reduction, and shared prosperity at a global and national level. The impacts of schooling and learning on growth can be very large: Recent research estimates that three-quarters of differences in long-term growth across countries can be explained by differences in levels of learning of the population.[16]

To acutely spotlight the learning crisis, in October 2019 the World Bank and the UNESCO Institute for Statistics launched the concept and indicator of learning poverty,[17] drawing on new data produced in the context of SDG 4. Learning poverty means being unable to read and understand a simple text by age 10. This indicator brings together schooling and learning indicators: it begins with the share of children who haven't achieved minimum reading proficiency (as measured in schools) and is adjusted by the proportion of children who are out of school (and are assumed not able to read proficiently).

This report provides the first update of the global and regional learning poverty numbers, and it reaffirms that even before COVID, learning poverty was very high and progress in reducing it had stalled. The average global learning poverty rate was 57 percent in low- and middle-income countries in 2019, with the rate reaching 86 percent in Sub-Saharan Africa. Even more concerning, after significant global progress in reducing learning poverty between 2000 and 2015, progress had stalled between 2015 and 2019.

Since then, COVID has likely sharply increased learning poverty: simulations of the impacts of the COVID-driven school disruptions and ensuing economic shocks clearly point to an amplification of the severe pre-pandemic learning crisis. Our best estimate is that the global learning poverty rate may now have reached 70 percent, with especially large increases in South Asia and in Latin American and the Caribbean, the regions where schools have been closed the longest. Action is urgently needed now—business as usual is not sufficient to heal the scars of the pandemic, and it will certainly not accelerate progress enough to meet the ambitions of SDG 4.

This report adds to other recent evidence presented on the impacts of the pandemic. With *Mission: Recovering Education*, UNESCO, UNICEF, and the World Bank joined forces in early 2021 to provide guidance and support to countries navigating the crisis. Several joint public goods have been produced aligning messages, surveys, and protocols to help countries respond to the dramatic consequences of COVID on this generation of students. In December 2021, the World Bank, UNESCO, and UNICEF warned in *The State of the Global Education Crisis* that the pandemic was leading to unprecedented losses in the human capital of the current generation of students, and that governments had to act quickly to reverse the damage. Then in March 2022, the *Where Are We in Learning Recovery?* report (UNICEF, UNESCO, and the World Bank) laid out a strategy, the RAPID framework, that could help countries guide the learning recovery. This report reinforces those messages with the first update of the global and regional learning poverty rates, together with updated simulations showing a substantial surge in learning poverty since the pandemic. It also lays out an agenda for action, built around political commitment and interventions to recover and accelerate learning. This report expands the partnership of co-signers to include other major actors in international education and development—UK's FCDO, USAID, and the Bill & Melinda Gates Foundation. By aligning around a unified message on the importance of recovering and accelerating foundational learning, the co-signing organizations seek to highlight the need for countries to act urgently and decisively. Finally, this report is accompanied by a companion *Guide for Learning Recovery and Acceleration*, also co-signed by all six institutions, that provides detailed guidance and concrete country examples on interventions for learning recovery and acceleration.

Rapid learning recovery is indeed possible. There are resources and concrete actions—summarized in the RAPID framework—available for every education system to help their children recover lost learning, and to use the recovery to reduce learning poverty and accelerate long-term progress. The 5-part RAPID framework captures essential policy actions of a learning recovery and acceleration program, and its acronym conveys a sense of the urgency required to meet the challenges brought by this global shock to education—and by the pre-COVID learning crisis. Recovery and acceleration require improving instruction at scale, for all children, by making sure that education systems: (i) Reach every child and keep them in school; (ii) Assess learning levels regularly; (iii) Prioritize the fundamentals; (iv) Increase the efficiency of instruction, including through catch-up learning; and (v) Develop the psychosocial health and well-being of children and teachers. A robust learning recovery program built around these approaches, sustained over time, can serve as a springboard for also tackling the pre-pandemic learning crisis and giving all children the opportunity to achieve the future they deserve.

This report expands on each of these key points. Part I presents the latest data on global and regional learning poverty rates, both just before COVID hit and today, to map out the scale of the global learning crisis. Part II summarizes how countries can recover and accelerate learning with political commitment and an evidence-based RAPID-informed strategy. Finally, taking a deeper look at the learning poverty data, the report argues that behind the learning crisis there is a learning data gap. Without timely data,

it is impossible to get an accurate understanding of the magnitude of the challenge and institute effective policies to accelerate the fight against learning poverty. The report therefore includes a Spotlight deep dive into the data and indicators needed to inform the fight against learning poverty, and more broadly to monitor whether countries are on track to meet their broader education and learning goals.

Part I: Learning Poverty, pre- and post-COVID

"When I was at the age of 12, I was unable to read and write nor spell my own name, and because of this, communication became harder by the day… No one should have to experience the same shame and embarrassment I constantly felt as a child due to my incapacity/incapability to read and write well. If I became the minister of education in my country, I would see to it that every child by the age of 10 is able to read and write well."

Grace Erika Meki Jumah

16-year-old student, Malawi

- **Even before COVID-19, the world was facing a learning crisis, with nearly 6 of every 10 children in low- and middle-income countries suffering from learning poverty—meaning they were unable to read and understand a simple text.**
- **Pandemic-driven school closures have deepened the crisis, sharply increasing learning poverty to an estimated 70 percent and exacerbating the inequalities in education.**
- **Without urgent action to reduce learning poverty, we face a learning catastrophe.**

COVID-19 has caused unprecedented disruptions to schooling. At the peak of the COVID-related school closures, 1.6 billion children in 188 countries were impacted. Globally, between February 2020 and February 2022, education systems were fully closed for in-person schooling for about 141 days on average. While some countries quickly reopened schools, the closures were especially long in South Asia (273 days on average), Latin America and the Caribbean (225 days), and the Middle East and North Africa (183 days).

While recent data on academic learning, school participation, socioemotional wellbeing, and enrollment remains patchy, evidence is mounting from many countries that these closures substantially reduced learning and increased learning inequality around the world. In many countries—and especially in low- and middle-income countries—data from new measurements of student learning is confirming that remote learning was largely ineffective and a poor substitute for in-person schooling.[18] Most countries did not have well-designed remote learning systems at scale set up before the pandemic, and despite great efforts and investments, the systems hastily constructed as school closed did not have the necessary reach or quality. Moreover, the closures led to or exacerbated deep inequalities in learning outcomes, along dimensions of geography, gender, age/grade, socioeconomic status, ability, and more. For example, there is evidence that the decline in learning resulting from limiting the school experience to only remote schooling, is likely greater for younger children, who benefit most from quality in-person interactions, and whose families are less likely to prioritize their learning during school closures. There is also evidence that widespread school closures have disproportionally affected students from disadvantaged backgrounds, who are less likely than their peers to have the necessary connectivity, books, instructional material, and physical space to work and study at home and to be strongly supported to learn at home.[19]

This section provides an update on one important global indicator for measuring the learning losses due to the pandemic: the rate of learning poverty. The learning poverty rate is a signal of how far a system is from reaching the SDG 4 target of universal quality education for all by 2030. The new evidence on learning poverty reveals both the pre-pandemic learning crisis in basic education and the damage done by the pandemic.

Learning poverty: What it is and why it matters

Children have a human right to quality education, and foundational skills are essential to fulfilling that right. SDG 4 commits all signatories to ensure that, by 2030, "all girls and boys complete free, equitable and quality primary and secondary education." At the primary level, this means that every child should both complete primary school and achieve at least minimum proficiency in reading and numeracy (and other skills). Moreover, foundational skills power individual careers as well as the social and economic prosperity of nations. Reducing learning poverty, and improving all educational outcomes in general, is central to improving health, peace, security and stability, equality of opportunity, and the mindsets change needed to address the climate change challenges at a local and global level.

The learning poverty rate measures the proportion of children who are unable to read a simple text with comprehension by age 10. Launched in 2019 by the World Bank and the UNESCO Institute for Statistics, the learning poverty rate is calculated by combining the share of primary-age children who are out of school with the share who are in school but have not achieved this minimum proficiency in reading by the end of primary. In other words, it captures both schooling and learning, and it is aligned with the SDG 4 indicators measuring whether all primary-age children are in school (SDG 4.1.4) and acquiring meaningful skills by the end of primary (SDG 4.1.1b). Box 1 gives more detail on how learning poverty and other related indicators are calculated.

Of course, learning how to read is only an early milestone, albeit an important one, for a good quality education. The pandemic has shown the role of schools as a central part of the social fabric of society, providing children with knowledge and cognitive skills, socioemotional skills, and executive function development. Schools provide children an opportunity to learn subjects as diverse as mathematics, science, arts, and citizenship and to develop socioemotional skills and physical and mental health, and so much more.

Why does reading with comprehension matter?

Learning Poverty serves as a useful early signal of risks to broader education quality.

- Reading is such a foundational skill for higher levels of learning and for most of the educational outcomes that societies care about.
- Systems that ensure that all children learn to read tend to do well in promoting other domains of learning too—so high learning poverty signals other weaknesses.
- The Learning Poverty rate measures what share of all children are not able to read with comprehension, including both those who are in school and not learning and those who are not even in school. It therefore indicates the society's failure to give children the fundamental skills they need for life.

Yet learning poverty can be a useful early warning measure of how deep the learning crisis was before the pandemic, and of how the pandemic has deepened this crisis. Some of the main reasons that learning poverty serves as a useful early signal of broader education quality are: first, reading is such a foundational skill for other subjects and for higher levels of learning; second, systems that ensure that all children learn to read tend to do well in promoting other domains of learning too; and third, the learning poverty rate combines schooling and learning in a single easy-to-understand indicator. For all these reasons, this report focuses on learning poverty, but always as a stand-in for the deeper learning and schooling crisis.

Box 1. Learning poverty and related concepts explained

Learning poverty means being unable to read and understand a simple text by age 10. The indicator combines the share of primary-aged children out of school, who are defined as schooling-deprived (SD), and the share of pupils below a minimum proficiency in reading, who are defined as learning-deprived (LD).

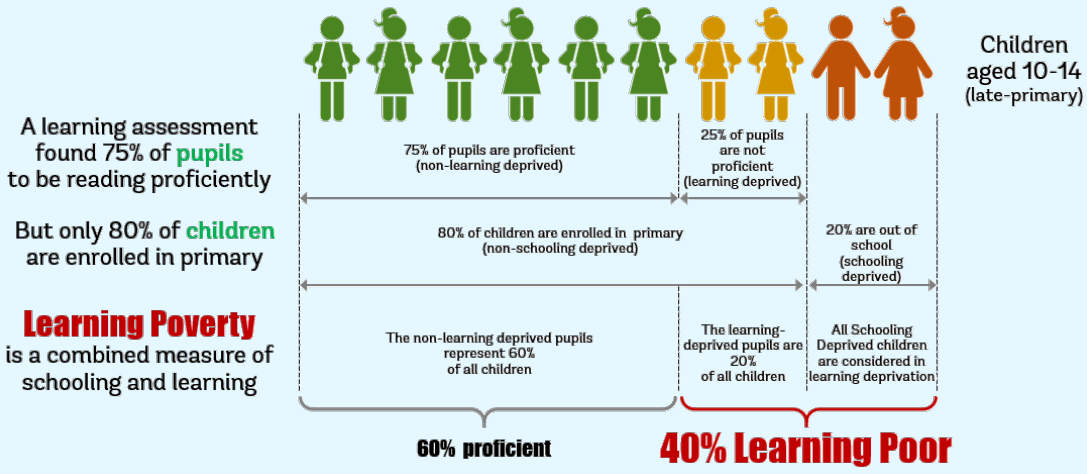
Learning poverty = Schooling deprivation + [(1- Schooling deprivation) x Learning deprivation]

Learning deprivation is defined as the share of children at the end of primary who read below the minimum proficiency level, as defined by the Global Alliance to Monitor Learning (GAML) in the context of the SDG 4.1.1b monitoring for reading. This is calculated for those children who are attending school.

Schooling deprivation is defined as the share of primary-aged children who are out of school. All out-of-school children are assumed to be below the minimum proficiency level in reading. This dimension is linked to SDG 4.1.4 (the out-of-school rate).

This figure shows a hypothetical example of how learning poverty is calculated using data on learning deprivation and schooling deprivation.

Figure 2. How Learning Poverty is Calculated



Beyond learning poverty and its constituent indicators, there are two other learning indicators that measure the learning status of children who are below the minimum proficiency level in reading:

Learning poverty gap captures the average distance of a learning-deprived child to the minimum proficiency level and indicates the average increase in learning required to eliminate learning poverty. It helps capture the average learning shortfall among children under the minimum proficiency level.

Learning poverty severity captures the inequality of learning among the learning-poor population. The severity measure can distinguish between an increase in the learning gap driven by students near the threshold and one driven by those at the very bottom of the learning distribution.

For more information, see Azevedo 2020 and Azevedo et al 2021.

This next section presents new estimates of learning poverty in 2019, just before COVID-19 hit, and compares them with comparable estimates from 2015, and then discusses simulations of how much learning poverty is likely to have increased during the pandemic. These new statistics on the state of learning poverty are meant to inspire and guide country policy responses, which will be discussed in Part II of the report.

Learning poverty was already very high and not improving before COVID-19

When the UNESCO Institute for Statistics and the World Bank first launched the learning poverty measure in 2019, the global 2015 estimate was 53 percent.[20] In other words, over half of all 10-year-old children in low- and middle-income countries had not acquired even the minimum reading skills necessary for all subsequent learning. In fact, the situation is even worse than this indicates. While the concept aims to capture learning of 10-year-olds, due to shortcomings in available data, many of the children covered by the data were not tested until at least age 12—yet they had not yet acquired foundational reading skills even at that point.

New data presented in this report show that in 2019, the global learning poverty rate was even higher than previously thought: 57 percent of children in low- and middle-income countries were living in learning poverty. Since the original learning poverty estimates were produced three years ago, new internationally comparable assessments of student learning have been carried out in several regions—Latin America and Caribbean, East Asia, and Sub-Saharan Africa. This new data thus gives us a more recent global and regional picture of the learning crisis on the eve of the pandemic, and also one with somewhat better country coverage. Out of 144 low- and middle-income countries, we now have data within the Learning Poverty reporting window for 69 countries and for approximately 81 percent of the relevant school-age population, compared with 62 countries and a population coverage of 80 percent in the original report. The number of reporting countries has increased in all regions except in the Middle East and North Africa and in South Asia, where the number remained constant.

Children in Sub-Saharan Africa suffered from the worst learning poverty by far even before the pandemic, but learning poverty was very high in other regions too. In 2019, the learning poverty rate was 86 percent in Africa and above 50 percent in three other regions—the Middle East and North Africa (63 percent), South Asia (60 percent), and Latin America and the Caribbean (52 percent) (Figure 3a).

Disturbingly, progress against learning poverty had stalled even before COVID-19. There had been improvement before 2015, as global learning poverty fell from 61 to 53 percent between 2000 and 2015.[21] Against this backdrop, the increase in learning poverty between 2015 and 2019, from 53 to 57 percent, is especially concerning. While there are issues with precise comparability because of improved measurement, including better learning assessments (as explained in Box 2), it is clear that there was no progress at the global level during this period. For the two regions—Sub-Saharan Africa and Latin American and the Caribbean—that repeated earlier regional assessments in 2019, the results showed little or no improvement, as Figure 3a shows.[22] The increase in the global learning poverty rate is also driven partially by continuing demographic shifts, such as Sub-Saharan Africa's increasing share of the world's school-age children. While some countries in the region, such as Kenya and South Africa, have had programs that succeeded in improving literacy at significant scale, Sub-Saharan Africa remains the

region with the highest learning poverty, and population growth in the region has contributed to driving up the global learning poverty rate.

Box 2: What is behind the new (higher) estimates of pre-COVID global learning poverty?

There are three factors underlying the higher estimate of global learning poverty in 2019 (compared with 2015): changes driven by better measurement using new data sources, actual changes captured by updated learning or schooling deprivation measures, and demographic shifts.

- The first factor is changes due to better measurement using new data sources. Improvements in learning measurement occurred mainly in East Asia and the Pacific. When the learning poverty measure was first calculated, most countries in the region relied on learning estimates from their National Learning Assessments. Since then, SEAMEO and UNICEF have released the results for the first round of the Southeast Asia Primary Learning Metrics (SEA-PLM), which offers far greater comparability with the proficiency standards determined by the Global Proficiency Framework. This improvement in measurement led to higher rates of learning poverty in the East Asia and the Pacific region in 2019. While it is not possible to pinpoint exactly how learning poverty changed in the region, it is clear that the rate is higher than previously estimated. In addition, the 2019 estimates incorporate improved measures of enrollment in 41 countries where learning deprivation estimates have not changed. While the net effect of those revisions on the global and regional aggregates is negligible in most cases, in South Asia they result in an increase in the regional learning poverty estimate from 58 to 60 percent.

- The second factor is actual increases as captured by consistent movements in the components of the learning poverty indicator—that is, changes in either learning or schooling deprivation. For the most part, the lack of progress in learning poverty between 2015 and 2019 can be ascertained most clearly by observing changes captured by the temporally comparable learning assessments in Latin America and the Caribbean and Sub-Saharan Africa (LLECE and PASEC, respectively). Both assessment programs show virtually no improvement in the respective region during this period.

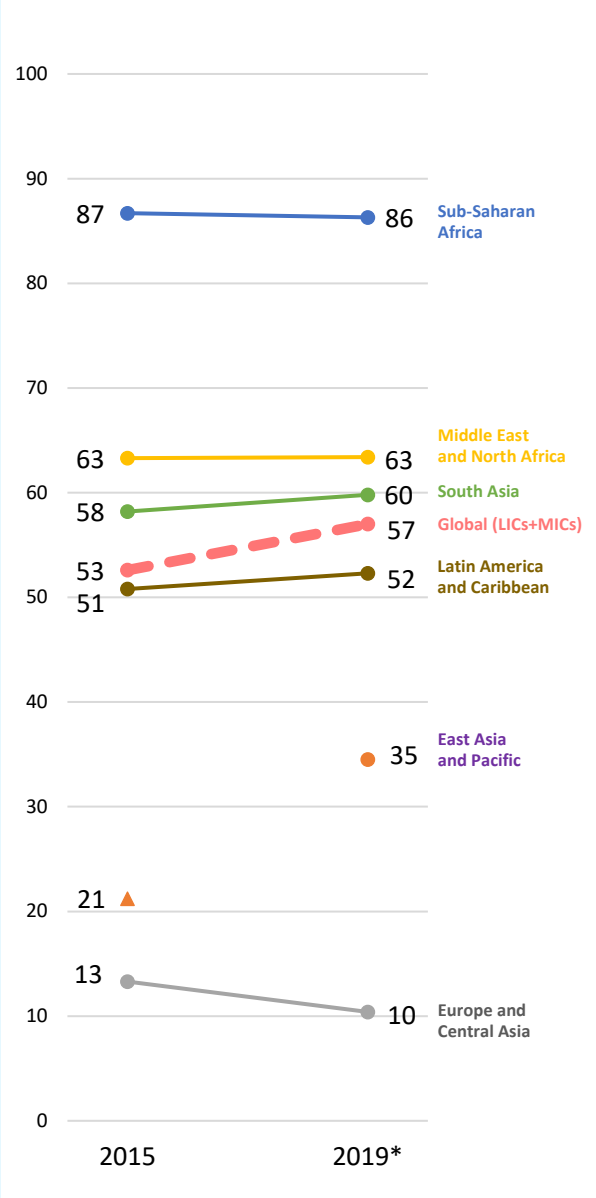
- The third factor contributing to the 2015-2019 changes is the demographic shifts in the relevant school-age populations. Most notably, the population weight of Sub-Saharan Africa, a region with extremely high learning poverty, increased over this period.

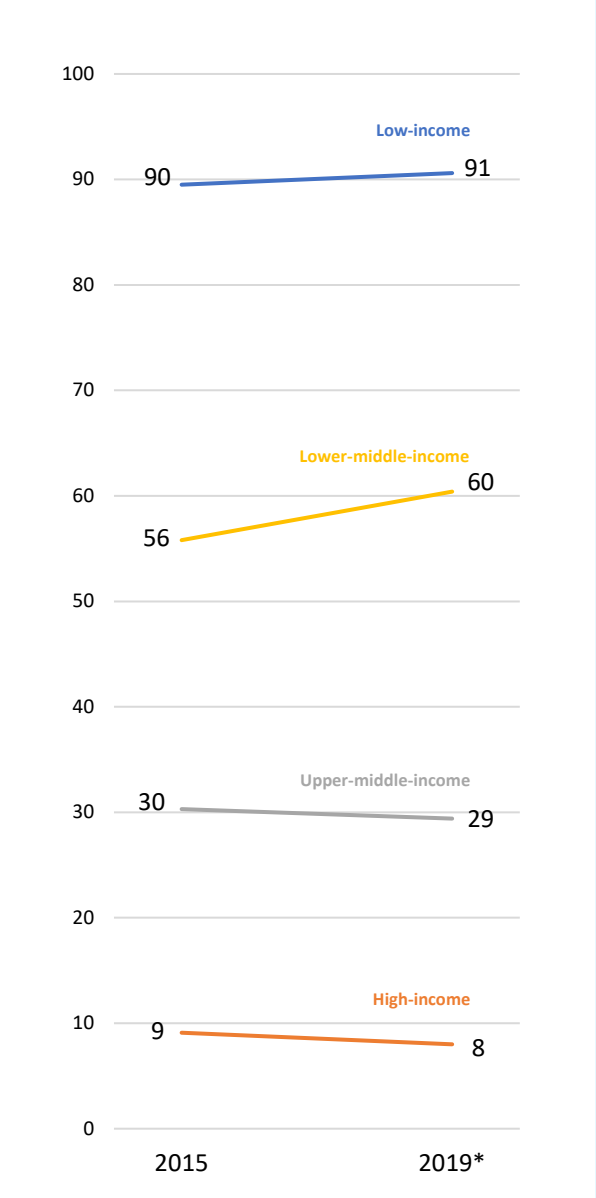
While better measurement is behind the higher estimates of global learning poverty, we can safely conclude that global progress against learning poverty stalled during the period just before the pandemic. A simple decomposition suggests that changes associated to better measurement (new sources of data) account for about 50 percent of the overall observed change in the global learning poverty rate between 2015 and 2019, from 53 to 57 percent, while actual changes and demographic shifts account for the remaining 50 percent. Thus, while better measurement is behind part of the higher global learning poverty rate, it is clear that there has not been global progress against learning poverty in the years before COVID-19 hit. In any case, we now also have a better measure of the deep pre-COVID learning crisis than we did before. With consistent effort to keep improving data availability and quality (as the Spotlight section of this report emphasizes), it will be possible to track learning poverty trends consistently in more and more countries.

Figure 3 Learning Poverty (Pre-Pandemic)

(a) By Region (Low- and Middle-Income countries only)

(b) By Income group (including High-Income countries)





Note: The global figure (a) is for low- and middle-income countries. Regional and global figures are all population-weighted averages. For the East Asia and Pacific region and Lower-middle-income countries, the 2015 and 2019 averages are not directly comparable, due to major changes in the country composition and assessments used for the two years. This report follows the World Bank regional classification; for details, please see this page.[23] For methodological details and all other simulation results, see Azevedo et al. 2022.

Results by income groups show extremely high and persistent learning poverty rates among low-income countries. The learning poverty estimates for 2019 show that 9 out of 10 children in low-income countries remained in learning poverty (Figure 3b). Results for lower-middle income countries also show a significant increase; however, this is mostly driven by the relatively high population weight of East Asia and the Pacific lower-middle-income countries, which saw improvements in learning data, as discussed in Box 2.

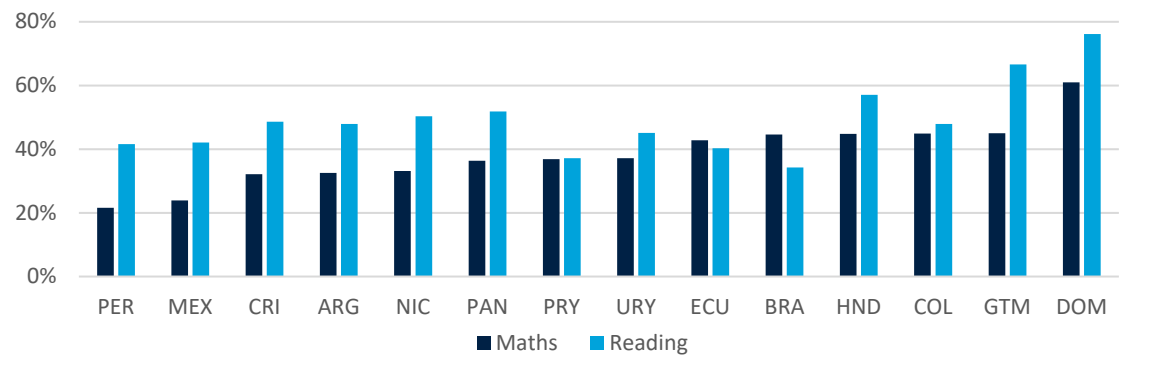
Beyond the high levels of learning poverty, the high levels of inequality in learning are a serious concern. High levels of learning inequality can reflect the inequality of opportunities in the access to good quality of education. High learning inequality has implications for the effectiveness of instruction in the classroom, as it impacts how teachers teach to students of varying learning levels in their classrooms. It requires teachers to further adapt instruction to meet students' learning levels to prevent low-performing students from falling further behind. There is emerging evidence that even before COVID, learning inequality was on the rise in regions such as Latin America and the Caribbean (Box 3).

The pre-COVID changes in learning poverty make it very clear that just returning to business as usual after school reopening cannot be the goal of education systems in low and middle-income countries. Even before the pandemic, education systems were in a deep crisis of low learning and substantial learning inequality. To safeguard the future of children and their societies as a whole, education systems must therefore not only recover lost learning, but also continue to accelerate learning to end the learning crisis.

Box 3. Learning inequality was on the rise even before COVID-19: Evidence from Latin America and the Caribbean and implications for instruction

Beyond high overall levels of learning poverty in Latin American and the Caribbean, learning inequality was increasing in the region prior to the pandemic. The Regional Comparative and Explanatory Study (ERCE) assessment results shown in Figure 4 below illustrate that learning inequality was on the rise in the region prior to the pandemic. Between 2013 and 2019, learning inequality in math and reading for students in grade 6 increased in all countries in the region. On average, learning inequality increased by 38 percent in math and 49 percent in reading. The countries with the largest increases in inequality during the period were the Dominican Republic, where learning inequality increased by 61 percent for math and 76 percent for reading, followed by Guatemala, with 45 percent for math and 67 percent for reading.

Figure 4. Increase in learning inequality between 2013 and 2019 for grade 6, by country and subject



Note: Changes in inequality are measured using changes in the Gini index of the distribution of test scores in each year.
Source: Own calculations based on the Global Learning Assessment Database (GLAD).

There is evidence that school closures during the COVID-19 crisis may have further increased learning inequality in Latin America and the Caribbean and beyond. Students in hard-to-reach areas, students with disabilities, and socio-economically disadvantaged students often had limited access to effective remote learning. For example, research indicates that socio-economically disadvantaged students were disproportionately affected by learning losses during the pandemic compared to their peers, as seen in the United States, the Netherlands, Pakistan, and Mexico, among other countries.

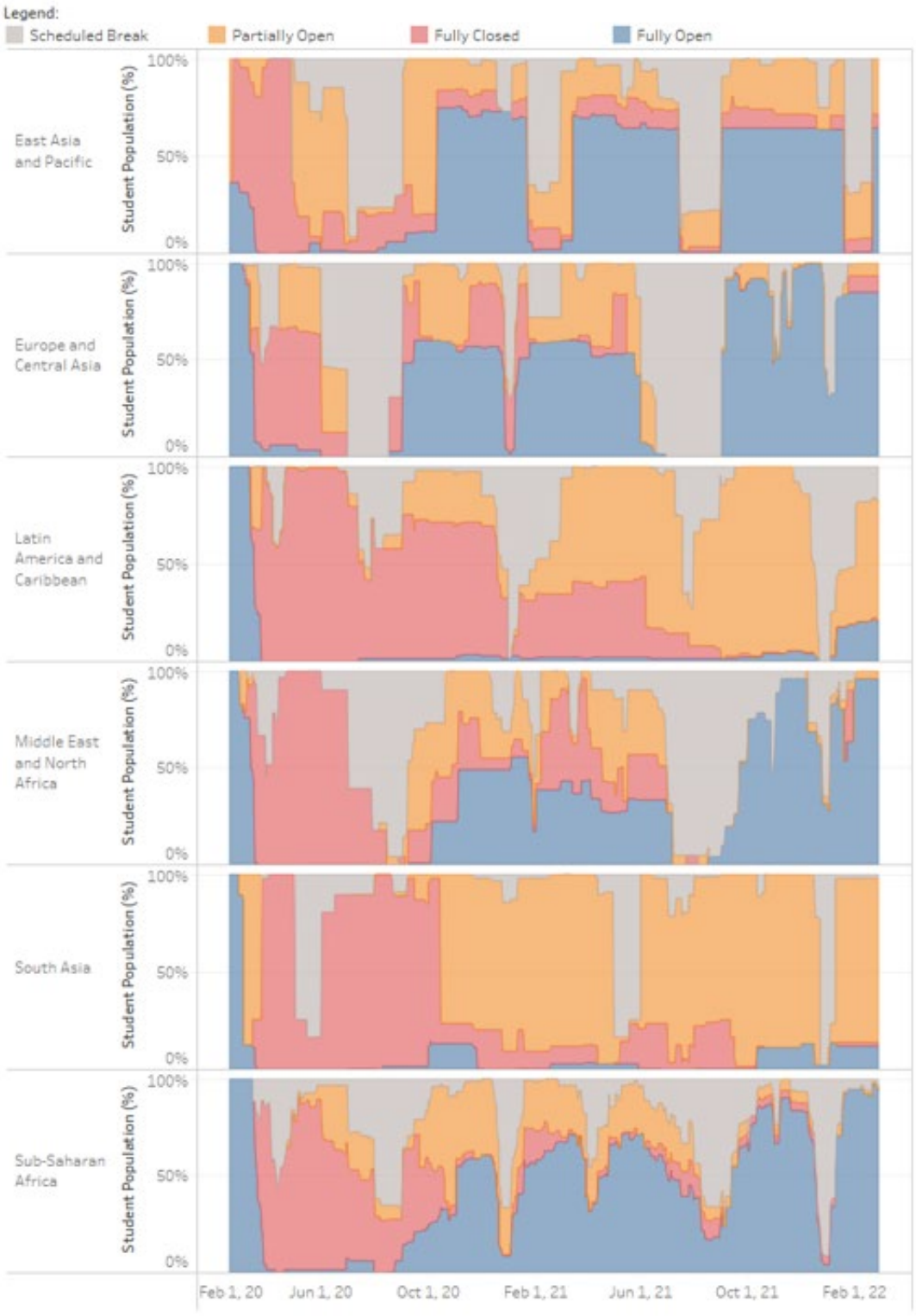
The increase in inequality of learning has implications for the effectiveness of instruction in the classroom. The increase exacerbates a pre-pandemic problem in education: how teachers instruct students of varying learning levels at the same time. Higher learning inequality among students means teachers must cater to a larger spread of learning levels within their classrooms. When teachers do not adjust to students' learning levels, their instruction becomes less effective and poor educational outcomes persist, as students are left behind.

Sources: Muralidharan, Singh, and Ganimian 2019; UNICEF, UNESCO, and World Bank 2021

The crisis within a crisis: COVID-19 has now made the challenge even greater

How much has COVID-19 worsened the learning poverty problem globally? The update of the learning poverty data can give us only a pre-COVID baseline because no learning data is yet available from internationally comparable learning assessments carried out since the start of the pandemic.[24] To allow targeting of resources and measurement of progress, improving the availability of learning data needs to be a priority going forward, as discussed below. For now, it is important to gauge the likely magnitude of the pandemic's impacts through simulations. The results from those simulations are deeply concerning.

Figure 5. Share of the student population by national school closure status according to UNESCO school monitoring calendar by region



Source: UNESCO School Closure Calendar as of June 2022.

The learning poverty simulations estimate how COVID-driven school closures have affected learning poverty and what the global learning poverty rate is in 2022. To this end, we build on the most recent pre-pandemic learning data, using evidence on the expected learning gain, data on the length of school closures, and the impacts of shocks on school dropouts, among other relevant data (see Annex 2 for a summary of the simulation conceptual model and Annex 3 for definitions and main assumptions and parameters used in the simulations).[25] The use of scenario-based simulations is not new, but it gained prominence during the pandemic as a tool to help governments assess the potential consequences of a shock of unprecedent magnitude. The main parameters of the simulation model are the following:

- **Learning gains** normally achieved during a regular school year before COVID. The higher the rates of expected learning gains observed when schools are open, the higher the learning losses when schools close. These expected learning gains vary across country income levels and remain constant across scenarios (see Annex 3).
- **Income shocks' impact on enrollments.** Simulations also partially capture the (much smaller) potential cumulative effects of household income shocks over the past two years on student school enrollment in primary education. This effect is negligible because evidence from both before and during COVID shows that at the primary-school level, income shocks typically have small effects on enrollment.[26] This component varies across countries based on country-specific enrollment-income elasticities and growth projections and remains constant across scenarios.
- **Observed duration of school closures**, which ranged from a few weeks in some countries to nearly two years in others. We incorporate the latest country-specific school closure data, which covers two full years of schooling during COVID, from February 2020 to February 2022. As Figure 5 shows, there are significant differences in the school-opening policies of governments around the world. This component varies across countries and remains constant across scenarios.
- **Partial closure estimates**, the share of students in a school system who are assumed to be affected by partial closures. Partial closures can be by geographic location or by certain grades or can cover all students if a hybrid model is adopted. Very few countries have been able to monitor the share of their system partially closed. This parameter varies across scenarios.
- **Effectiveness of mitigation strategies during school closures**, the country's ability to ensure some learning continuity while schools were closed; this parameter varies by country's income level and across scenarios (see below).

Evidence so far on the last of these factors indicates that mitigation strategies, and remote learning in particular, were typically not effective. The simulations therefore assume that during school closures, children in low- and middle-income countries learned on average only 5 to 20 percent of what they usually learn while schools were open. While some governments were able to respond swiftly to school closures by providing a variety of effective remote learning modalities, many were not. Most notably, 40 percent of countries in Sub-Saharan Africa did not provide any remote learning strategy despite full or partial school closures of about one year.[27] Even in countries that did provide remote learning solutions, provision of remote learning did not always result in take-up by students. Surveys of schools[28] and households reveal that many children, especially in low-income countries, were not able to engage in remote learning at all.[29] Some countries experienced a "remote learning paradox" where the chosen remote learning approach was not suitable to the needs of the majority of the students, contributing to uneven take-up. [30] According to a survey of education ministries by UNESCO, UNICEF, World Bank and OECD (2021), over a third of low- and lower-middle income countries that provided lessons through

radio or TV reported that less than half of primary school students were reached by radio or TV.[31] Even students who were able to receive some distance education often spent much less time learning than if they would have during in-person instruction, and they were exposed to pedagogies and curricula that had been hurriedly adapted to remote learning. Moreover, teachers often did not receive adequate training in remote instruction and digital skills.[32] In several countries in Sub-Saharan Africa, fewer than 1 in 5 primary school students maintained contact with their teacher during school closures.[33] Finally, as discussed below, data from actual measurement of learning losses support the assumption that mitigation was not effective: newly collected data on learning levels emerging from some low- and middle-income countries shows major learning losses across a range of contexts.[34]

For purposes of illustration, we focus our discussion based on outcomes from the intermediate scenario. The results in terms of global and regional learning poverty levels do not vary dramatically across the scenarios (Annex 4). Our preference for the intermediate scenario in the narrative builds on our understanding of the evidence to date, which suggests that: the mitigation strategies put in place have largely been ineffective (as discussed above); and many countries with educational systems that reported partial closures (on average for the last two years) were largely fully closed. The parameter choices under the intermediate scenario reflect that evidence. As more and better data becomes available, we will be able to continuously improve these estimates.

According to the latest simulations,[35] the global learning poverty rate among low and middle-income countries is expected to have risen to 70 percent, based on data up to February 2022. This is a massive increase from the 57 percent rate of 2019. That is, as a result of the pandemic, the learning poverty rate is likely 13 percentage points higher, and an additional 1 out of every 8 children in low- and middle-income countries is now in learning poverty. This means that all of the gains in learning poverty that low- and middle-income countries recorded since 2000 have been lost.[36] Moreover, the damage may be even larger than these simulated figures suggest. In the regions and countries with very high pre-pandemic learning poverty, the pandemic-related shocks could have pushed children who were already below the minimum proficiency level in reading further behind.

South Asia and Latin America and the Caribbean are likely to have suffered the largest increases in learning poverty.[37] Both regions have seen very long school closures, of at least 273 and 225 days on average, respectively. These two regions also had the largest share of students affected by partial school closures as of early 2022 (Figure 5). As a result, children have missed out on a substantial amount of in-person learning. Learning poverty is estimated to have risen from 52 to 79 percent in Latin America and the Caribbean, and from 60 to 78 percent in South Asia (Figure 6a). That is, in both regions the share of children in learning poverty may have increased by around twenty percentage points or more in just the past two years. This means that after nearly two years without in-person schooling, children who, for instance, are returning to Grade 4 would have to rely mostly on whatever learning foundations they had acquired by Grade 2. Beyond basic education, learning-adjusted years of schooling—meaning the number of years of schooling that, adjusted for quality, a child born today can expect to complete—are expected to have fallen from 7.8 to 6.0 in LAC and from 6.5 to 4.9 in South Asia.

In Sub-Saharan Africa, the region that already suffered from the highest levels of pre-pandemic learning poverty, the biggest impact will be to cause children who are already learning-poor to fall further behind.[38] In many Sub-Saharan African countries, school closures lasted only a few months, and the resulting increase in the learning poverty rate is likely to be smaller (from 86 to 89 percent; see

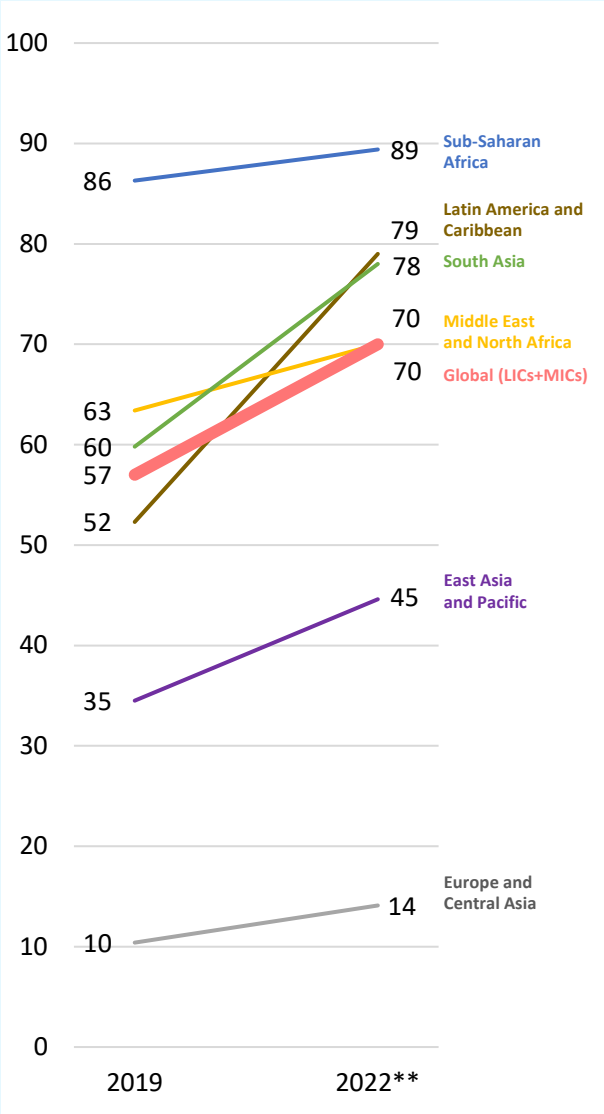
Figure 6a). Yet this increase will be accompanied by a further deepening of learning poverty for children below the minimum reading proficiency threshold. Children with the weakest foundational literacy before school closures are most likely to have suffered learning loss, especially if their families are not literate.[39] These losses in the region come on top of a severe pre-COVID learning crisis. Before the pandemic, the average child in the region could expect to complete only 5 learning-adjusted years of schooling by age 18. With learning outcomes already so poor and many children, especially girls, already buffeted by conflict and poverty, the projected loss of 0.6 years will be another blow to the region's prospects to build human capital if learning is not recovered and accelerated quickly.

In low-income countries, learning poverty is likely to have remained extremely high, while in all other country-income groups, especially lower-middle-income countries, it likely deteriorated. The simulation results indicate that in 2022, 9 out of 10 primary-age children in low-income countries remain in learning poverty. In lower-middle-income countries, in contrast, learning poverty is likely to have increased sharply, by an estimated 16 percentage points (Figure 6b). While high-income countries also saw a significant relative increase, given their low baselines, they have stronger capacity and readiness to respond to the shock. The challenge is especially great in low-income countries, given that even before COVID, education systems failed to achieve even minimal levels of reading proficiency.

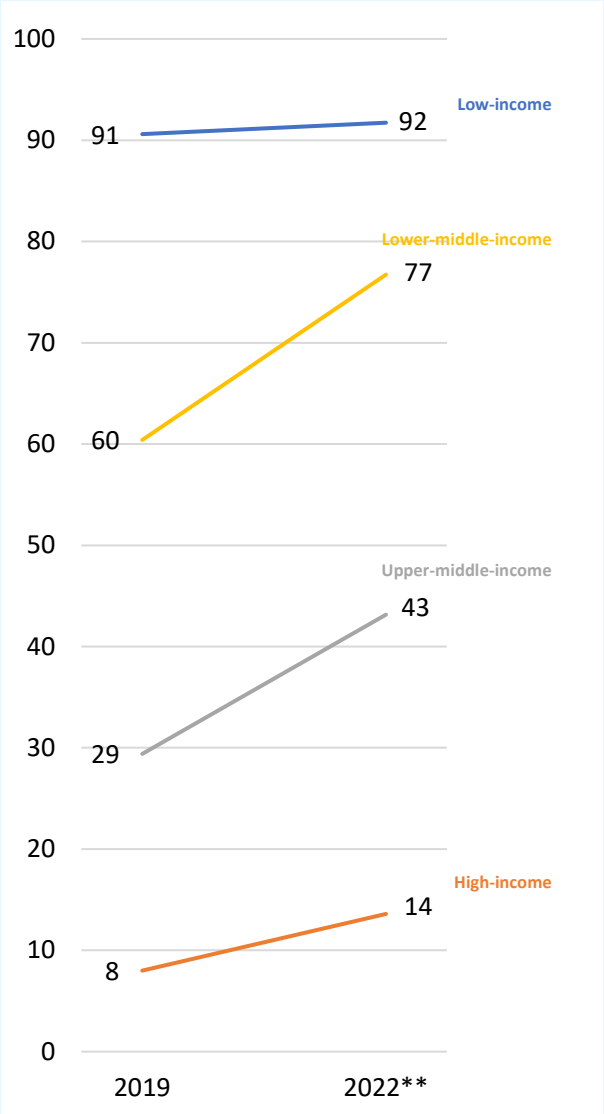
Actual learning data now emerging from numerous countries supports the conclusion that there have been very large learning losses. Systematic measurement of learning losses typically could not happen while schools remained closed, but new learning results have appeared from a growing number of systems as schools reopened. Early findings from high-income countries showed that most had suffered significant learning losses, even though they entered the crisis better equipped for remote learning.[40] More recent results from both lower- and upper-middle-income countries find even larger losses,[41] and in some countries, each month of school closures has caused the loss of a month's worth of typical pre-crisis learning or even more.[42] In São Paulo (Brazil), which was one of the first large jurisdictions to rigorously measure learning losses, the declines were so large that students were back at the learning levels of 10 years earlier in reading and 14 years earlier in math. [43] In India, between 2017 and 2021, average language scores for 5th-graders on the national assessment declined from 319 to 309, and average math scores from 310 to 284. Such declines in these and other middle-income countries are consistent with the large increases in learning poverty derived from the simulations. The results from low-income countries also corroborate the simulations. Again, consistent with the simulation results, given that the pre-COVID learning poverty rates were already so high, a number of low-income countries that have measured learning loss do not show significant increases in learning poverty.[44]

Figure 6. Learning Poverty (Simulations)

(a) By Regions (Low- and Middle-Income countries only)



(b) By Income Groups (including High-Income countries)



Note: Numbers for 2022 are based on simulations. The global figure is for all low- and middle-income countries. Regional and global figures are all population-weighted averages. This report follows the World Bank regional classification; for details, please see this page. For methodological details and all other simulation results, see Azevedo et al. 2022.

The economic cost of the global learning crisis continues to grow while growing faster among low- and middle-income countries. Based on data through February 2022, and the simulations assumptions presented in Annex 2 and 3, this generation of students worldwide now risks losing $21 trillion in lifetime earnings in present value due to school closures,[45] or the equivalent of 17 percent of today's

global GDP.[46] This cost far exceeds the $10 trillion estimated in 2020, and even the $17 trillion estimated in 2021. Students from low- and middle-income countries now risk losing $11 trillion in lifetime earnings. Urgent action is needed to head off these huge long-term costs.[47] As discussed next, these negative impacts that could accumulate over the coming years can be reversed with swift and decisive policy action.

Evidence from past disasters reinforces the conclusion from the simulations that the long-term impacts on human capital and productivity could be large. Disrupted schooling may not be made up later, and the trauma of shocks can therefore produce differences that are observable many years later.[48] For example, in the United States, young people who were aged 14–17 during the 1916 polio pandemic in the United States ended up with lower educational attainment than their slightly older peers, whose schooling had not been disrupted. [49] This can have major economic impacts: in Zimbabwe, the 1982–84 drought ultimately led to 0.4 grade less of completed schooling for the affected generation of children, which then reduced their lifetime earnings by 14 percent.[50] During the Ebola outbreak, teenage pregnancies increased in some communities by as much as 65 percent,[51] and some girls never returned to the classroom after schools reopened, due to increased rates of sexual abuse and exploitation, as well as teenage pregnancies.[52]

A swift response is essential: not only was learning poverty already high, but the recent learning losses could be compounded over time, making the cost of inaction especially high. Education systems were already unable to ensure learning, and now students are returning to school with even less of the foundations needed to benefit from instruction. Evidence from past disruptions to education shows that without recovery measures, learning losses may grow even more after children's return to school, if the curriculum and teaching do not adjust to meet students' learning needs. 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.[53] In other words, the extent of learning losses was far greater than would be expected based simply on the length of the school closures, likely because the affected children learned less in each year after reenrolling in school. It is possible that teachers weren't equipped to promote learning recovery or that they felt compelled to stick to the original curriculum, and so children fell further behind. As students fall further behind the curriculum, the risk grows that many will become disengaged and ultimately drop out of school. Even if they remain in school, this dynamic could lead to a much greater range of learning levels in the classroom, which makes it even more challenging for teachers to meet the needs of their students. Actions that countries take in the short term—even over just the next year—could therefore make a big difference for the longer-term trajectory of a generation at risk.

Countries have set very ambitious targets for reducing learning poverty

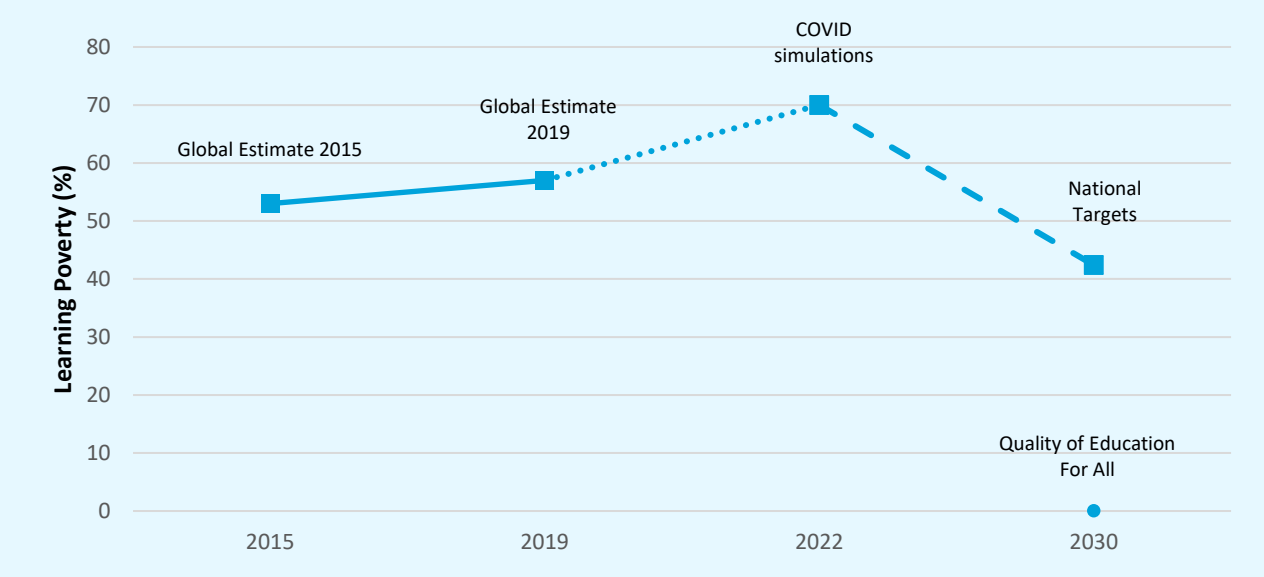
In the wake of these unprecedented shocks to education, countries are nonetheless showing ambition in setting national education targets to be achieved by 2030 under the SDGs. Under SDG 4, countries have committed to targets for progress toward the global ambition of ensuring that all children learn. In 2015, the international community committed to define intermediate benchmarks on selected SDG 4 indicators. The process, which began in 2017, resulted in the selection of seven benchmark indicators in 2019, including the minimum proficiency level by the end of primary and the percentage of children who reach the end of primary, two indicators that are aligned to the learning poverty indicator. By 2022, 89 low- and middle-income countries and 139 countries in total have made progress on their national

analysis and consultations and have shared with UNESCO their commitments on learning or out-of-school targets for 2030.[54]

> With the pandemic impacts, the world is now further away from the SDG target of quality basic education for all, in which by the end of primary, all children would be attaining the foundational skills they need for life. Accelerated efforts are needed to reverse the trend and move faster towards eliminating Learning Poverty.

When we add up those national targets for low- and middle-income countries, we find that their collective goal is aligned with halving learning poverty by 2030. The aggregate goal implies reducing learning poverty to 42 percent by 2030, which means nearly halving it from the likely 2022 level of 70 percent.[55] This reflects an aspiration set by countries themselves, and to make serious progress toward it, governments, educators, communities, families, civil society, and development partners must collectively commit to learning recovery and acceleration, starting now.

Figure 7. Learning Poverty – history, simulation results, and targets



Source: Authors' calculation. National targets, refers to the population weighted aggregation of national targets reported to UIS; and, Quality of Education, refers to "Quality education for all" as stated in the SDG 4.

Given historical trends, this collective target—resulting from the aggregation of national targets—is extremely ambitious, especially after the pandemic. Just before the pandemic, the World Bank set for itself the ambition to support countries in at least halving the global learning poverty rate by 2030, from 53 percent to 26 percent. Calculations showed this would have required nearly tripling the 2000-2015 global rate of progress. Now, it is clear the challenge is even greater—both because progress had

already stalled in the 2015-2019 period, and because with the COVID pandemic learning poverty is expected to have shot upward by 2022 (Figure 6a). If global learning poverty is now 70 percent as suggested by the latest global simulations, the world would need to triple the rate of progress achieved between 2000 and 2015[56] to reduce learning poverty even to around 55 percent by 2030. This would be an incredible achievement, given the new starting point, yet it would still fall short of the collective global goal of 42 percent, let alone the SDG 4 target of ensuring that all children can read by 2030 (Figure 7). In fact, it would not quite match the 53 percent learning poverty rate that the world had already achieved in 2015.

These findings call for greater commitment and greater effort, not resignation. The high levels of learning poverty violate children's right to education. After all the hard work by so many families and educators to provide education for all, it is unacceptable that only a quarter of children in low- and middle-income countries are now enrolled in school and reading with comprehension at a minimally acceptable level. The high trust that families have placed in education by ensuring 90 percent enrollment at primary level is not being rewarded with adequate learning outcomes, and this could undermine future trust and investments in education. Saving the futures of children and youth—and of their societies—demands healing the wounds inflicted by the pandemic, starting with ensuring that education systems can support children to acquire foundational skills. And that is not enough: collectively we need to build on that short-term learning recovery to take on the learning crisis that predated COVID-19.

The high trust that families have placed in education by ensuring 90 percent enrollment at primary level is not being rewarded with adequate learning outcomes, and this could undermine future trust and investments in education.

Part II: Ending learning poverty: commitment, recovery, and acceleration, guided by better data

"...In the streets, there are no skills, no talent and no compassion; you had to fight for everything—and most importantly, there are no books..."

Ayomide Olawale

19-year-old student, Nigeria

"...Schools haven't cut back much on their curricular expectations and "ineffective" learning becomes detrimental for students in the long run...It's a struggle to tackle the never-ending list of assignments, especially with mental health issues in teens being at an all-time high."

Shirin Rajesh

16-year-old student, India

"...everyone learns at different paces, and teachers are having trouble taking all this into consideration when planning classes..."

Najya Gause

16-year-old student, The Netherlands

- **Despite the learning crisis, some education systems showed before COVID that it is possible to accelerate learning dramatically and at scale.**
- **Since the pandemic hit, many education systems have taken concerted actions to recover and accelerate learning.**
- **Learning recovery and acceleration must start with sustained political commitment at the national level.**
- **The RAPID framework for learning recovery and acceleration offers a menu of policies for recovery and acceleration, many of which have already been implemented at the national level.**
- **Decisive action can not only recover learning lost from the pandemic, but also address the deeper underlying learning crisis and end learning poverty.**

Part I has shown that the deep pre-COVID learning crisis has been made even worse by the pandemic. More than half of all children were already suffering from learning poverty just before the pandemic, and progress in reducing learning poverty had already stalled. Now, after the unprecedented disruptions to schooling, the global learning poverty rate is estimated at 70 percent. And in countries where learning poverty was extremely high already, COVID has blocked progress: both in Sub-Saharan Africa as a region and among low-income countries globally, learning poverty has now remained stagnant at nearly 90

percent for the last 7 years. This lack of foundational skills threatens to undermine countries' ability to meet their aspirations.

Yet despite these global trends, some education systems showed before COVID that it is possible to accelerate learning dramatically and at scale. For example, the municipality of Sobral in the Brazilian state of Ceará was ranked 1,366 in the national index that measures quality of education in Brazil in 2005; twelve years later, it had leapt to the top spot at the national level. Sobral achieved this dramatic learning acceleration by putting the success of every student at the top of the political agenda, using student assessments effectively to track progress and inform classroom instruction, adopting a focused curriculum that prioritized foundational skills (especially reading), and by preparing and supporting teachers to provide high-quality instruction. Similarly, the Tusome program in Kenya used practical teacher training, supported by classroom assessment, focused curriculum, structured teachers' guides, and aligned learning materials, to raise the number of children reaching national benchmarks in English and Kiswahili from roughly 35 percent to 65 percent between 2015 and 2019.[57]

And since the pandemic hit, many education systems have taken concerted action to recover and accelerate learning. The state of Gujarat, India, for example, realigned the entire curriculum for the first quarter of the academic year to focus on foundational learning. Results from the Periodic Assessment Tests (PAT), a weekly formative assessment that began pre-pandemic, were used to personalize remote education to the level of each student during school closures. In addition, Gujarat has used a mix of low- and high-tech interventions to deliver personalized, adaptive education to each student. In Ghana, the Ministry of Education launched a back-to-school campaign that rolled out rapid learning assessments, targeted instruction, and remedial education to students in over 10,000 schools across the country. Upon school re-openings in January 2021, the Ghana Education Service supported teachers in all schools to dedicate the first eight to twelve weeks of school to assess all learners, review concepts taught in previous years, and provide targeted, remedial instruction. While evidence on the effectiveness of programs like these is still emerging, these interventions are consistent with what pre-COVID evidence showed is effective to accelerate learning.

Drawing on recent experiences with accelerating learning at scale, UNICEF, UNESCO, and the World Bank recently proposed the RAPID strategy for learning recovery and acceleration.[58] The pandemic has shown that the policies that lead to learning in the recovery and acceleration phase post-COVID are for the most part the same policies that lead to general learning outcomes improvement. The application of the RAPID strategy over time will not only recover learning in the post-COVID period but can also address the underlying pre-pandemic learning crisis. RAPID is an acronym capturing the five policy domains of the framework (Box 4).

Together, these five policy domains work to focus on ensuring that all children are in school and learning through effective methods that prioritize foundational skills and student well-being. For learning to improve sustainably and at scale, policies under these domains will need to ensure that school leaders and teachers in every classroom improve their everyday practices. Given the scale of the challenges and the competition for funding, countries will need to maximize their efforts to improve the quality and effectiveness of instruction and increase instructional time, while also making sure that all children are in the classroom and learn.

Box 4: How the RAPID framework aims to help recover and accelerate learning

The domains of the RAPID framework aim to equip schools to get learning happening in the short term in challenging circumstances. For example, it aims to answer questions like the following:

- **Reach every child and keep them in school:** How can we ensure that children return and remain motivated in school after having long been disengaged from school and having lost critical learning?
- **Assess learning levels regularly:** How can teachers know what a child's level of learning is after schools have reopened, so they can target the right support to her and help her catch up on the learning she has missed out on?
- **Prioritize teaching the fundamentals:** How can a 4th-grade child read and understand the science text from the curriculum without even the basic reading skills he was meant to acquire in 2nd and 3rd grade while schools were closed?
- **Increase the efficiency of instruction, including through catch-up learning:** How can a teacher effectively teach 4th-grade reading to a classroom of 30 or 40 children whose current reading comprehension is at a 1st- or 2nd- grade level at best?
- **Develop psychosocial health and well-being:** How can we support children to feel welcome back at school and to manage the anxiety stemming from the pandemic, school reengagement, and catch-up learning?

These interventions should start immediately, and they can begin to deliver results in the short term. The RAPID framework highlights elements that do not require a thorough system strengthening to begin improving outcomes in the short term, and many involve deploying current resources more efficiently. For example, the RAPID interventions do not require highly qualified teachers or highly professional school leadership, but encourages provision of tools to support the current educators more effectively. Those system-strengthening elements are crucial to build over the longer term, of course, and structural reforms will be needed more generally to sustain the short-term learning gains. But decisive action should not wait until countries have strong systems, because the cost of short-term inaction would be too high.

Before discussing and illustrating the five policy domains of the RAPID framework in more detail, we first outline the preconditions needed to design and implement effective policies in these five areas sustainably and at scale.

The first step toward learning recovery and acceleration: Political commitment

Recovery and acceleration must start with political commitment at the national level. Political leaders need to prioritize learning recovery and acceleration in national strategies to build back better from the pandemic by committing the leadership and resources necessary to tackle the amplified learning crisis. This requires first acknowledging the extent of the learning crisis—a crucial step, given that in a recent survey, 80 percent of government officials overestimated literacy proficiency in their countries[59]—and the extent to which this crisis can damage the growth and development prospects of their countries. Political commitment must also center on raising the achievement levels of the lowest achievers and the most disadvantaged. To inspire and guide progress, leaders should lay out a vision of education that prepares all children and youth for a lifelong learning journey, and active participation in social life and productive work—and they should highlight that this starts with ensuring that, at a minimum, all children learn to read. Committed leaders can help their societies understand that foundational learning is the critical building block to achieving all the other education priorities and other important national goals, and they can rally key stakeholders around the need to prioritize it. In the current context, this awareness-raising is especially important in societies that have given less attention to learning losses and the impacts of school closures and to the pre-COVID learning crisis. In Latin America, despite the nearly two years of school closures, the media gave far less attention to closures and learning losses (relative to other topics) than did media in other regions (Figure 8). But in general, there is a lack of understanding of the magnitude education challenge. In a recent survey to policymakers in 35 low- and middle-income countries,[60] when asked point-blank "is there a learning crisis in your country", 81% of officials said yes. But when asked about the share of 10-year-olds who could read a simple text, they grossly overestimated the children's skills. On average, they said that 47% of children could read, while the real number for those country was on average 25%. They recognized that there was a problem, but not the magnitude of the problem.

Wider societal mobilization for education is needed to support high-level commitment and create national learning coalitions. Without broader societal support, strong commitment from the government will not be enough, both immediately and especially over the longer term to sustain the commitment. This starts with genuine policy and social dialogue with all stakeholders. Recovering the learning losses of children and youth requires the efforts of educators, providers, suppliers of education inputs, families, and administrators throughout the system. If they are not aware of the scale of the losses and its consequences, and they do not share the commitment to recovering those losses and accelerating progress, education systems are likely simply to return to business as usual, with lifelong negative consequences for today's students. Recovery and acceleration will need to be cross-sectoral, meaning that health and other sectors in charge of social policy, among others, need to commit too. Other key societal groups—like the business community and civil society organizations—also need to be part of national coalitions, to build momentum around reducing learning poverty and make it more sustainable. National commitment to education requires that all actors align in the design and implementation of reforms with the sole objective of improving children's and youth education and wellbeing. Politics or economic interests must not contaminate the decision-making process in education. It is not the positions or interests of political party or unions, nor the interest of suppliers, vendors or providers, or any other education stakeholders, that should matter, but exclusively the interests of students.

A key sign of commitment is the regular measurement of learning to diagnose learning gaps and target action. Different types of assessments of student learning will be necessary to guide the response. First, countries need to measure learning at the system level, so they can understand the current levels of learning and identify which groups have lost learning the most. Second, teachers need to be equipped with easy-to-use tools for measuring foundational learning in the classroom; this will allow them to target instruction to the post-pandemic level of learning of each student.

Another sign of commitment—and a tool for sustaining momentum—is setting clear and widely understood targets to focus efforts. While many countries have reported targets or benchmarks for progress for the SDG 4 monitoring process (as discussed in Part 1), these targets have often not been shared and discussed widely by different societal groups, which could limit their effectiveness in spurring change. The post-COVID recovery period offers an opportunity to broaden social buy-in. Once a country has a baseline measurement of student learning after schools reopen, it can use this baseline to set targets for recovery. Targets should cover both enrollment and learning, and they should be straightforward enough that they can be used to rally support from teachers and the broader coalition of societal groups supporting learning. In addition to overall targets, it is important to set targets specifically for the groups of children who have been left furthest behind, for example because of their gender or socioeconomic status.

Finally, commitment requires providing adequate financing for education to meet the set targets. In their responses to COVID-19, countries have allocated less than 3 percent of their fiscal stimulus packages on education. In low- and middle-income countries, the share has been even lower, averaging just 1 percent.[61] Overall, education budgets declined initially after the onset of the COVID-19 pandemic in 65 percent of low- and lower-middle-income countries.[62] While the emergency health response took priority at the outset of the pandemic, there is an urgent need now to address the wider fallout of the pandemic and make up for the neglect of education. Providing enough financing today—and using it more efficiently, on effective interventions and students with the greatest needs—will lead to long-term savings on dealing with the costs of dropout, low skills productivity, and widening income inequality.

Global coalitions for education should provide support for countries that show a strong political commitment to learning recovery and acceleration. After the unprecedented shock that COVID-19 has brought to education systems, countries need more support than usual from the international community. In part, this support should come in the form of tools and capacity-building support for learning recovery that draws on evidence from around the world. Evidence on effective recovery strategies in the wake of COVID is only now accumulating and getting it to stakeholders quickly is crucial. The international community should also provide strategic financing for education—not as a substitute for what countries should provide, but to fund innovations and system strengthening that makes existing domestic spending more effective and efficient. One example is supporting efforts to close the existing gaps in learning assessments, data, and evidence needed to guide effective education spending. Another is financing practical teacher guides, training, and learning materials.

Figure 8. Media attention to selected education and health topics during the pandemic, for selected countries and regions

Note: To examine attention to issues of learning loss in school closure in Latin America (Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Guatemala, Honduras, Mexico, Panama, and Uruguay) and elsewhere, global news mentions of related terms were analyzed using the Media Cloud tool. This data visualization employs Media Cloud to analyze the daily frequency of the appearance of individual terms in national newspapers in 18 countries over the period January 2020 to December 2021. Media Cloud gathers the full universe of stories published in newspapers available online from those countries. We evaluate the fraction of those stories which include specific terms in English or their Spanish or Portuguese equivalents: "learning loss," "remote learning," "school closure," "unemployment," and "vaccine." We interpret the share of total newspaper mentions of a term as an indication of the intensity of public interest in the topic captured by the term.
Source: Azevedo, Demombynes, and Wong 2022, using Media Cloud from January 2020 to December 2021.

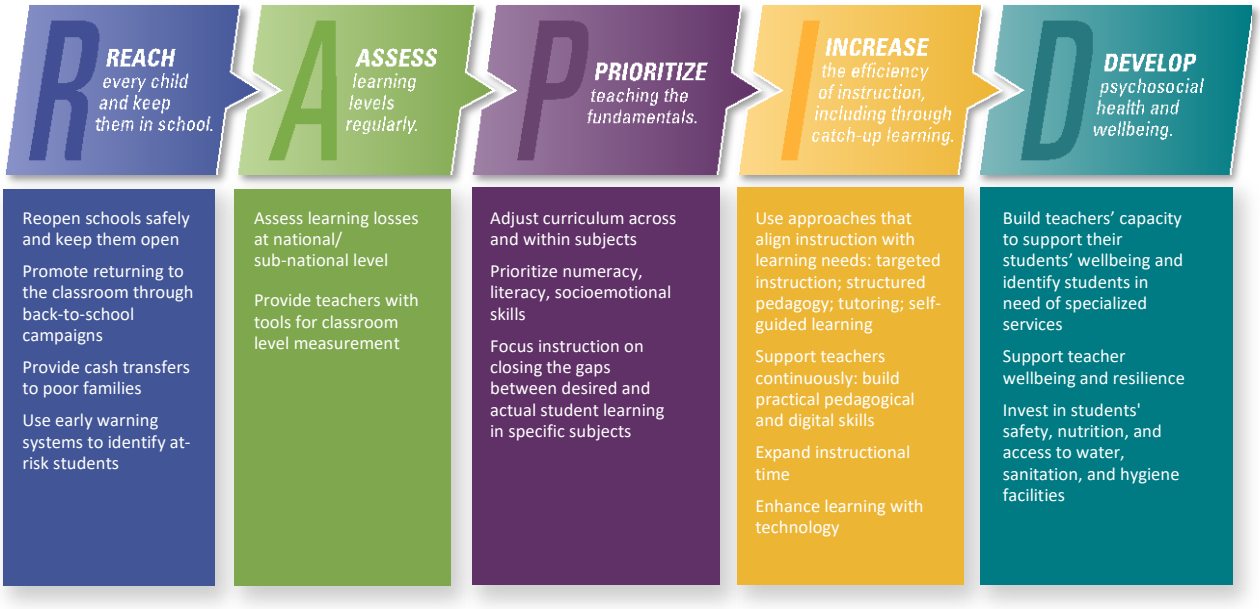
The short-term agenda: Recovering and accelerating learning with the RAPID framework

Building on political commitment, countries can adapt the RAPID framework[63] for learning recovery and acceleration to their own national contexts to recover and make rapid progress, starting immediately. The framework summarizes a menu of policies, many of which have already been implemented at the national level in different countries and address the multiple challenges of the recovery and acceleration process.

What to do in the next few years to move the needle on learning?

Short-term actions are essential, and so is political commitment for their implementation. Countries can adapt elements of the RAPID framework for learning recovery and acceleration to their own national contexts to recover and make rapid progress, starting immediately. **The framework** summarizes a menu of policies, many of which have already been implemented at the national level in different countries; this support must now reach all children in all countries.

Figure 9 RAPID Framework for learning recovery and acceleration



Source: World Bank, the Bill & Melinda Gates Foundation, FCDO, UNESCO, UNICEF, and USAID 2022.

The five domains of RAPID are focused on ensuring that all children and youth are in school and building the foundational skills that they will need for all further success in school and beyond:

Reach every child and keep them in school. The most immediate policy action is to keep schools open and get children back in school. Because they were the least well served by remote learning, students from marginalized backgrounds are most at risk now of failing to return or subsequently dropping out. As schools reopen, it is crucial to monitor children's enrollment, attendance, and grade progression; understand why some children have not returned to school; and support them to return and to stay in school. Back-to-school campaigns, family outreach and early warning systems can help keep children in school, as can removing school fees, introducing cash transfers and school feeding programs. In Ghana, for example, a successful back-to-school campaign involving taskforces made up of government, CSOs, and media, carried out district-level activities through radio, TV, and community events, achieving nearly 100 percent re-enrollment at the end of 2021.[64] In Lebanon, $23 million in cash support will go to youth aged 13-18 from extremely poor families at risk of dropping out of school as a result of pandemic-related shocks.[65]

Assess learning levels regularly. Assessments are useful for two different purposes in the learning recovery and acceleration process. First, it is essential to provide teachers with classroom assessments of children's current learning levels will help guide their learning recovery journey. This will allow teachers to target instruction to each child's level. Second, measures of learning at the system level can help make informed decisions on where and how to mobilize resources to reverse learning poverty and drop-out among those most vulnerable. For example, in November 2021, the State of Guanajuato in Mexico administered a large-scale assessment to more than 600,000 students. November 2021 assessments are being analyzed in reference to pre-pandemic results to measure learning losses during the period of school closures, assess how these learning losses differ for different demographic groups, and identify specific content areas where students require support.[66] In São Paulo, Brazil, the state created guidelines for classroom-level diagnostics and prioritized supporting teachers to deploy formative and summative assessment tools to support learning recovery.

Prioritize teaching the fundamentals. Given the staggering loss in instructional time, learning recovery efforts should focus on essential missed content and prioritize the most foundational skills and knowledge, particularly literacy and numeracy, that students need for learning within and across subjects and for more advanced learning in the future. Providing teachers with prioritization guidance is important, given the very dense and overambitious curricula that exist in many countries and that teachers, particularly in the public sector, are instructed to follow. It is essential to allow teachers to prioritize flexibly in the short term the core essential skills and knowledge children need in their respective grades. It also requires helping teachers to improve their quality of teaching of foundational skills—including by using structured pedagogy approaches as needed, proven across many contexts, that include practical teacher guides connected to well-designed student textbooks. And children should be taught in a language that they use and understand, which is often not the case now. In the Philippines, the Department of Education published the Basic Education Learning Continuity Plan, which streamlined the K-12 curriculum into essential learning competencies for the 2020-21 school year.[67] In Indonesia, teachers are provided diagnostic assessment tools and guidelines to interpret student results in local languages for core subjects.[68]

Increase the efficiency of instruction, including through catch-up learning. To recover missed learning, school systems need to adopt effective teaching practices that support teachers in their immediate classroom challenges, as the teachers are receiving children with larger and more varied learning deficits. These practices include learner-focused recovery strategies. These include structured pedagogy programs, instruction targeted to students' learning levels, individualized self-learning programs, tutoring, and catch-up programs for dropouts. In tandem with these strategies, extending instructional time by modifying the academic year or offering summer school can further accelerate learning recovery. Improving the quality of teaching and targeting it to the level of the student is the single most crucial intervention for reversing the decline in learning progress (see Box 5). In Nepal, the government is gradually adopting a Teaching at the Right Level (TaRL) intervention to fast-track learning recovery. The intervention design includes TaRL implementation through community schoolteachers and trained NGO facilitators in 20 schools, providing targeted instruction for 2-3 hours each day for ten weeks. In Zambia, a catch-up program combined the principle of ability grouping with a condensed curriculum, and trained teachers on implementing remedial activities for those most behind in learning.[69]

Develop psychosocial health and well-being. The pandemic has harmed the mental health and psycho-social wellbeing of both learners and teachers, and it has compounded risks for those who are already marginalized—including girls and women, children with disabilities, children affected by conflict or displacement, and others. Meeting the mental health and psychosocial needs of children, youth, and their teachers is not only important in itself, but also crucial for ensuring learning recovery. Critical to learning and wellbeing is ensuring that schools are safe and that children are healthy and protected from violence and can access basic services—notably, nutrition, counselling, water, sanitation, and hygiene services, which are especially critical to ensure that girls re-enroll and remain in school. Liberia, for example, developed 30-minute radio lessons on early grade literacy that wove in opportunities for students to reflect on their feelings and find productive ways to deal with them.[70] North Macedonia incorporated stress-reducing exercises for teachers in their educational television programming.[71]

Box 5. Supporting teachers and improving learning

The pandemic has resulted in classrooms that are more diverse in terms of student skills and attainment than before. Past and emerging evidence shows us that school closures have resulted in classrooms that are more diverse in student attainment than before (for example, analysis emerging after the 2005 earthquake from Pakistan, in Andrabi, Daniels and Das 2020 shows widening learning inequalities within affected areas), meaning teachers will need skills for teaching students with differing learning needs.

Teachers need the skills to adjust learning to the needs of students now more than ever, and policies that train and support teachers remain at the heart of learning and learning recovery. Professional development and continuous support that aligns with evidence on what works to change instructional practices and accelerate learning will be needed to support teachers and improve learning. Complementary actions, such as improvements in teaching and learning materials, and supportive management systems and school leaders, also play a part in enabling effective teaching.

Examples of programs that support teaching and learning:

- **Structured pedagogy in Kenya:** Tusome is a flagship partnership between USAID and the Ministry of Education (MOE). Tusome focuses on four key interventions: enhancing classroom instruction, improving access to learning materials, expanding instructional support and supervision, and collaborating with key system-level literacy actors. Students made substantial gains in English (proportion of non-readers fell from 38 to 12%) and Kiswahili (proportion of non-readers fell from 43% to 19%).

- **Targeted instruction in Ghana:** The Ministry of Education, with support from the World Bank, rolled out a pilot targeted instruction intervention, with rapid student assessment and remedial education in over 10,000 basic (kindergarten, primary and lower secondary) schools across the country. Between December 2020 and February 2021, 70,000 teachers nationally were trained in targeted instruction. The intervention dedicated 2 hours per week, 3 days a week to targeted instruction in English and Math.

- **Self-guided learning in Uruguay:** Computer-assisted self-guided learning has been implemented at a national scale with Plataforma Adaptativa de Matemática (PAM) by Plan Ceibal, a digital online tool for students and teachers that adapts content to skill level and provides immediate personalized feedback. The content has been adapted to the national curriculum. An evaluation showed that primary students using PAM increased on average 0.2 standard deviations in math test scores and that the impact was greater for disadvantaged students.

Teachers are central to the success of the RAPID framework. None of the five principles will succeed without prepared, supported, and motivated teachers, and systems will need to make sure to gain teachers' commitment and incorporate their perspectives into the strategy implementation. Another key element will be to provide teachers the space for them to collaborate and learn from each other; in the face of an unprecedented challenge, figuring out how best to recover learning will require experimentation and learning in the classroom.

Sources: Andrabi, Daniels, and Das 2020; USAID 2017; Perera & Aboal 2019

The "RAPID" acronym highlights the need for speed in getting children learning as quickly as possible. For countries hit hard by the school closures, without prompt action there is a serious risk that the learning losses suffered over the past two years could become permanent, with cumulating effects and long-term intergenerational impacts. Countries that adopt policies in these five domains—tailored to their own contexts—can quickly begin to recover the learning losses and improve equity and resilience of education systems against future shocks.

The RAPID interventions will also accelerate learning in countries that had smaller learning losses but that already faced very high levels of learning poverty before COVID. These include many low-income countries where school closures were of shorter duration. Most elements of RAPID—for example, prioritizing teaching of foundational skills, and targeting instruction to the level of the student—are not just for learning recovery, but also for acceleration. In fact, much of the evidence supporting most of the RAPID interventions comes from the pre-COVID period, when they were shown to accelerate foundational learning from a more typical baseline.

For concrete guidance and examples on how to implement the RAPID framework, the six co-signing institutions of this report have also developed the companion Resource Guide on Learning Recovery (Box 6). The Resource Guide provides detailed options and country examples under each of the five policy areas of the strategy. Because new evidence on how best to promote learning recovery is constantly emerging from around the world, it is written as a living document that can be frequently updated with new examples.

Box 6: The Guide for Learning Recovery and Acceleration
A companion resource detailing how countries can recover and accelerate learning

The *Guide for Learning Recovery and Acceleration* is a detailed resource on how countries can apply the RAPID framework to tackle learning losses caused by the COVID-19-related disruptions to education and achieve a sustained acceleration of learning. Specifically, it demonstrates how to design and apply a contextually suitable Learning Recovery Program to recover and accelerate learning.

The 5-part RAPID framework, first presented in the March 2022 joint UNICEF, UNESCO, and World Bank report, captures the essential policy areas of such a Learning Recovery Program. It also conveys a sense of urgency: countries must move rapidly to meet the challenges brought by the global shock to education. While the first two policy areas, *Reach every child and keep them in school* and *Assess learning levels regularly*, are essential for monitoring and planning, the remaining policy areas constitute a menu of strategies to improve teaching and learning that can be combined and adapted to the context.

The Guide draws on evidence from what has worked to improve learning outcomes in low- and middle-income countries, including systematic reviews of education interventions and the work of the Global Education Evidence Advisory Panel (GEEAP). GEEAP consists of leading researchers and practitioners in education, and the panel's two reports highlight "smart buys" in education—cost-effective approaches to improving learning—and offer recommendations for education policymakers on how to promote learning during COVID-19.

The Guide features a menu of policy actions, examples, case studies, considerations for implementation, and links to additional resources. It offers guidance on how some of these policy actions may vary by country capacity. It highlights examples from the past that have worked to accelerate learning, such as the success with structured pedagogy through the Tusome program in Kenya. But it also spotlights new initiatives grounded in evidence, such as Ghana's targeted instruction initiative as part of their learning recovery response after COVID-19. The resource has been designed to facilitate and advance policy dialogue as education systems shape their interventions to recover and accelerate learning.

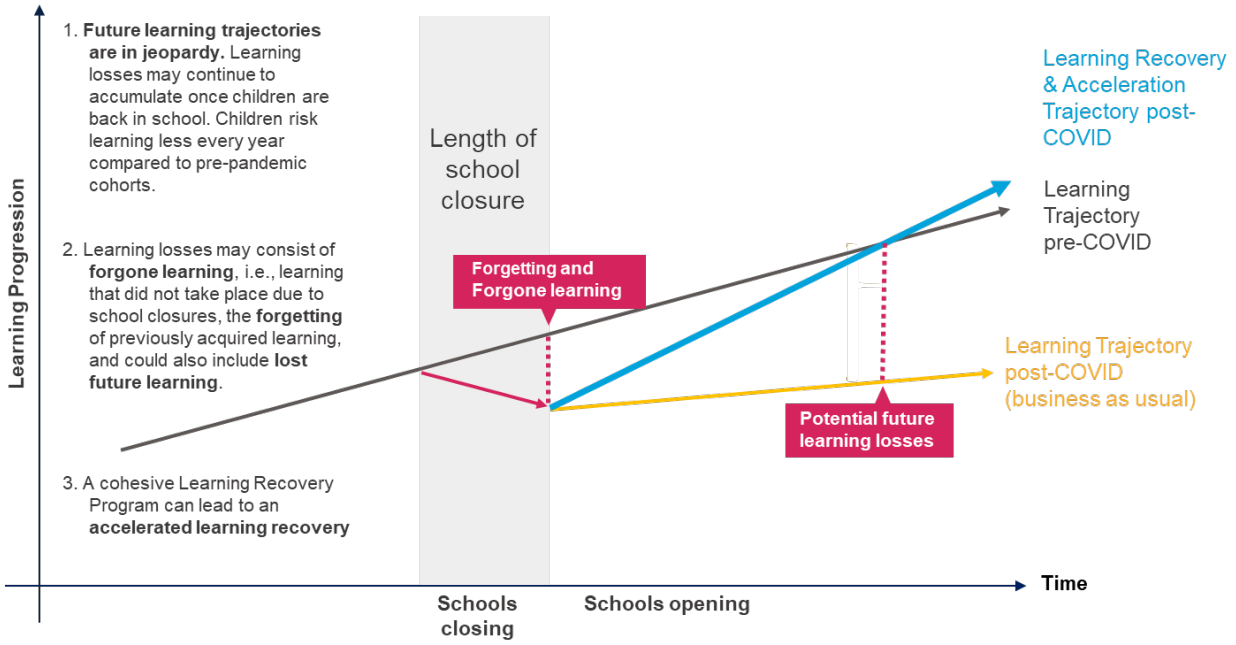
The Guide is meant to build on the wealth of knowledge produced and systematized by the six partner organizations of this report, drawing from the hard work of practitioners, governments, NGOs, and researchers around the globe. It complements the messages in this report with in-depth advice on policy options. The Guide is intended to be a living document and will be updated in the future as we learn more about what countries are doing to recover from the crisis.

Sources: World Bank, the Bill & Melinda Gates Foundation, FCDO, UNESCO, UNICEF, and USAID 2022; UNICEF, UNESCO, and World Bank 2022; Global Education Evidence Advisory Panel 2020; Global Education Evidence Advisory Panel 2022.

The longer-term agenda: Sustaining learning acceleration beyond the recovery period

Our goal must be more than recovery and short-term acceleration. Recovering lost learning and accelerating learning in the short term is a crucial first step, but it cannot mean returning to the pre-pandemic learning crisis. We should aspire to a world where all children read and do basic math by age 10—one in which all children and youth, regardless of background, have the foundational learning to acquire more complex cognitive, socioemotional, and technical skills to fulfill their potential. The pandemic provides a unique opportunity to collectively face the learning crisis head on, by finally prioritizing foundational learning for all, and building systems that can achieve it at scale.

Figure 10. Learning trajectories pre- and post-COVID



Source: Adapted from UNESCO, UNICEF, and World Bank 2021. "The State of the Global Education Crisis: A Path to Recovery."

If countries sustain and build on the learning recovery packages, they can accelerate learning well beyond the pre-pandemic trends. If sustained over time and supported by structural reforms, each of the elements of the RAPID framework will contribute to this longer-run goal of acceleration, preventing a return to the ineffective business-as-usual approaches of the pre-pandemic period (Learning Recovery and Acceleration Trajectory, in Figure 10).[72] Reaching every child, especially in primary and lower secondary, will help reach the hundreds of millions of children who were out of school even before the pandemic. Regularly assessing student learning will help guide efforts of policymakers and teachers who previously had to operate in the dark. Prioritizing foundational learning, rather than trying and failing to deliver overambitious curricula, will ensure that all children have a strong basis for further learning. The instructional techniques to increase efficiency of instruction, if sustained over time, will prove far more cost-effective at promoting learning even after recovery; these techniques include structured pedagogy and teaching students at their level. And continuing to develop psychosocial health and well-being will result in students learning more and choosing to stay in school longer and being better equipped for their lives beyond school.

Over the longer term, sustained progress to reduce learning poverty will also require coupling the RAPID interventions with reforms to strengthen education systems. There is an opportunity now to use learning recovery as a springboard for longer-term learning acceleration. Seizing it requires not only sustaining the political commitment to education, but also carrying out structural reforms to strengthen education systems. These reforms include, for example, defining a clear path to ensuring a professionalized teaching career and ongoing teacher support, providing well-designed textbooks and teaching and learning materials for all, closing the digital divide, ensuring that schools are safe and inclusive, and investing in managing schools and the system in a professional way that focuses relentlessly on improving education outcomes. Such system-strengthening will take longer to bear fruit, in terms of better learning outcomes—which means that it cannot be depended on for short-term recovery and acceleration, but also that it should start as soon as possible.

Spotlight: Deep dive on data and measures for fighting learning poverty

- **Without high-quality, regular, and comparable learning data, countries are flying blind in the fight against learning poverty.**
- **Broadly speaking, education systems need two main types of learning data: system-level and classroom-level.**
- **To institute effective policies to fight Learning Poverty, it is important for countries to have temporally comparable measures of learning for at least 2 grades (and 2 subjects),** so they can understand how much children are learning between grades.
- **Multidimensional indicators such as learning poverty can help align the multiple objectives of the education system,** such as ensuring access and quality of learning.

Better data and indicators are crucial for accelerating the fight against learning poverty

Data on student learning is a critical tool for accelerating the fight against learning poverty. Policymakers may use such data to inform policy action by getting key insights, such as the scale of the learning challenge, trends in learning over time, and inequalities in student learning. Such data can also help understand which policies to improve learning have worked or not worked. Additionally, indicators using such data, such as Learning Poverty, can play a key role in focusing policy conversations on the urgent need to fight learning poverty. Apart from policymakers, teachers and school administrators may use learning data to improve classroom practice and make decisions about what to teach and how to modify classroom practices.

Yet existing efforts to collect and use data tend to be fragmented and infrequent, especially in low- and middle-income countries, where the effects of the learning crisis are most severely felt. For example, in some countries assessments are a one-off activity, with no clear pedagogical or policy implications. Even where assessments are carried out multiple times, they are often not temporally comparable, limiting their use to gather insights about trends in learning and analysis on impacts of education policies. For example, in some countries, national assessments are often not comparable over time. Without such comparability it is impossible to track performance over time. In some instances, the time between data collection and report publication is so long that data is no longer policy relevant by the time the findings are made public.

Without good quality, regular, and comparable learning data, countries are flying blind in the fight against learning poverty. Without such data, policy makers do not know whether they are on track to improve learning outcomes and whether their policies are geared towards success. Similarly, without such data, teachers do not know whether children are on track to meet their learning goals. It will be incredibly hard for countries without learning data to implement policy measures that can help recover COVID-19 learning losses.

Better data is needed to fight learning poverty

Broadly speaking, education systems need two main types of learning data: (i) system-level data and (ii) classroom-level data.

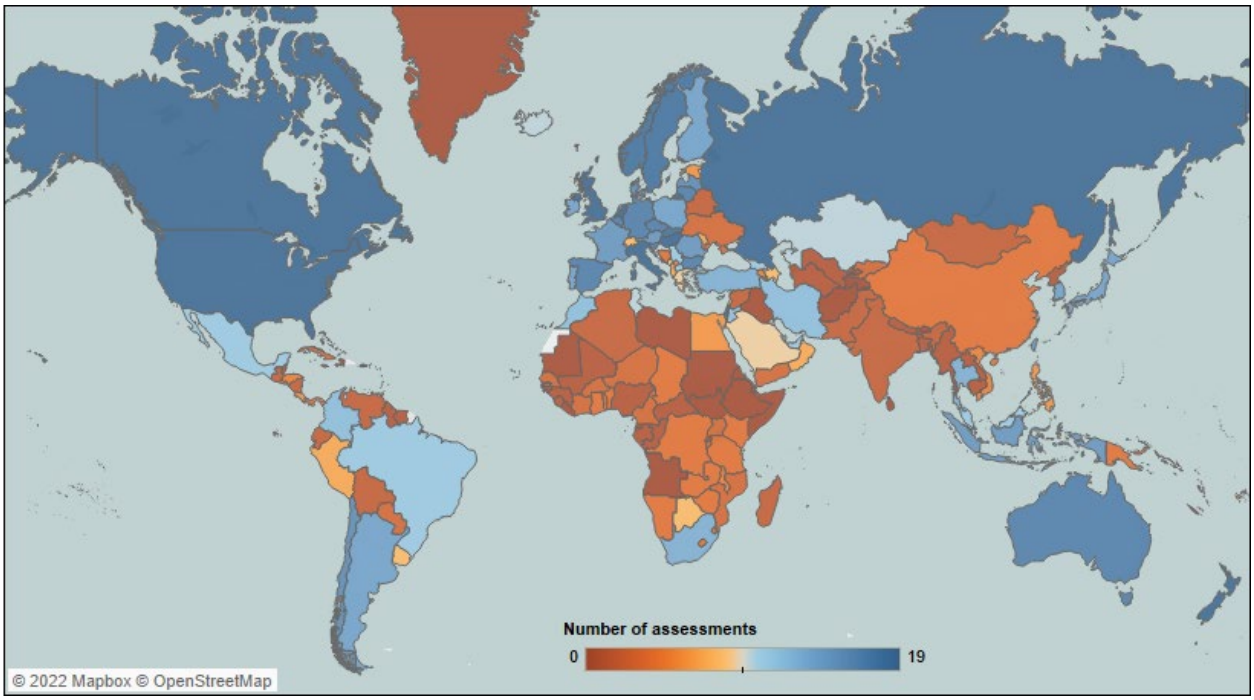
System-level learning data—such as data collected through regional or international assessments, household survey data such as MICS-FLM, and national assessments—provides an overall indication of learning performance. It can provide information about the depth of the learning challenge, as well as learning trends over time. The learning poverty indicator uses some of this system-level data from international and regional assessments such as PIRLS, TIMSS, LLECE, PASEC, and SEA-PLM.

Furthermore, there are tools and methodologies available to countries to make system-level assessment data more useful for monitoring meaningful learning progress. One example is policy linking, a judgement-based methodology through which educators are asked to evaluate the difficulty of items in a given context. This methodology can be used to link learning outcomes from existing assessments to the Global Proficiency Framework and thereby to make comparisons over time and across countries. Another tool is the MILO (Monitoring Impacts on Learning Outcomes) initiative, which has allowed countries to measure the impact of COVID-19 on learning while also allowing reporting against SDG 4.1.1b benchmarks through the Assessments for Minimum Proficiency Levels for SDG 4.1.1b (AMPL-b) tests.[73] The assessment material was derived from the UIS's Global Item Bank, which is a shared repository of assessment questions for reading and math. National assessments also have the option of integrating comparable testlets in their instruments.

In additional to system-level data, it is vital to have quality classroom-level data about the performance of students. Such data can be gathered through formative classroom assessments, yielding information about the effectiveness of teaching. Teachers may use such information to implement tailored instructional techniques to adapt to the learning levels of individual children. Such information can also help teachers understand progress against curricular standards and provide responsive and on-going learning support to children. This positive feedback loop is more important than ever after prolonged COVID-19-related school closures, which have caused some children to lose more learning than others.

Taking a deeper look at the Learning Poverty data demonstrates that behind the learning crisis highlighted in Part 1 is a learning data crisis. Without timely data, it is impossible to get an accurate understanding of the magnitude of the challenge and institute effective policies to accelerate the fight against learning poverty. In the new data release summarized in Part 1 of this report, learning poverty estimates are available for only 122 out of 217 countries. In the remaining countries, there are no learning poverty estimates due to missing learning data or in some cases, missing enrollment data. Around half of low-income countries do not have any learning poverty estimates at all. The lack of learning data is particularly acute in Sub-Saharan Africa (Figure 11), where 24 countries lack any learning poverty estimates. Even for countries for which learning poverty estimates exist, sometimes there are questions about the reliability of the data (prompted, for example, by significant decreases in learning poverty that are not easily explained by policy reform). These doubts underline the need to improve technical capacity in learning assessments at the country level and to use multiple sources of data to triangulate information on learning.

Figure 11. Massive learning data gaps exist



To institute effective policies to fight Learning Poverty, it is important for countries to have temporally comparable measures of learning for at least 2 grades (and 2 subjects) to understand how much children are learning between grades. It is particularly important to measure learning at early grades, because if children do not develop foundational skills in early grades, it becomes much harder to improve learning in higher grades. Furthermore, some sub-skills, such as letter name and sound knowledge, need to be mastered in earlier grades before children can become independent readers. The learning deprivation component of the Learning Poverty indicator is aligned with SDG 4.1.1b and reports on the share of children below the SDG 4.1.1b learning threshold. Looking at countries that have reported on *any* SDG measurement level further demonstrates the depth of the data crisis: 78 countries have not reported on any SDG measurement points through an assessment from the last 7 years. And 131 countries do not have a recent (in the last 3 years) measure of learning at 2 or more SDG 4.1.1 measurement points; this total includes 58 International Development Association (IDA)/Blend and 37 International Bank of Reconstruction and Development (IBRD) countries.[74]

One response to lack of learning data is to spur action through the World Bank's IDA20 commitments. Under the IDA20 policy commitments, the World Bank will support at least 20 IDA countries to reduce Learning Poverty by measuring learning with sex disaggregation (for example, by participating in regional assessments and building up capacity to implement national assessments), as well as by implementing core elements of the literacy policy package (for example, effective literacy instruction, structured lesson plans, and adequate reading materials for all children).[75] The IDA20 policy commitment for better learning data is a step in the right direction, but more concerted action is needed from the global community to address the data challenge.

Better indicators are needed to fight learning poverty

Education systems often have multiple goals, such as improving learning, increasing school access, improving economic opportunities, and increasing female labor force participation, to name a few. Multidimensional indicators such as Learning Poverty can help bring alignment across these multiple objectives of the education system. For example, the Learning Poverty indicator helps capture various critical dimensions of education system goals—learning outcomes, schooling (access and age-grade distortions), and learning inequality, whether between groups (for example, by gender) and within groups (for example, among children below the minimum proficiency threshold as captured through the Learning Poverty Severity indicator, described in greater detail below).

The Learning Poverty indicator matters even more in the context of COVID-19. Both of the key dimensions of the Learning Poverty indicator—schooling and learning—have been affected by COVID-19 shocks. As documented in the UNESCO, UNICEF, and World Bank *State of the Global Education Crisis* report[76], students have been experiencing learning losses across a range of contexts, from low- to high-income.

These learning and enrollment shocks could have opposite effects on Learning Deprivation, the percent of children below the minimum proficiency threshold at the end of primary. For example, learning losses due to COVID-19 school closures may increase the percent of children below the minimum proficiency threshold, and cause the average Learning Deprivation rate to go up. However, if at the same time, there is increased dropout among the lowest-performing children below the minimum proficiency threshold, whether due to prolonged school closures or to the economic impacts of the crisis, the average Learning Deprivation rate (defined as it is among children in school) could fall. Given these opposite impacts, the average Learning Deprivation rate may appear to stay constant, while children may be facing acute learning losses and increased dropout, and increased Learning Poverty. Understanding the direction of these effects through the Learning Poverty indicator and its key sub-components (Schooling Deprivation and Learning Deprivation) is critical to inform policy action to protect children from the negative schooling and learning impacts of the crisis. This is important given that some of the impacts of the crisis are showing up as large learning losses for enrolled children, as well as through lower enrollment rates. We need detailed and nuanced policy responses to guide action to keep children in school and to recover and accelerate learning.

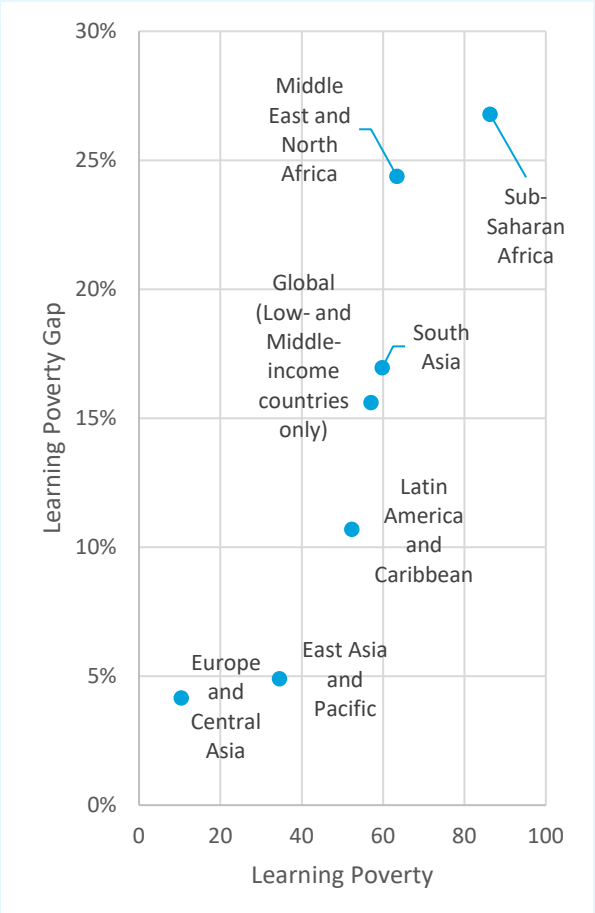
Some recent analysis suggests that learning losses are concentrated among poor students, as documented in the Netherlands, Italy, United States, Mexico, Bangladesh, and Ghana.[77] Children from poorer households are more likely to be below the minimum proficiency threshold. Learning Poverty focuses on children below the minimum proficiency threshold. This is important because in many countries, most children are below the minimum threshold, and their experience is unlikely to be captured well by measures that only look at the share of children above the minimum proficiency threshold. Even with rapid gains, many of these below-threshold children will not rise above the threshold. Therefore, there is a need to complement the Learning Poverty measure with other indicators that capture in more detail the learning needs of children below the minimum threshold.

Measures such as the Learning Poverty Gap or Learning Poverty Severity can help understand the learning needs of children below the minimum threshold. For example, the Learning Poverty Gap helps show how far students are behind the minimum proficiency level on average. Countries with a large Learning Poverty Gap will need to direct more resources and efforts targeted specifically at children at

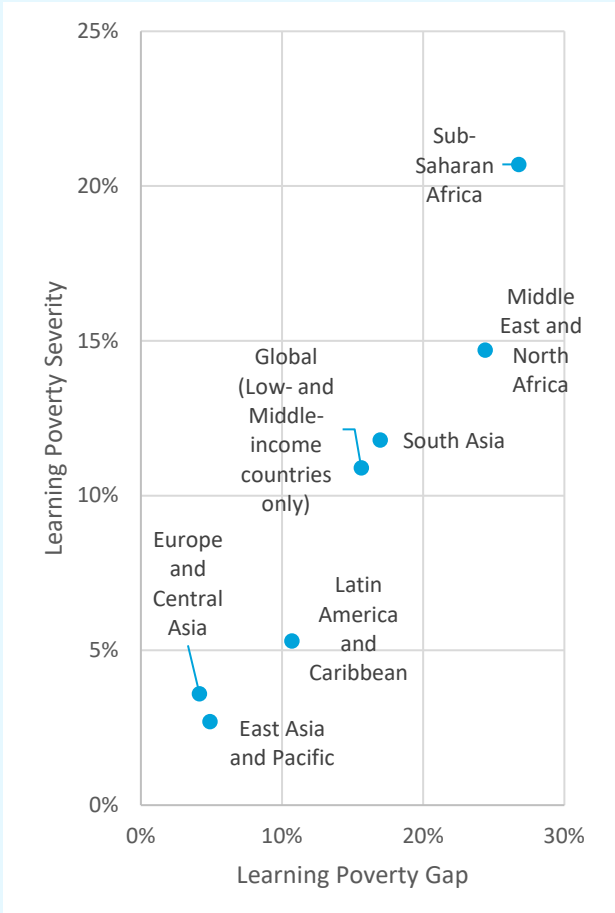
the bottom. This can be done through facilitating structured pedagogy methods in classrooms so that teachers can better address the complex and interweaving learning gaps experienced by students at the bottom. The Learning Poverty Gap indicator allows a policy focus on sub-skills, such as mastering letter names and sounds, that are essential for children to acquire to become proficient readers. Learning Poverty Severity helps indicate the inequality of learning among children below the threshold. Countries experiencing high Learning Poverty Severity will need to adopt a sharp focus on addressing learning inequality among children at the bottom through tailored and targeted instruction. This can be done through adapting teaching to the level and needs of the children. These complementary measures can help unveil important differences among countries or regions with similar levels of learning poverty, and can indicate the amount of effort required (Figure 12a) to tackle the challenge, as well its complexity (Figure 12b).[78]

Figure 12 Learning Poverty, Learning Poverty Gap, and Learning Poverty Severity by regions

(a) Regions with similar levels of learning poverty might have very different levels of learning poverty depth, as measured by the learning poverty gap.



(b) Regions with similar learning poverty gaps might have very different levels of learning poverty inequality among the learning-poor, as measured by the learning poverty severity.



Note: Definitions of learning poverty, learning poverty gap and learning poverty severity can be found in Box 1. Learning poverty gap and learning poverty severity results can be found in Annexs 6 and 7. For a more detailed discussion on these complementary measures, see Azevedo 2020.

International coalitions for learning can support and be supported by better data and indicators

Ending the learning data gaps is a pre-requisite to ending Learning Poverty. International coalitions can and should support better learning data and indicators. Initiatives such as the Learning Data Compact are an excellent effort to foster better coordination among different actors involved with data production and use.[79] A key aim of the Compact is to ensure that all countries, especially low-income countries, have at least one quality measure of foundational learning by 2025 and two by 2030. Through better coordination, it is possible to avoid duplication of efforts and resources, and ensure that resources are directed towards the production and use of timely and actionable learning data. This is critical to ensure that we not only recover COVID-19 learning losses, but also accelerate learning to ensure that all children get a good education.

Conclusion: the urgency for learning recovery and acceleration

This report shows that the global learning poverty rate is even higher than previously thought: an estimated 7 of every 10 children in low- and middle-income countries now suffer from learning poverty, meaning that they cannot read a simple text with comprehension by age 10. New data shows that in 2019, before the pandemic hit, the learning poverty rate was already 57 percent in low- and middle-income countries, and that in Sub-Saharan Africa it reached 86 percent. Moreover, global progress against learning poverty had already stalled. Since then, the COVID-driven school disruptions have sharply increased learning poverty, to an estimated 70 percent today. The increases have been especially large in South Asia and in Latin America and the Caribbean, the regions where schools have been closed the longest.

Concerted action against learning poverty is urgently needed now—both to recover learning and to accelerate it in countries that already suffered from very high learning poverty. There will be nothing automatic about learning recovery, let alone acceleration. Just reopening schools is not enough, and pre-pandemic business as usual will not heal the scars of the pandemic. First, many children have lost or never acquired the foundations—especially literacy, numeracy, and core socioemotional skills—needed for further learning. If they return to classrooms where they are taught using pre-pandemic curricula that assume these foundations, many will flounder. As a result, learning inequalities that widened during the pandemic could become permanent. Systems will need better strategies, bolstered by additional financing, that are designed to promote recovery quickly. Second, even if systems do manage to return to the pre-pandemic status quo of 2019, with its 57 percent rate of learning poverty, that will not be enough. The stagnation of global progress since 2015 shows that education systems were not successful in reducing learning poverty. To provide opportunity for all children, this has to change—and change will require both technical and political advances.

The most important factor is national political commitment and the domestic coalitions for learning. Learning poverty will fall only with sufficient society-wide commitment to foundational learning for all children. This requires political leaders who are willing to highlight the challenge and set serious targets for solving it; education systems that monitor learning and its drivers; teachers and other educators who contribute to and agree with the plan for moving forward; civil society and business groups that push politicians to prioritize foundational learning for all; and households who are engaged and supported in helping their children learn. National commitments to education require that all actors align in the design and implementation of reforms with the sole objective of improving children's and youth education and wellbeing. It is not the positions or interests of political parties or unions, nor the interest of suppliers, vendors or providers, or any other education stakeholders that should matter, but only the interests of students. With coalitions like these, solving the learning crisis becomes possible.

From a technical perspective, the RAPID framework offers evidence-based actions in five policy areas that countries can use to promote learning recovery and acceleration, starting in the short term. These actions build on proven innovations from around the world. But they are very different from what many education systems do under business as usual, so meaningful learning recovery and acceleration will require focused, intentional change at scale. The policies included in the RAPID framework are all

selected because they can begin delivering results in the short term; they do not require well-developed education systems. The good news is that, once countries have implemented these changes, they will find that most of the same RAPID policies will also reduce learning poverty over the longer term.

A global coalition can support these national efforts, which is why our six organizations are working together so closely on the agenda of foundational learning. This coalition is advancing on various fronts. First, we are speaking with one voice on vital importance of foundational skills to the SDGs. Learning poverty is one key indicator of this, but it stands in for a broader set of foundational skills that all children need for further education, employment, and citizenship. Second, we have committed to solving the learning data crisis, because countries cannot improve what they do not measure. Third, we all support evidence and analysis on how to promote foundational learning for all children. Evidence on what works for learning recovery and acceleration, and in what contexts, will continue to grow in the months and years ahead, and our organizations are committed to learning from countries' innovations and sharing the lessons.[80] Fourth, for a set of countries who are showing real commitment to prioritize the reduction of learning poverty, we provide support in all these areas, accompanied by financing.[81]

To accelerate long-term progress against learning poverty, it is crucial to sustain these approaches beyond the immediate recovery and acceleration period and couple them with key structural reforms. To recover learning losses, countries must put children on an accelerated learning trajectory to bring children back to pre-pandemic levels. But that is not enough, given how poor pre-pandemic levels and trajectories were. There is an opportunity now to use learning recovery as a springboard for longer-term learning acceleration, and that opportunity must not be missed. Seizing it requires strong, sustained political commitment and ambitious action, founded on the understanding that any deficit in foundational learning is unacceptable. Sustained longer-term acceleration will require more structural reforms to strengthen education systems. These include, for example, defining a clear path to ensuring a professionalized teaching career **and ongoing teacher support**, providing well-designed textbooks and teaching and learning materials for all, closing the digital divide, ensuring that schools are safe and inclusive, and investing in managing schools and the system in a professional way that focuses relentlessly on improving education outcomes.

Big challenges call for even greater commitment and greater effort, not acquiescence. The high levels of learning poverty violate children's right to education. After all the hard work by so many families and educators to provide education for all, it is unacceptable that less than one-third of children in low- and middle-income countries are now enrolled in school and reading with comprehension at a minimally acceptable level. The high trust that families have placed in education by ensuring 90 percent enrollment at primary level is not being rewarded with adequate learning outcomes, and this could undermine future trust and investment in education. Saving the futures of children and youth—and of their societies—demands healing the wounds inflicted by the pandemic, starting with ensuring that education systems can support children to acquire foundational skills. And that is not enough: collectively we need to build on that short-term learning recovery to take on the learning crisis that predated COVID-19. This can serve as a strong foundation for a reimagined education system—one that is inclusive, resilient, and effective, helping all children fully develop their potential. This future is the one our children and youth deserve.

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Annexes

Annex 1: List of new international and regional assessments used in the learning poverty update

TIMSS 2019

TIMSS 2019 is an international assessment covering 64 countries and 8 benchmarking systems in multiple regions across the world.[82] The 2015 round covered 57 countries.[83] TIMSS tests children in mathematics and science in grades 4 and 8. We use results for grade 4 science for calculating learning poverty measures.1 The field work for the assessment started in 2018 and ended in 2019.[84] We use TIMSS 2019 results for calculating learning poverty measures for 11 countries in the June 2022 release: Albania, Armenia, Chile, Croatia, Cyprus, Japan, Korea Rep, Montenegro, North Macedonia, Serbia, and Turkey.

SEA-PLM 2019

SEA-PLM 2019 is a regional assessment covering 6 countries in Southeast Asia. It tests children in the subjects of reading, writing, mathematics, and global citizenship in grade 5.[85] We use results for grade 5 reading for calculating learning poverty measures. The field work for the assessment started in 2019 and ended in 2019.[86] The first round of the assessment done in 2019 is used for the learning poverty update. We use SEA-PLM 2019 results for calculating learning poverty measures for 6 countries in the June 2022 release: Cambodia, Lao PDR, Malaysia, Myanmar, Philippines, and Vietnam.

PASEC 2019

PASEC 2019 is a regional assessment covering 14 countries in Sub-Saharan Africa. The 2014 round covered 10 countries.[87] PASEC tests children in the subjects of language, mathematics, and reading in grades 2 and 6.[88] We use results for grade 6 reading for calculating learning poverty measures. The field work for the assessment started in 2018 and ended in 2019.[89] We use PASEC 2019 results for calculating learning poverty measures for 14 countries in the June 2022 release: Benin, Burkina Faso, Burundi, Cameroon, Chad, Congo Dem Rep, Congo Rep, Cote d'Ivoire, Gabon, Guinea, Madagascar, Niger, Senegal, and Togo.

LLECE 2019

LLECE 2019 is a regional assessment covering 16 countries in Latin America. The 2013 round, also known as TERCE was carried out in 15 countries. Results of LLECE 2013 were reported on two scales: the then, newly established, TERCE scale, and a scale compatible with the previous round, SERCE, used primarily for historical comparability. For reporting on Learning Poverty, UNESCO and the World Bank chose to use LLECE 2019 results expressed on the SERCE scale, which defined the minimum proficiency level as those students reaching Level 3 in language (or a score above 514 points). We use LLECE 2019 (SERCE scale) results for calculating learning poverty measures for 15 countries in the June 2022 release: Argentina, Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, and Uruguay.

AMPL-b 2021

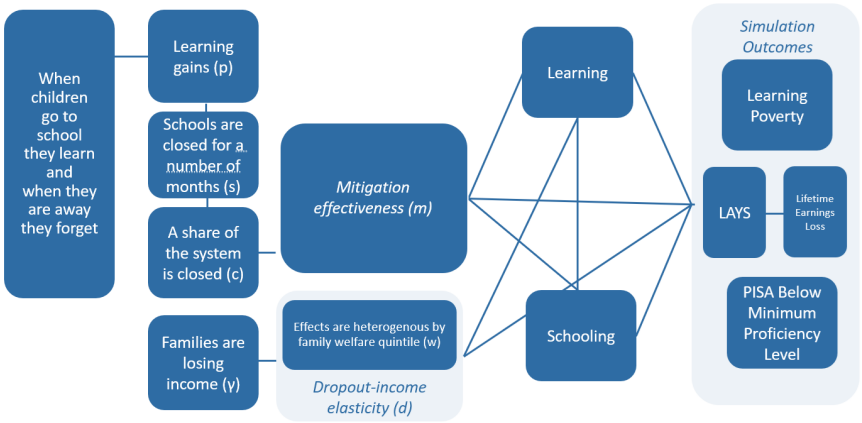
The MILO (Monitoring Impacts on Learning Outcomes) initiative has allowed countries to measure the impact of COVID-19 on learning while also allowing reporting against SDG 4.1.1b benchmarks through the Assessments for Minimum Proficiency Levels for SDG 4.1.1b (AMPL-b) tests.[90] The assessment material was derived from the UIS's Global Item Bank, which is a shared repository of assessment questions for reading and math, and follows closely the Global Proficiency Framework benchmarks agreed by countries and development partners as part of SDG 4.1.1 monitoring. National assessments also have the option of integrating comparable testlets in their instruments. We use AMPL-b 2021 results for calculating learning poverty measures for Zambia in the June 2022 release.

Annex 2. COVID-19 Learning Loss Simulation Analytical Framework

The analytical framework underlying the simulations presented in this paper is largely the same as in Azevedo et al. (2021), with one important extension – the new model allow for systems to be partially closed, something that the previous model did not account for. We can conceptualize that the current cohort of students is observed just before the crisis and during the crisis. We assume that for a given level of education quality, a student's learning is linear relative to the amount of time spent at school. The length of school closures, assuming no mitigation, will reduce the amount of time students will be exposed to learning opportunities. The learning loss will be due to two effects: (1) If schools close between two time periods without mitigation, learning is not expected to progress, and (2) As students disengage from the educational system, part of the student's stock of learning will be forgotten. The learning loss due to each of these mechanisms will depend on mitigation effectiveness.

Furthermore, the income shock from reduced economic activity due to COVID-19 may increase dropouts. The income shock may lead to more families pulling their children out of school to work, or because they cannot afford schooling. Therefore, we can expect that some of the learning loss will take place in terms of the total quantity of education that students are expected to receive throughout their school life.

Figure A2.1. Pathways of learning loss and simulation parameters



Annex 3. Key simulation assumptions

We model different scenarios (optimistic, intermediate, pessimistic) using the following key assumptions:

- **School productivity.** School productivity (or expected learning gain) refers to how much students are expected to learn while in school. These calculations are based on the literature on school productivity, unexpected school closures, and summer learning loss. Learning gains (in Harmonized Learning Outcomes points per year) vary depending on the income level of the country—50 points for high-income, 40 for upper-middle-income, 30 for lower-middle-income, and 20 for low-income countries (on a scale where the standard deviation is 100) and do not vary by simulation scenario. Learning gains for Learning Poverty are adjusted by their assessment-specific standard deviation.

- **Income shocks' impact on enrollments.** Simulations also partially capture the (much smaller) potential cumulative effects of household income shocks over the past two years on student school enrollment in primary education. This effect is negligible because evidence from both before and during COVID shows that at the primary-school level, income shocks typically have small effects on enrollment.[91] This component varies across countries based on country-specific enrollment-income elasticities and growth projections and remain constant across scenarios.

- **School closures.** We use country-specific data on the length of school closures from the UNESCO tracker, which categorizes systems as fully closed, partially closed, fully open, and on scheduled breaks. This parameter varies by countries and does not vary by simulation scenario.

- **Partial school closures.** Share of the school system partially closed varies both temporally and spatially in the model. Temporally, we have information about whether schools were fully or partially closed in each country each week, from the UNESCO tracker. Spatially, however, most countries were not able to properly monitor school status by geographic location or by grades in details. Therefore, in the simulations we incorporate this country-specific temporal information from the UNESCO tracker in the scenarios, and we combine it with the assumption that partial closures affect 75%, 85%, or 100% of students, depending on the scenario.

- **Mitigation effectiveness.** Mitigation effectiveness is measured on a scale between 0% and 100%. Mitigation effectiveness varies across scenarios based on the income level of the country. In no case do we expect the mitigation to be as effective as classroom instruction and to fully compensate losses from school closures. Mitigation effectiveness, m, conceptually brings together three elements:

    - the government supply (or expected coverage) of alternative education modalities
    - the ability of households to access (or take up) these alternative modalities
    - the effectiveness of the alternative modalities

  Mitigation effectiveness varies by country-income level and scenario.

For each scenario, the simulation model generates measures of learning losses in terms of: Learning Poverty, Harmonized Learning Outcomes (HLO), Learning Adjusted Years of Schooling (LAYS), Learning Poverty Gap, Learning Poverty Severity, and PISA scores. The LAYS measure is also used to generate the estimates reported in Part 1 on the present value of future earnings losses for the current generation of children.

Scenarios Summary

- **Optimistic**: Mitigation measures have a middle level of effectiveness (10% for LICs, 14% for LMICs, 20% for UMICs and 30% for HICs). Partial closures are assumed to affect 75% of the student population.
- **Intermediate**: Mitigation measures have a low level of effectiveness (5% for LICS, 7% for LMICs, 10% for UMICs 15% for HICs). Partial closures are assumed to affect 85% of the student population.
- **Pessimistic**: Mitigation measures have a low level of effectiveness (5% for LICS, 7% for LMICs, 10% for UMICs 15% for HICs). Partial closures are treated as full closures.

Table A3.1 Global simulation parameters

	Current Global Simulations
School productivity (in HLO points / year) in a regular school year	Varies by countries' income level. Learning gains (in HLO points per year) vary depending on the income level of the country: 50 for high-income, 40 for upper-middle income, 30 for lower-middle income, and 20 for low-income countries (on a scale with the SD=100). They are the same across scenarios.
School closures	Weekly country-specific data from UNESCO school closures tracker for February 2020 – February 2022. School status for each country is observed as either fully open, fully closed, partially closed, or on scheduled breaks.
Partial school closure	• **Optimistic**: Partial closures are assumed to affect 75% of the student population. • **Intermediate**: Partial closures are assumed to affect 85% of the student population. • **Pessimistic**: Partial closures are treated as full closures.
Mitigation Effectiveness	• **Optimistic:** Mitigation measures have a middle level of effectiveness (10% for LICs, 14% for LMICs, 20% for UMICs and 30% for HICs). • **Intermediate and Pessimistic**: Mitigation measures have a low level of effectiveness (5% for LICS, 7% for LMICs, 10% for UMICs, 15% for HICs).
Income-enrollment elasticities	Country-specific income-enrollment elasticities estimated using household surveys for primary and secondary school-age children separately.
Baseline Values	Global Learning Poverty Database from June 2022, updated from 2019 release of Learning Poverty . Includes PASEC 2019, TIMSS 2019, LLECE 2019, and new assessments, SEA-PLM 2019, and AMPL-b 2021 (Zambia), as well as NLAs from Lesotho with items to make it comparable to international surveys. The new Learning Poverty window for aggregate estimates is ±4 assessment years around 2019. There are some exceptions: Afghanistan, Kyrgyzstan, Lesotho, Pakistan, Tunisia, Uganda, and Yemen. Global HCI database from 2021.
Population	Estimates for 2019 were used for aggregate calculations.
Length of period in calendar years	2
Economic projections	Economic forecasts are from Global Economic Prospects (GEP) June 2021 (for 2020) and January 2022 (for 2021).

Note: Adapted from Azevedo et al (2022)

Annex 4: Learning poverty by region and income level (2015 and 2019) and simulation results (2022)

	2015	2019*	2022*		
			Optimistic	Intermediate	Pessimistic
World	48.0	51.9	62.4	64.3	65.5
Global (Low- and Middle-income countries only)	52.7	57.0	68.2	70.0	71.2
By Region (Low- and Middle-income countries only)					
East Asia and Pacific	21.2	34.5	43.0	44.6	45.6
Europe and Central Asia	13.3	10.4	13.3	14.1	14.5
Latin America and Caribbean	50.8	52.3	74.9	79.0	81.1
Middle East and North Africa	63.3	63.4	69.1	70.0	70.5
South Asia	58.2	59.8	75.7	78.0	79.6
Sub-Saharan Africa	86.7	86.3	89.0	89.4	89.7
By Income Level					
High-income	9.1	8.0	11.8	13.6	14.7
Upper-middle-income	30.3	29.4	41.0	43.1	44.2
Lower-middle-income	55.8	60.4	74.5	76.7	78.3
Low-income	89.5	90.6	91.6	91.7	91.8

Source: 2022 simulation results taken from Azevedo et al., 2022.

Annex 5: Detailed 2019 country learning poverty data

Country Name	Learning Poverty	Learning Deprivation	Schooling Deprivation	Year of Assessment	Assessment
Afghanistan	93.4	87.0	49.6	2013	NLA
Albania	16.5	14.3	2.6	2019	TIMSS
Algeria	67.9	66.5	4.1	2007	TIMSS
American Samoa					None
Andorra					None
Angola					None
Antigua and Barbuda					None
Argentina	59.1	58.9	0.5	2019	LLECES
Armenia	27.2	19.9	9.2	2019	TIMSS
Aruba					None
Australia	8.6	5.5	3.2	2016	PIRLS
Austria	13.3	2.4	11.1	2016	PIRLS
Azerbaijan	23.3	19.2	5.0	2016	PIRLS
Bahamas, The					None
Bahrain	32.1	30.6	2.1	2016	PIRLS
Bangladesh	58.2	56.0	5.0	2017	NLA
Barbados					None
Belarus					None
Belgium	6.4	5.1	1.3	2016	PIRLS

Belize	76.4	74.8	6.5	2001	PIRLS
Benin	55.8	54.5	2.8	2019	PASEC
Bermuda					None
Bhutan					None
Bolivia					None
Bosnia and Herzegovina					None
Botswana	50.8	44.3	11.7	2011	PIRLS
Brazil	46.9	45.6	2.4	2019	LLECES
British Virgin Islands					None
Brunei Darussalam					None
Bulgaria	15.2	5.2	10.5	2016	PIRLS
Burkina Faso	73.9	67.1	20.7	2019	PASEC
Burundi	95.8	95.5	6.6	2019	PASEC
Cabo Verde					None
Cambodia	90.0	89.0	9.3	2019	SEA-PLM
Cameroon	71.9	69.8	7.1	2019	PASEC
Canada	4.3	4.3	0.0	2016	PIRLS
Cayman Islands					None
Central African Republic					None
Chad	94.4	92.4	26.5	2019	PASEC
Channel Islands					None
Chile	27.2	23.2	5.2	2019	TIMSS
China	18.2	18.2	0.0	2016	NLA
Colombia	51.4	50.2	2.2	2019	LLECES
Comoros	86.0	82.3	20.8	2008	PASEC
Congo, Dem Rep	96.6	90.8	63.2	2019	PASEC
Congo, Rep	70.0	66.4	10.7	2019	PASEC
Costa Rica	34.0	33.3	1.1	2019	LLECES
Cote d'Ivoire	82.6	78.0	21.1	2019	PASEC
Croatia	4.5	2.5	2.0	2019	TIMSS
Cuba	27.9	25.1	3.8	2006	LLECES
Curacao					None
Cyprus	9.9	7.9	2.2	2019	TIMSS
Czech Republic	13.8	3.0	11.2	2016	PIRLS
Denmark	3.6	2.6	1.0	2016	PIRLS
Djibouti					None
Dominica					None
Dominican Republic	77.7	76.3	6.1	2019	LLECES
Ecuador	65.9	65.1	2.4	2019	LLECES
Egypt, Arab Rep	69.6	69.2	1.4	2016	PIRLS
El Salvador	69.1	62.1	18.4	2019	LLECES
Equatorial Guinea					None
Eritrea					None
Estonia					None
Eswatini					None
Ethiopia	90.4	88.7	14.8	2015	NLA

Faroe Islands					None
Fiji					None
Finland	2.6	1.7	0.9	2016	PIRLS
France	6.9	6.3	0.6	2016	PIRLS
French Polynesia					None
Gabon	30.7	23.7	9.1	2019	PASEC
Gambia, The					None
Georgia	15.3	13.5	2.0	2016	PIRLS
Germany	14.4	5.5	9.4	2016	PIRLS
Ghana					None
Gibraltar					None
Greece	7.7	5.5	2.3	2001	PIRLS
Greenland					None
Grenada					None
Guam					None
Guatemala	78.5	75.9	10.8	2019	LLECES
Guinea	82.7	77.8	21.9	2019	PASEC
Guinea-Bissau					None
Guyana					None
Haiti					None
Honduras	79.3	74.3	19.5	2019	LLECES
Hong Kong SAR, China	4.2	1.4	2.8	2016	PIRLS
Hungary	5.9	2.9	3.1	2016	PIRLS
Iceland	9.3	6.8	2.7	2006	PIRLS
India	56.1	53.7	5.1	2017	NLA
Indonesia	52.8	49.4	6.8	2015	TIMSS
Iran, Islamic Rep	35.2	35.1	0.2	2016	PIRLS
Iraq					None
Ireland	2.3	2.3	0.0	2016	PIRLS
Isle of Man					None
Israel	11.7	9.0	2.9	2016	PIRLS
Italy	4.4	2.1	2.3	2016	PIRLS
Jamaica					None
Japan	3.6	1.8	1.8	2019	TIMSS
Jordan	62.5	50.0	25.1	2015	TIMSS
Kazakhstan	2.2	1.9	0.3	2016	PIRLS
Kenya					None
Kiribati					None
Korea, Dem People's Rep					None
Korea, Rep	3.2	0.8	2.5	2019	TIMSS
Kosovo					None
Kuwait	51.1	49.4	3.4	2016	PIRLS
Kyrgyz Republic	64.5	63.8	1.9	2014	NLA
Lao PDR	97.7	97.5	8.5	2019	SEA-PLM
Latvia	4.0	0.8	3.2	2016	PIRLS
Lebanon					None

Lesotho	97.0	96.6	12.1	2014	NLA
Liberia					None
Libya					None
Liechtenstein					None
Lithuania	3.0	2.7	0.3	2016	PIRLS
Luxembourg	3.0	1.2	1.7	2006	PIRLS
Macao SAR, China	5.6	2.4	3.2	2016	PIRLS
Madagascar	93.9	93.7	3.1	2019	PASEC
Malawi					None
Malaysia	42.0	41.7	0.5	2019	SEA-PLM
Maldives					None
Mali	90.9	82.3	48.4	2002	PASEC
Malta	28.0	26.8	1.5	2016	PIRLS
Marshall Islands					None
Mauritania	94.8	92.9	25.8	2004	PASEC
Mauritius	40.5	38.0	4.0	2006	PASEC
Mexico	47.6	47.2	0.8	2019	LLECES
Micronesia, Fed Sts					None
Moldova	11.0	8.7	2.5	2006	PIRLS
Monaco					None
Mongolia	39.5	38.1	2.3	2007	TIMSS
Montenegro	27.1	24.7	3.1	2019	TIMSS
Morocco	64.9	63.8	3.1	2016	PIRLS
Mozambique					None
Myanmar	89.5	89.3	1.9	2019	SEA-PLM
Namibia					None
Nauru					None
Nepal					None
Netherlands	2.3	1.3	1.0	2016	PIRLS
New Caledonia					None
New Zealand	11.4	10.0	1.5	2016	PIRLS
Nicaragua	78.9	78.1	3.7	2019	LLECES
Niger	90.4	85.6	33.5	2019	PASEC
Nigeria					None
North Macedonia	40.9	38.2	4.3	2019	TIMSS
Northern Mariana Islands					None
Norway	6.0	5.8	0.2	2016	PIRLS
Oman	41.8	40.9	1.4	2016	PIRLS
Pakistan	77.0	65.0	34.2	2014	NLA
Palau					None
Panama	78.5	75.2	13.2	2019	LLECES
Papua New Guinea					None
Paraguay	77.7	74.7	12.2	2019	LLECES
Peru	44.4	43.6	1.5	2019	LLECES
Philippines	90.9	90.4	5.0	2019	SEA-PLM
Poland	4.8	2.0	2.8	2016	PIRLS

Portugal	6.0	3.0	3.1	2016	PIRLS
Puerto Rico					None
Qatar	35.7	33.8	2.8	2016	PIRLS
Romania	17.9	14.1	4.4	2011	PIRLS
Russian Federation	3.5	0.9	2.7	2016	PIRLS
Rwanda					None
Samoa					None
San Marino					None
Sao Tome and Principe					None
Saudi Arabia	38.2	36.7	2.5	2016	PIRLS
Senegal	68.6	58.9	23.5	2019	PASEC
Serbia	9.8	8.2	1.8	2019	TIMSS
Seychelles					None
Sierra Leone					None
Singapore	2.8	2.7	0.0	2016	PIRLS
Sint Maarten (Dutch part)					None
Slovak Republic	23.2	6.6	17.8	2016	PIRLS
Slovenia	5.4	3.7	1.8	2016	PIRLS
Solomon Islands					None
Somalia					None
South Africa	78.9	77.9	4.4	2016	PIRLS
South Sudan					None
Spain	4.5	3.4	1.1	2016	PIRLS
Sri Lanka	14.8	14.0	0.9	2015	NLA
St Kitts and Nevis					None
St Lucia					None
St Martin (French part)					None
St Vincent and the Grenadines					None
Sudan					None
Suriname					None
Sweden	2.3	1.9	0.4	2016	PIRLS
Switzerland					None
Syrian Arab Republic					None
Tajikistan					None
Tanzania					None
Thailand	23.4	21.9	1.9	2011	TIMSS
Timor-Leste					None
Togo	81.7	80.6	5.3	2019	PASEC
Tonga					None
Trinidad and Tobago	20.6	19.7	1.2	2016	PIRLS
Tunisia	65.5	65.1	1.2	2011	TIMSS
Turkey	14.5	9.9	5.1	2019	TIMSS
Turkmenistan					None
Turks and Caicos Islands					None
Tuvalu					None
Uganda	81.9	81.1	4.4	2014	NLA

Ukraine	27.9	18.3	11.7	2007	TIMSS
United Arab Emirates	32.8	32.4	0.6	2016	PIRLS
United Kingdom	3.5	3.2	0.3	2016	PIRLS
United States	4.3	3.9	0.4	2016	PIRLS
Uruguay	43.6	43.4	0.4	2019	LLECES
Uzbekistan					None
Vanuatu					None
Venezuela, RB					None
Vietnam	18.1	18.1	0.0	2019	SEA-PLM
Virgin Islands (US)					None
West Bank and Gaza					None
Yemen, Rep	94.7	93.5	17.8	2011	TIMSS
Zambia	98.5	98.2	14.9	2019	AMPLB
Zimbabwe					None

Source: UIS and World Bank Global Learning Poverty database, 2022. Note: "LLECES" represents LLECE results in the SERCE scale.

Annex 6: Change in learning poverty gap by region and income level

	Pre-COVID	2022		
	Baseline	Optimistic	Intermediate	Pessimistic
World	14.2%	17.1%	17.6%	18.0%
Global (Low- and Middle- income countries only)	15.6%	18.7%	19.2%	19.5%
By Region (Low- and Middle- income countries only)				
East Asia and Pacific	4.9%	6.1%	6.3%	6.5%
Europe and Central Asia	4.2%	5.3%	5.6%	5.8%
Latin America and Caribbean	10.7%	15.3%	16.2%	16.6%
Middle East and North Africa	24.4%	26.5%	26.9%	27.1%
South Asia	17.0%	21.5%	22.1%	22.6%
Sub-Saharan Africa	26.8%	27.6%	27.8%	27.8%
By income level				
High-income	2.7%	4.0%	4.6%	5.0%
Upper-middle-income	4.7%	6.6%	6.9%	7.1%
Lower-middle-income	16.8%	20.8%	21.4%	21.8%
Low-income	27.8%	28.1%	28.1%	28.2%

Source: Azevedo et al., 2022

Annex 7: Change in learning poverty severity by region and income level

	Pre-COVID	2022		
	Baseline	Optimistic	Intermediate	Pessimistic
World	9.9%	12.0%	12.3%	12.6%
Global (Low- and Middle- income countries only)	10.9%	13.0%	13.4%	13.6%
By Region (Low- and Middle- income countries only)				
East Asia and Pacific	2.7%	3.3%	3.4%	3.5%
Europe and Central Asia	3.6%	4.6%	4.9%	5.0%
Latin America and Caribbean	5.3%	7.6%	8.0%	8.2%
Middle East and North Africa	14.7%	15.9%	16.2%	16.3%
South Asia	11.8%	14.9%	15.4%	15.7%
Sub-Saharan Africa	20.7%	21.4%	21.5%	21.6%
By income level				
High-income	2.1%	3.1%	3.6%	3.9%
Upper-middle-income	2.6%	3.6%	3.8%	3.8%
Lower-middle-income	11.0%	13.6%	14.0%	14.3%
Low-income	22.6%	22.8%	22.8%	22.9%

Source: Azevedo et al., 2022

Annex 8: Global economic cost by region and income level

Global aggregate economic cost at present value by region, income group, and lending type (in trillions of 2017 PPP $)

	Current losses ($ trillions)		
	Optimistic	Intermediate	Pessimistic
Global	16.6	20.6	22.8
Global (Low- and Middle- income countries only)	9.4	11.1	12.1
By Region (Low- and Middle- income countries only)			
East Asia and Pacific	3.9	4.7	5.1
Europe and Central Asia	0.8	1.0	1.1
Latin America and Caribbean	2.3	2.7	2.9
Middle East and North Africa	0.3	0.3	0.4
South Asia	1.6	1.9	2.0
Sub-Saharan Africa	0.5	0.5	0.6
By income level			
High-income	7.5	9.8	11.1
Upper-middle-income	5.8	6.9	7.6
Lower-middle-income	3.1	3.6	3.9
Low-income	0.2	0.2	0.2

Source: Azevedo et al., 2022

Annex 9: Per-student average earnings loss (annual) by region and income level

Per student average earnings loss in annual terms by region, income group, and lending type (2017 PPP $)

	Current Losses ($)		
	Optimistic	Intermediate	Pessimistic
Global	$1,289	$1,598	$1,743
Global (Low- and Middle- income countries only)	$822	$975	$1,051
By Region (Low- and Middle- income countries only)			
East Asia and Pacific	$678	$781	$836
Europe and Central Asia	$974	$1,171	$1,266
Latin America and Caribbean	$1,661	$2,014	$2,186
Middle East and North Africa	$825	$937	$980
South Asia	$652	$738	$793
Sub-Saharan Africa	$329	$382	$410
By income level			
High-income	$2,499	$3,223	$3,543
Upper-middle-income	$1,275	$1,508	$1,624
Lower-middle-income	$494	$560	$602
Low-income	$155	$169	$178

Source: Azevedo et al., 2022

Annex 10: Per-student average earnings loss (lifetime) by region and income level

Per student average lifetime earning loss at present value by region, income group, and lending type (2017 PPP $)

	Current Losses ($)		
	Optimistic	Intermediate	Pessimistic
Global	$23,514	$29,162	$31,800
Global (Low- and Middle- income countries only)	$14,993	$17,780	$19,166
By Region (Low- and Middle- income countries only)			
East Asia and Pacific	$12,365	$14,240	$15,255
Europe and Central Asia	$17,778	$21,362	$23,091
Latin America and Caribbean	$30,306	$36,751	$39,890
Middle East and North Africa	$15,061	$17,098	$17,886
South Asia	$11,898	$13,464	$14,472
Sub-Saharan Africa	$5,996	$6,962	$7,478
By income level			
High-income	$45,594	$58,794	$64,644
Upper-middle-income	$23,258	$27,514	$29,625
Lower-middle-income	$9,019	$10,217	$10,975
Low-income	$2,820	$3,081	$3,255

Source: Azevedo et al., 2022

Annex 11: Earnings loss as share of average earnings (annual) by region and income level

Earnings loss as a share of average earnings by region, income group, and lending type

	Current Losses (%)		
	Optimistic	Intermediate	Pessimistic
Global	8.8%	10.4%	11.3%
Global (Low- and Middle- income countries only)	8.8%	10.2%	11.1%
By Region (Low- and Middle- income countries only)			
East Asia and Pacific	8.3%	9.8%	10.7%
Europe and Central Asia	5.8%	6.9%	7.5%
Latin America and Caribbean	13.9%	16.3%	17.6%
Middle East and North Africa	5.6%	6.4%	6.7%
South Asia	12.5%	14.4%	15.8%
Sub-Saharan Africa	4.6%	5.1%	5.5%
By income level			
High-income	9.1%	12.0%	13.5%
Upper-middle-income	8.3%	9.9%	10.8%
Lower-middle-income	10.0%	11.5%	12.5%
Low-income	4.9%	5.4%	5.8%

Source: Azevedo et al., 2022

Endnotes

[1] World Bank 2019.
[2] World Bank n.d.
[3] World Bank, UNESCO, and UNICEF 2021.
[4] Hanushek et al. 2013; Valerio et al. 2016.
[5] Alderman, Hoddinott, and Kinsey 2006.
[6] Rissa-Gill and Finnegan 2015 and Peterman et al. 2020.
[7] Bandeira et al 2019.
[8] Andrabi, Daniels, and Das 2020.
[9] Other recent studies also show that the macroeconomic impacts of the loss of human capital will be greater in the low- and middle-income countries in relative terms (Buffie et al. 2022).
[10] World Bank, UNESCO, and UNICEF 2021.
[11] World Bank 2018; Crouch 2020; Global Education Evidence Advisory Panel 2020; Global Education Evidence Advisory Panel 2022.
[12] Global Education Evidence Advisory Panel 2020.
[13] Saavedra Chanduvi et al. 2020.
[14] Azevedo et al. 2021.
[15] UNESCO Institute for Statistics (UIS) 2019.
[16] Gust, Hanushek, and Woessmann forthcoming.
[17] World Bank 2019.
[18] World Bank, UNESCO, and UNICEF 2021; Donnelly and Patrinos 2021; Storey and Zhang 2021; Moscoviz and Evans 2022.
[19] Ardington, Willis, and Kotze 2021; Hevia et al. 2021.
[20] Throughout this document, the global learning poverty rate refers to the rate for all low- and middle-income countries.
[21] World Bank 2019.
[22] The updated global figure incorporates new learning data from other regions as well. In East Asia and the Pacific, the new higher numbers reflect the availability of a new regional assessment, SEA-PLM. This assessment is better aligned with SDG global proficiency framework (GPF), and it has replaced a number of National Learning Assessments that were being used for the interim reporting of the SDGs. Finally, this update includes data for a few countries that are reporting learning poverty for the first time, thanks to innovations promoted by UIS and USAID. These innovations use new methods to align national learning assessments with the GPF and have created very cost-effective learning assessments developed to report on minimum proficiency level used for SDG 4.1.1b, such as the AMPL-B (Assessment for the Minimum Proficiency Level – B).
[23] World Bank n.d.
[24] One notable exception is the AMPL-B program led by UIS, which produced learning loss estimates for 6 Sub-Saharan countries.
[25] For details on the simulations model and assumptions, please see Azevedo et al. 2022.
[26] See Azevedo et al. 2021 and Moscoviz and Evans 2022 for a summary of that evidence.
[27] Muñoz-Najar et al. 2021.
[28] Responses to Educational Disruption Survey, Meinck et al. 2022
[29] UNESCO et al. 2021a.
[30] Muñoz-Najar et al. 2021a.
[31] UNESCO et al. 2021a.
[32] UNESCO et al. 2021a.
[33] Josephson, Kilic, and Michler 2020.
[34] World Bank, UNESCO, and UNICEF 2021.

[35] As described in Annex 3, of the three scenarios, we report and he intermediate scenario is simulated based on the following: (1) schools were closed for a time period based on actual data for February 2020 – February 2022 using the UNESCO school closures tracker, (2) all mitigation measures have had a low level of effectiveness, although different by income level (3) partial school closures are assumed to affect 85% of the student population (4) For countries with learning data (LAYS, LP, or PISA) but no school closure data, we impute missing values for share of school system closed by using the regional average by income level. For more details, please see Azevedo et al. 2022.
[36] Azevedo et al. 2021 shows that the global historical rate of progress was approximately 0.7 learning poverty points per year (Table 9). At this rate of progress, the 13-percentage-point increase in learning poverty would be equivalent to 19 years of the observed average global rate of progress in this indicator.
[37] See Table A.2 and A.3 for aggregate and country-level results.
[38] See Annex 6 and 7 for results by Learning Poverty Gap and Learning Poverty Severity.
[39] Angrist et al. 2021.
[40] Donnelly and Patrinos 2021.
[41] Moscoviz and Evans 2022.
[42] World Bank, UNESCO, and UNICEF 2021.
[43] SEDUC-SP 2021.
[44] Moscoviz and Evans 2022.
[45] See Annex 8 for further simulation results on the economic cost for different aggregates.
[46] GDP and learning losses expressed in earnings are deflated using constant 2017 PPP values.
[47] This simulation results include High-income countries. See Table A.6 for other aggregates. See Azevedo et al. 2022 for more details of the simulation.
[48] Gibbs et al. 2019.
[49] Meyers and Thomasson 2017.
[50] Alderman, Hoddinott, and Kinsey 2006.
[51] Rissa-Gill and Finnegan 2015 and Peterman et al. 2020.
[52] Bandeira et al. 2019.
[53] Andrabi, Daniels, and Das 2020.
[54] Montoya and Antoninis 2020 and UNESCO Institute for Statistics (UIS) 2021.
[55] UNESCO Institute for Statistics (UIS) and Global Education Monitoring Report (GEMR) 2022.
[56] Azevedo, Goldemberg, et al. 2021.
[57] UNICEF, UNESCO, and World Bank 2022.
[58] UNICEF, UNESCO, and World Bank 2022.
[59] Crawfurd, Hares, and Minardi 2021.
[60] Crawfurd, Hares, Minardi, and Sandefur, 2021
[61] UNESCO 2021a.
[62] UNESCO et al. 2021b.
[63] UNICEF, UNESCO, and World Bank 2022.
[64] Modern Ghana News 2021.
[65] World Bank 2022a.
[66] Gobierno del Estado de Guanajuato 2021.
[67] UNESCO 2021b.
[68] Ministry of Education and Culture, Indonesia n.d.
[69] UNESCO 2021b.
[70] Bulat 2020.
[71] Béteille et al. 2020.
[72] The slope of the post-pandemic business-as-usual is intentionally drawn as lower than the pre-pandemic learning trajectory. This is because, as explained in World Bank, UNESCO, and UNICEF 2021, and drawing especially on Andrabi, Daniels, and Das 2020, there is a risk that if students who are well behind the curriculum return to classrooms that do not adjust to their learning levels, they will learn more slowly.

[73] See Appendix B at UNESCO Institute for Statistics (UIS) 2022.
[74] International Development Association (IDA) countries have low per capita incomes and lack the financial ability to borrow from the International Bank of Reconstruction and Development (IBRD). Blend countries qualify for both IDA and IBRD loans. For further details on World Bank country classifications visit: https://datahelpdesk.worldbank.org/knowledgebase/articles/378834-how-does-the-world-bank-classify-countries
[75] World Bank 2022b.
[76] World Bank, UNESCO, and UNICEF 2021.
[77] Moscoviz and Evans 2022.
[78] For a more detailed discussion on the policy implications of measures such as learning poverty gap and learning poverty severity please see Azevedo 2020.
[79] World Bank 2022c.
[80] The World Bank and UNICEF in partnership with several other organizations have recently launched the Global Education Recovery Panel (GEAP) and the FLN Hub (https://www.flnhub.org/)
[81] For more information check the Accelerator Program launched by the World Bank in partnership with Bill & Melinda Gates Foundation, U.K.'s Foreign, Commonwealth & Development Office (FCDO), UNICEF, and USAID. https://www.worldbank.org/en/news/feature/2020/11/20/world-bank-launches-accelerator-countries-program-to-improve-global-foundational-learning
[82] TIMSS 2019.
[83] TIMSS 2015.
[84] IEA 2019.
[85] SEA-PLM 2019.
[86] SEA-PLM 2019.
[87] CONFEMEN 2014.
[88] CONFEMEN 2019.
[89] CONFEMEN 2019.
[90] UNESCO Institute for Statistics (UIS) 2022.
[91] See Azevedo et al. 2021 and Evans and Moscoviz 2022 for a summary of that evidence.