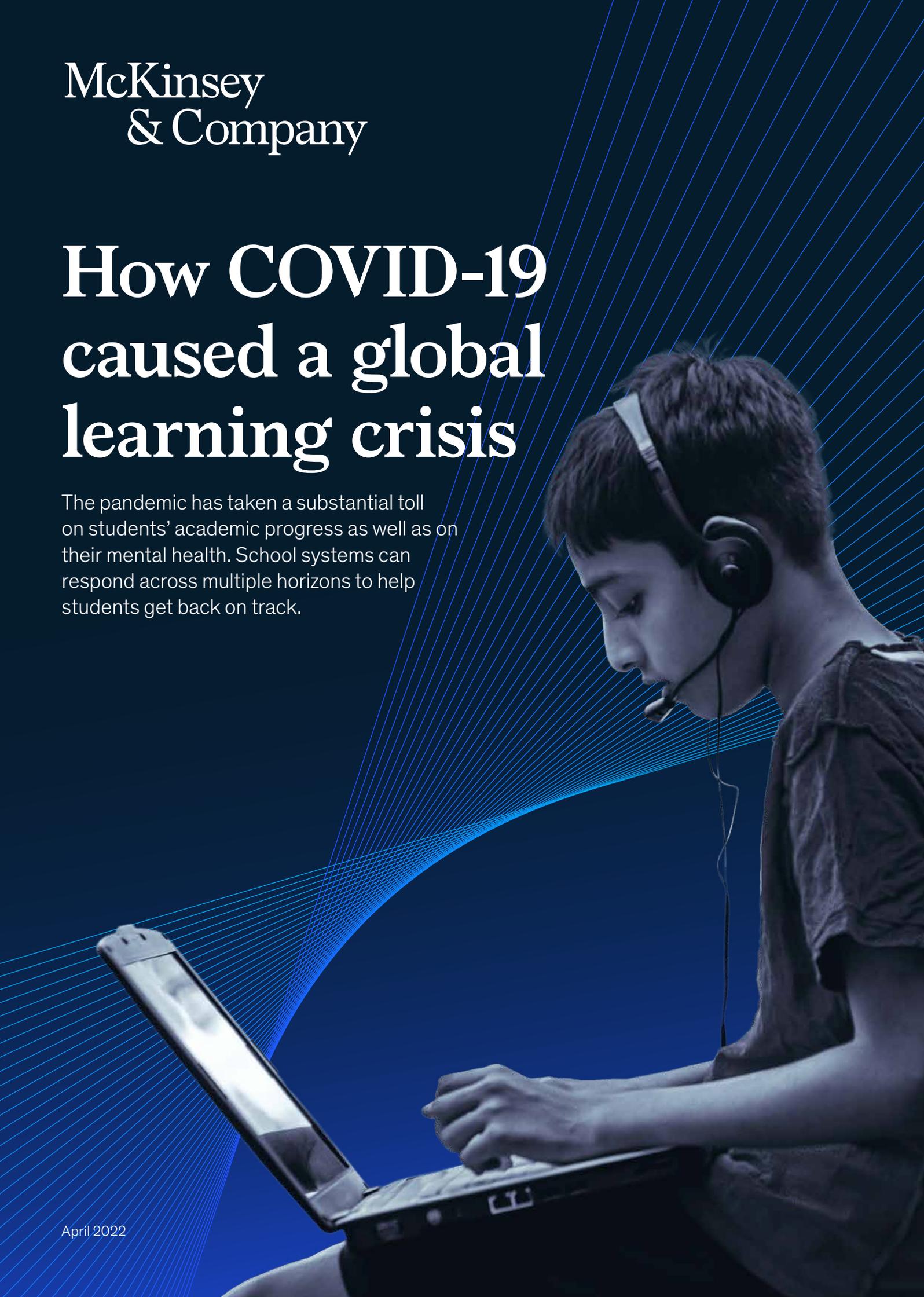


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How COVID-19 caused a global learning crisis

The pandemic has taken a substantial toll on students' academic progress as well as on their mental health. School systems can respond across multiple horizons to help students get back on track.

April 2022





Executive Summary

This article is a collaborative effort by Jake Bryant, Felipe Child, Emma Dorn, Jose Espinosa, Stephen Hall, Topsy Kola-Oyeneyin, Cheryl Lim, Frédéric Panier, Jimmy Sarakatsannis, Dirk Schmutzter, Seckin Ungur, and Bart Woord, representing views from McKinsey's Education Practice.

In our latest report on unfinished learning, we examine the impact of the COVID-19 pandemic on student learning and well-being, and identify potential considerations for school systems as they support students in recovery and beyond. Our key findings include the following:

- The length of school closures varied widely across the world. School buildings in middle-income Latin America and South Asia were fully or partially closed the longest—for 75 weeks or more. Those in high-income Europe and Central Asia were fully or partially closed for less time (30 weeks on average), as were those in low-income sub-Saharan Africa (34 weeks on average).
- Access to quality remote and hybrid learning also varied both across and within countries. In Tanzania, while school buildings were closed, children in just 6 percent of households listened to radio lessons, 5 percent accessed TV lessons, and fewer than 1 percent participated in online learning.¹
- Furthermore, pandemic-related learning delays stack up on top of historical learning inequities. The World Bank estimates that while students in high-income countries gained an average of 50 harmonized learning outcomes (HLO) points a year prepandemic, students in low-income countries were gaining just 20, leaving those students several years behind.²
- On average, students globally are eight months behind where they would have been absent the pandemic, but the impact varies widely, with countries falling into three archetypes:
 - High-performing systems, with relatively high levels of pre-COVID-19 performance, where students may be about one to five months behind due to the pandemic (for example, North America and Europe, where students are, on average, four months behind).
 - Low-income prepandemic-challenged systems, with very low levels of pre-COVID-19 learning, where students may be about three to eight months behind due to the pandemic (for example, sub-Saharan Africa, where students are on average six months behind).
 - Pandemic-affected middle-income systems, with moderate levels of pre-COVID-19 learning, where students may be nine to 15 months behind (for example, Latin America and South Asia, where students are, on average, 12 months behind).

¹ Jacobus Cilliers and Shardul Oza, "What did children do during school closures? Insights from a parent survey in Tanzania," Research on Improving Systems of Education (RISE), May 19, 2021.

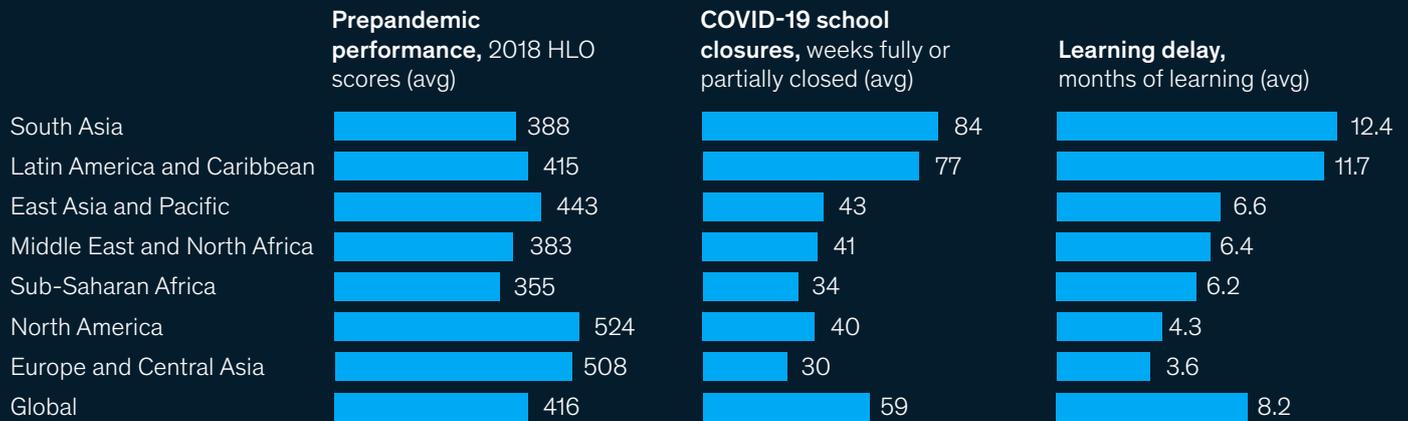
² Noam Angrist et al., "Measuring human capital using global learning data," *Nature*, March 2021, Volume 592.

- The pandemic also increased inequalities within systems. For example, it widened gaps between majority Black and majority White schools in the United States and increased preexisting urban-rural divides in Ethiopia.
- Beyond learning, the pandemic has had broader social and emotional impacts on students globally—with rising mental-health concerns, reports of violence against children, rising obesity, increases in teenage pregnancy, and rising levels of chronic absenteeism and dropouts.
- Lower levels of learning translate into lower future earnings potential for students and lower economic productivity for nations. By 2040, the economic impact of pandemic-related learning delays could lead to annual losses of \$1.6 trillion worldwide, or 0.9 percent of total global GDP.
- School systems can respond across multiple horizons, tailoring their strategies based upon preexisting educational performance, the depth and breadth of learning delays, and system capacity and resources:
 - Resilience: Safely reopen schools for in-person learning while ensuring resilience for future disruptions.
 - Reenrollment: Encourage students, families, and teachers to reengage with learning in effective learning environments.
 - Recovery: Support students as they recover from the academic and social-emotional impacts of the pandemic, starting with an understanding of each student's needs.
 - Reimagining: Recommit to quality education for every child, doubling down on the fundamentals of educational excellence and innovating to adapt.



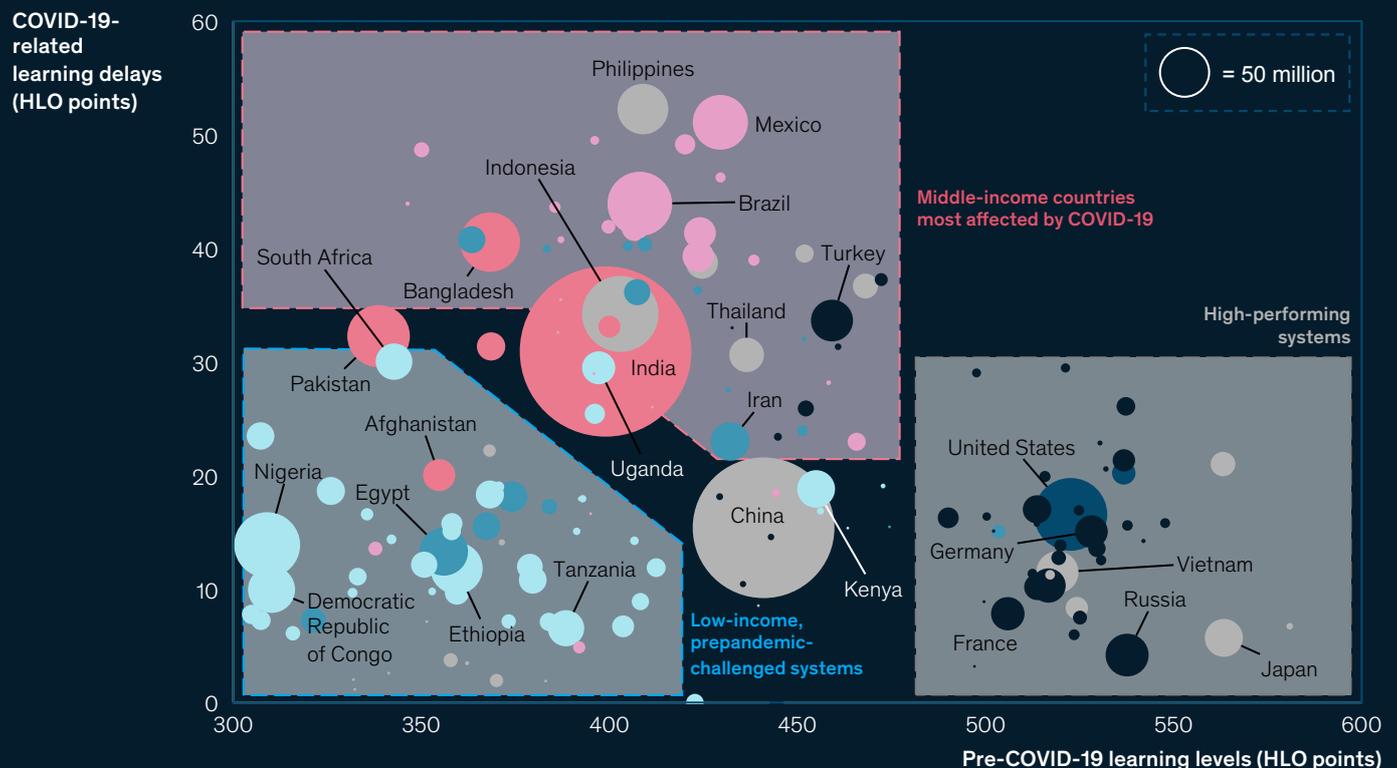
The state of global education, before and during COVID-19

The pandemic has had a wide-ranging impact on student learning and well-being, which in turn will have a long-lasting effect on individuals and on economies.



The primary challenge for some countries may be fixing underlying pre-COVID-19 gaps; for others, it may be addressing new gaps.

Education system performance, as of Jan 31, 2022



Priorities for school systems

Resilience
Safely reopen schools for in-person learning while ensuring resilience for future disruptions

Reenrollment
Encourage students, families, and teachers to reengage with learning in effective learning environments

Recovery
Support students as they recover from the academic and social-emotional impacts of the pandemic, starting with an understanding of each student's needs

Reimagining
Recommit to quality education for every child, doubling down on the fundamentals of educational excellence and innovating to adapt





In some parts of the world, students, parents, and teachers may be experiencing a novel feeling: cautious optimism. After two years of disruptions from COVID-19, the overnight shift to online and hybrid learning, and efforts to safeguard teachers, administrators, and students, cities and countries are seeing the first signs of the next normal. Masks are coming off. Events are being held in person. Extracurricular activities are back in full swing.

These signs of hope are counterbalanced by the lingering, widespread impact of the pandemic. While it's too early to catalog all of the ways students have been affected, we are starting to see initial indications of the toll COVID-19 has taken on learning around the world. Our analysis of available data found no country was untouched, but the impact varied across regions and within countries. Even in places with effective school systems and near-universal connectivity and device access, learning delays were significant, especially for historically vulnerable populations.¹ In many countries that had poor education outcomes before the pandemic, the setbacks were even greater. In those countries, an even more ambitious, coordinated effort will likely be required to address the disruption students have experienced.

Our analysis highlights the extent of the challenge and demonstrates how the impact of the pandemic on learning extends across students, families, and entire communities. Beyond the direct effect on students, learning delays have the potential to affect economic growth: by 2040, according to McKinsey analysis, COVID-19-related unfinished learning could translate into \$1.6 trillion in annual losses to the global economy.

Acting decisively in the near term could help to address learning delays as well as the broader social, emotional, and mental-health impact on students. In mobilizing to respond to the pandemic's effect on student learning and thriving, countries also may need to reassess their education systems—what has been working well and what may need to be reimagined in light of the past two years. Our hope is that this article's analysis provides a potential starting point for dialogue as nations seek to reinvigorate their education systems.

¹ Emma Dorn, Bryan Hancock, Jimmy Sarakatsannis, and Ellen Viruleg, "COVID-19 and education: An emerging K-shaped recovery," McKinsey, December 14, 2021.

Gauging the pandemic's widespread impact on education

One of the challenges in assessing the global effect of the pandemic on learning is the lack of data. Comparative international assessments mostly cover middle- to high-income countries and have not been carried out since the beginning of the pandemic. The next Program for International Student Assessment (PISA), for example, was delayed until 2022.² Similarly, many countries had to cancel or defer national assessments. As a result, few nations have a complete data set, and many have no assessment data to indicate relative learning before and since school closures. Accordingly, our methodology used available data augmented by informed assumptions to get a directional picture of the pandemic's effects on the scholastic achievement and well-being of students.

The pandemic's impact on student learning

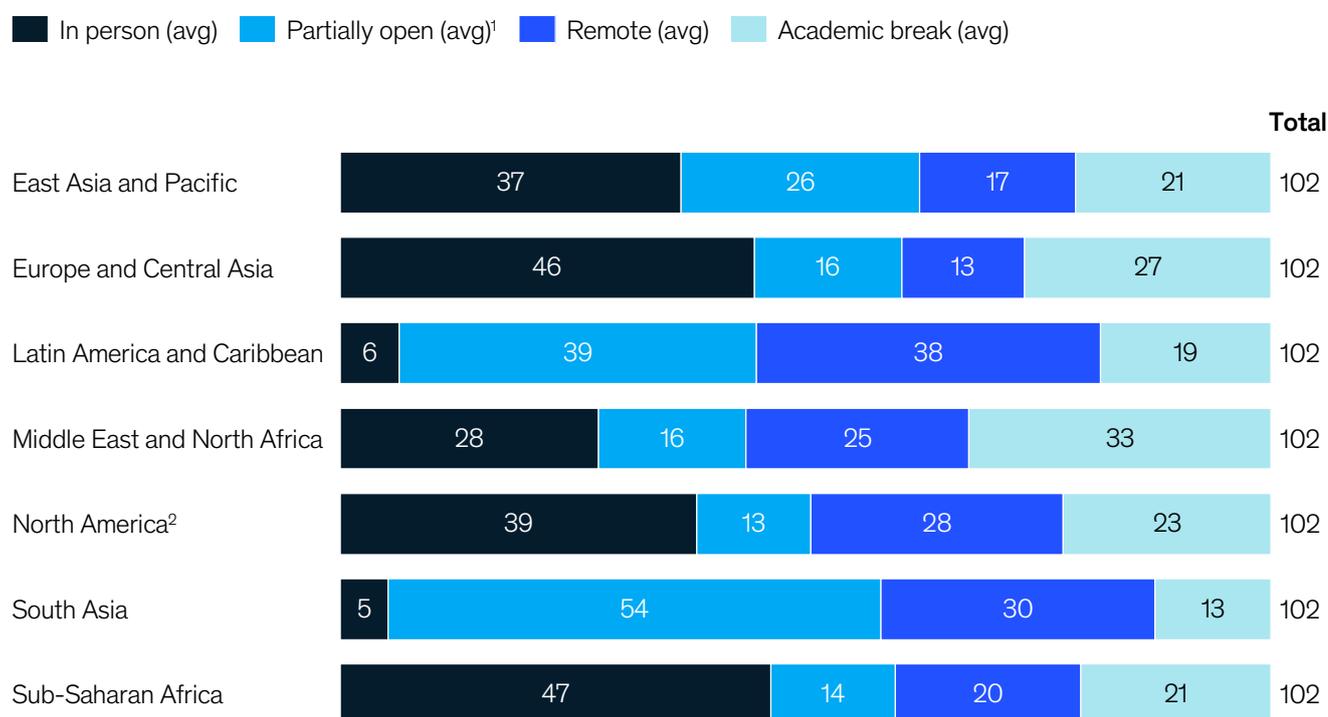
We evaluated the potential effect of the pandemic on student learning by multiplying the amount of time school was disrupted in each country by the estimated effectiveness of the schooling students received during disruptions.

The duration of school closures ran the gamut. During the 102-week period we studied (from the onset of COVID-19 to January 2022), school buildings in Latin America, including the Caribbean, and South Asia were fully or partially closed for 75 weeks or more, while those in Europe and Central Asia were fully or partially closed for an average of 30 weeks (Exhibit 1). Schools in some regions began reopening a few months into the pandemic, but as of January 2022, more than a quarter of the world's student population resided in school systems where schools were not yet fully open.

Exhibit 1

We used UNESCO data to measure educational disruption across the globe.

Number of school weeks by type of learning, Feb 16, 2020–Jan 31, 2022



Note: Figures may not sum, because of rounding.

¹ "Partially open" in the United States means schools were partially in person and partially remote (hybrid). In other countries, "partially open" means schools are: (a) open in certain regions and closed in others; and/or (b) open for some grades, levels, or age groups and closed for others; and/or (c) open with reduced in-person class time, combined with distance learning (hybrid approach).

² For the United States, our team used Burbio's school-opening tracker to get a more accurate view of school closure status.

Source: Burbio; UNESCO

² "PISA," OECD, accessed March 30, 2022.

Remote and hybrid learning similarly varied widely across and within countries. Some students were supported by internet access, devices, learning management systems, adaptive learning software, live videoconferencing with teachers and peers, and home environments with parents or hired professionals to support remote learning. Others had access to radio or television programs, paper packages, and text messaging. Some students may not have had access to any learning options.³ We used the World Bank’s estimates on “mitigation effectiveness” by country income level to account for different levels of access to learning tools and quality through the pandemic (see the forthcoming methodological appendix for more details).

Our model suggests that in the first 23 months since the start of the pandemic, students around the world may have lost about eight months of learning, on average, with meaningful disparities across and within regions and countries. For example, students in South Asia, Latin America, and the Caribbean may be more than a year behind where they would have been absent the pandemic. In North America and Europe, students might be an average of four months behind (Exhibit 2).

Exhibit 2

Students in some regions may be more than a year behind, while in others, they may lag by four to seven months.

Estimated months of learning delay by region, Feb 16, 2020–Jan 31, 2022		% of academic year ¹	
South Asia	12.4	124	
Latin America and Caribbean	11.7	117	
East Asia and Pacific	6.6	66	
Middle East and North Africa	6.4	64	
Sub-Saharan Africa	6.2	62	
North America	4.3	43	
Europe and Central Asia	3.6	36	
Global	8.2	82	

¹ Assuming 10-month school year with two months of academic break.
Source: UNESCO; World Bank

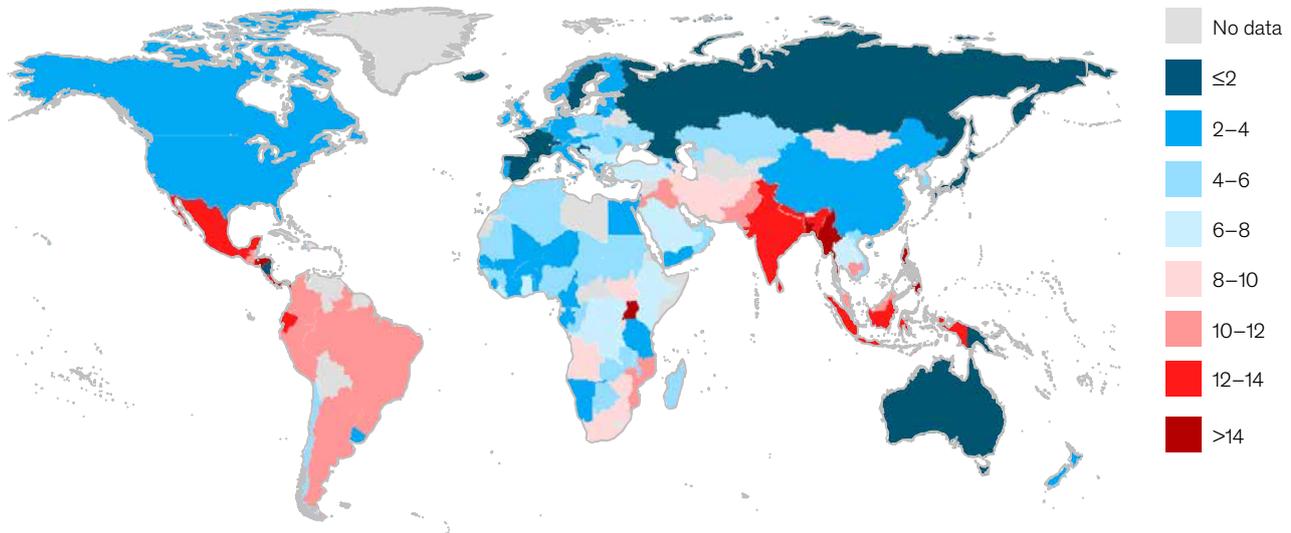
³ *What's next? Lessons on education recovery: Findings from a survey of ministries of education amid the COVID-19 pandemic*, UNESCO, UNICEF, the World Bank, and OECD, June 2021.

The regional numbers only begin to tell the full story. The greater the range of school system performance and resources across regions, the greater the variation in student experiences. Students in Japan and Australia may be less than two months behind, while students in the Philippines and Indonesia may be more than a year behind where they would have been (Exhibit 3).

Exhibit 3

Regional averages hide significant variation by country.

Estimated learning delay in months by country,¹ Feb 16, 2020–Jan 31, 2022



Note: The boundaries and names shown on this map do not imply official endorsement or acceptance by McKinsey & Company.

¹ Data set includes 159 countries.

Source: United Nations map of the world; World Bank Human Capital Index (2018)

Within countries, the impact of COVID-19 has also affected individual students differently. Wherever assessments have taken place since the onset of the pandemic, they suggest widening gaps in both opportunity and achievement. Historically vulnerable and marginalized students are at an increased risk of falling further behind.

In the United States, students in majority Black schools were half a year behind in mathematics and reading by fall 2021, while students in majority White schools were just two months behind.⁴ In Ethiopia, students in rural areas achieved under one-third of the expected learning from March to October 2020, while those in urban areas learned less than half of the expected amount.⁵ Assessments in New South Wales, Australia, detected minimal impact on learning overall, but third-grade students in the most disadvantaged schools experienced two months less growth in mathematics.⁶

⁴ "COVID-19 and education: An emerging K-shaped recovery," December 14, 2021.

⁵ *Research on Improving Systems of Education (RISE)*, "Learning inequalities widen following COVID-19 school closures in Ethiopia," blog entry by Janice Kim, Pauline Rose, Ricardo Sabates, Dawit Tibebe Tiruneh, and Tassew Woldehanna, May 4, 2021.

⁶ Leanne Fray et al., "The impact of COVID-19 on student learning in New South Wales primary schools: An empirical study," *The Australian Educational Researcher*, 2021, Volume 48.

COVID-19-related losses on top of historical inequalities

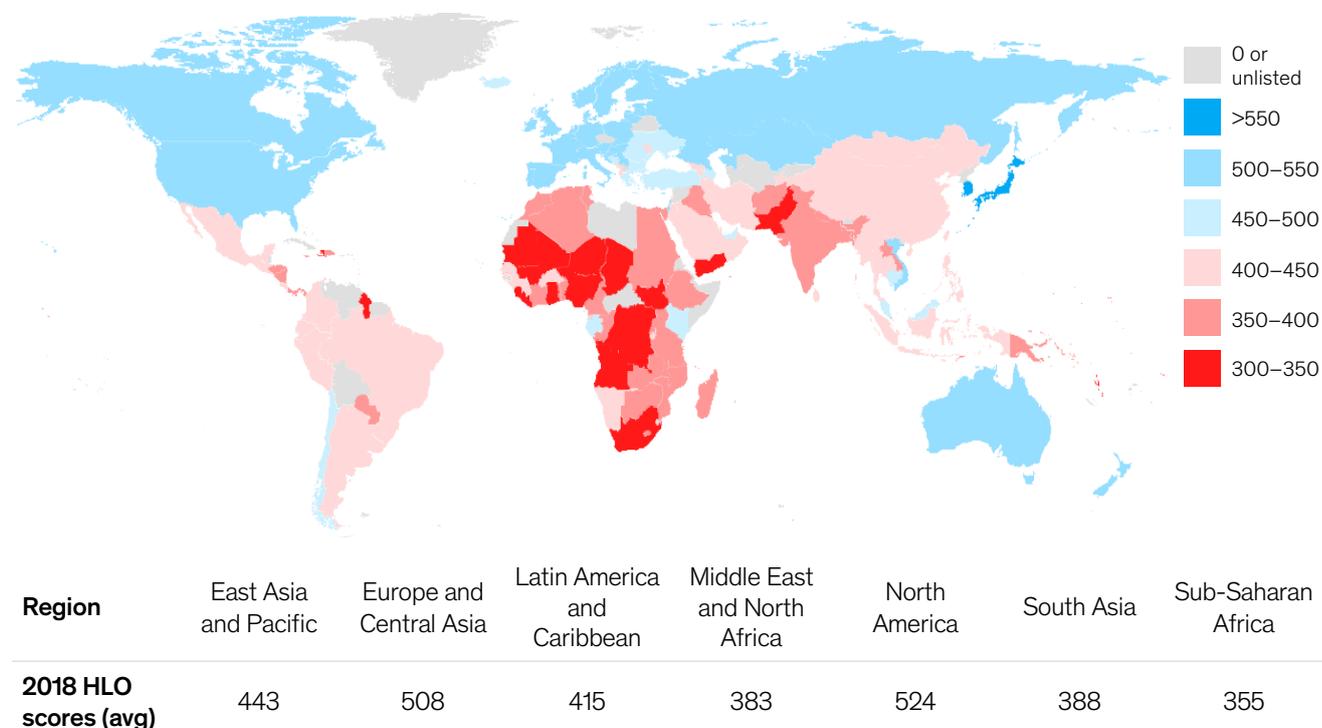
The learning crisis is not new. In the years before COVID-19, many school systems faced challenges in providing learning opportunities for many of their students. The World Bank estimates that before the pandemic, more than half of students in low- and middle-income countries were living in “learning poverty”—unable to read and understand a simple text by age ten. That number may rise as high as 70 percent due to pandemic-related school disruptions.⁷

The World Bank’s harmonized learning outcomes (HLOs) compare learning achievement and growth across countries. This measure combines multiple global student assessments into one metric, with a range of 625 for advanced attainment and 300 for minimum attainment. According to the World Bank’s 2018 HLO database, students from some countries in the Middle East, North Africa, and South Asia were several years behind their counterparts in North America and Europe before the pandemic (Exhibit 4).⁸

Exhibit 4

Even before the pandemic, students in some countries were several years behind their peers in North America and Europe.

2018 HLO scores¹



Note: The boundaries and names shown on this map do not imply official endorsement or acceptance by McKinsey & Company.

¹ Harmonized learning outcomes (HLO) is a product of the World Bank’s standardization of multiple global student assessments (eg, Program for International Student Assessment, Trends in International Mathematics and Science Study, Progress in International Reading Literacy Study, and regional tests) into one harmonized test score to enable global comparisons of student learning achievement; World Bank assumes one year of learning is 50 HLO points in high-income countries.

Source: United Nations map of the world; World Bank Human Capital Index (2018)

Students in these countries were also progressing more slowly each year in school. While students in high-income countries may have been gaining 50 HLO points in a year, students in low-income countries were gaining just 20. In other words, not much learning was happening in some countries even before the pandemic.

⁷ Joao Azevedo et al., “The state of the global education crisis: A path to recovery,” World Bank Group, December 3, 2021.

⁸ *Data Blog*, “Harmonized learning outcomes: transforming learning assessment data into national education policy reforms,” blog entry by Harry A. Patrinos and Noam Angrist, August 12, 2019.

Prepandemic learning levels and pandemic-related learning delays interacted in different ways in different countries and regions. Although each country is unique, three archetypes emerge based on the performance of education systems (Exhibit 5).

High-performing systems. Countries in this archetype generally had higher pre-COVID-19 learning levels. Systems had more capacity for remote learning, and school buildings remained closed for shorter time periods.⁹ Data suggest that after the initial shock of the pandemic in 2020, learning delays increased only moderately with subsequent school closures in the 2021–22 school year. Some high-income countries seem to show little evidence of decreased learning overall. According to the Australian National Assessment Program—Literacy and Numeracy (NAPLAN), the COVID-19 pandemic did not have a statistically significant impact on average student literacy and numeracy levels, even in Victoria, where learning was remote for more than 120 days.¹⁰ However, in many high-income countries, the impact of the pandemic on learning remained significant. Assessments of student learning in the United States in fall 2021 suggested students had fallen four months behind in mathematics and three months behind in reading.¹¹ Inequalities in learning also increased within many of these countries, with historically marginalized students most affected.

Lower-income, prepandemic-challenged systems. This archetype consists of mostly low-income and lower-middle-income countries with very low levels of pre-COVID-19 learning. When the pandemic struck, school buildings closed for varying periods of time,¹² with limited options for remote learning. In Tanzania, for example, schools were closed for 15 weeks, and during this period, just 6 percent of households reported that their children listened to radio lessons, 5 percent watched TV lessons, and fewer than 1 percent accessed educational programs on the internet.¹³ Across the analyzed time period, schools in sub-Saharan Africa were fully open for more weeks, on average, than schools in any other region. As a result, the pandemic's impact on learning was relatively muted, even though many of these systems faced challenges with effective remote learning.¹⁴

These relatively smaller pandemic learning delays are likely due in part to the limited progress students were making in schools before COVID-19.¹⁵ If students weren't progressing scholastically when schools were open, closures were likely to have less impact. In Tanzania before the pandemic, three-quarters of students in grade three could not read a basic sentence.¹⁶

Pandemic-affected middle-income systems. School systems in Latin American and South Asian countries had low to moderate performance before COVID-19. Many middle-income countries in this group did have some capacity to plan and roll out remote-learning options, especially in urban areas.¹⁷ However, pandemic-related disruptions caused widespread school closures for extended periods of time—more than 50 weeks in some countries.¹⁸ The resulting learning delays may represent a true crisis for major economies such as India, Indonesia, and Mexico, where students are more than a year behind, on average.

While some students may have just learned more slowly than they would have absent the pandemic, others in this archetype may have actually slipped backward. A study by the Azim Premji Foundation suggests that as early as January 2021, more than 90 percent

⁹ "Education: From disruption to recovery," UNESCO, accessed March 11, 2022.

¹⁰ "Highlights from Victorian preliminary results in NAPLAN 2021," Victoria state government, August 26, 2021; Adam Carey, Melissa Cunningham, and Anna Prytz, "Children have suffered enormously': School closures leave experts divided," *The Age*, Melbourne, July 25, 2021.

¹¹ "COVID-19 and education: An emerging K-shaped recovery," December 14, 2021.

¹² "Education: From disruption to recovery," UNESCO, accessed March 11, 2022.

¹³ Jacobus Cilliers and Shardul Oza, "What did children do during school closures? Insights from a parent survey in Tanzania," Research on Improving Systems of Education (RISE), May 19, 2021.

¹⁴ A report of six countries in Africa, for example, found limited impact of the pandemic on already-low student outcomes. For more information, see "MILO: Monitoring impacts on learning outcomes," UNESCO, accessed March 11, 2022.

¹⁵ *World Bank blogs*, "Harmonized learning outcomes: Transforming learning assessment data into national education policy reforms," blog entry by Harry A. Patrinos and Noam Angrist, August 12, 2019.

¹⁶ "What did children do during school closures?," May 19, 2021.

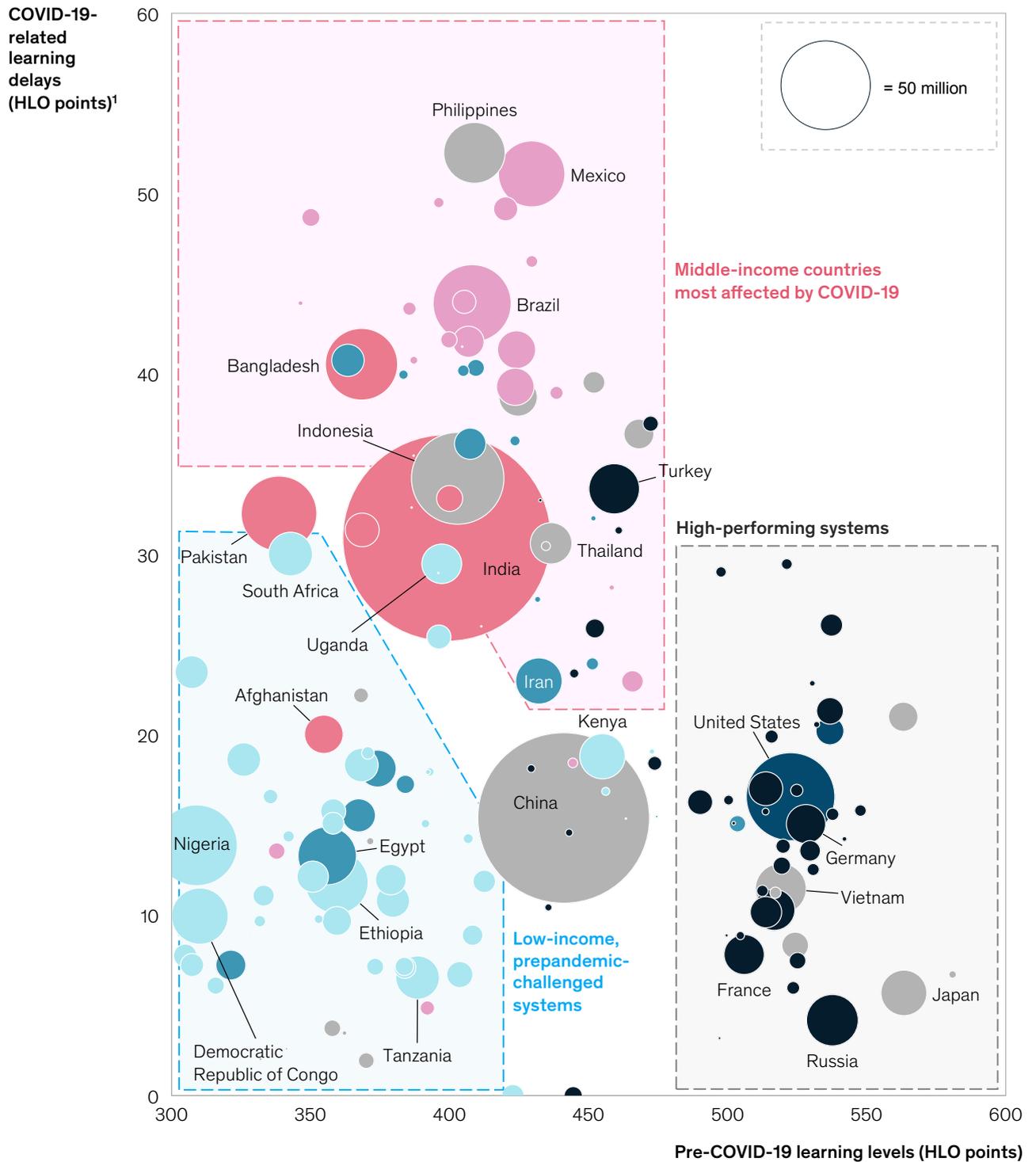
¹⁷ "Responses to Educational Disruption Survey (REDS)," UNESCO, accessed March 11, 2022.

¹⁸ "Education: From disruption to recovery," UNESCO, accessed March 11, 2022.

The primary challenge for some countries may be fixing underlying pre-COVID-19 gaps; for others, it may be addressing new gaps.

Education system performance, as of Jan 31, 2022

- Europe and Central Asia
- North America
- Middle East and North Africa
- Sub-Saharan Africa
- Latin America and Caribbean
- South Asia
- East Asia and Pacific
- Size of bubble = relative student population in millions, 2018



¹ Where 50 harmonized learning outcomes (HLO) points is a year of learning in a high-income country. Based on data from Feb 16, 2020, to Jan 31, 2022. Source: UNESCO; World Bank

of students assessed in India have lost at least one language ability (such as reading words or writing simple sentences), while more than 80 percent lost a math ability (for example, identifying single- and double-digit numbers or naming shapes).¹⁹ This pattern could be particularly challenging, since higher-order skills are increasingly important in middle-income countries with rising levels of workplace automation. McKinsey's "Jobs lost, jobs gained" report²⁰ suggests India may need 34 million to 100 million more high school graduates by 2030 to fill workplace demands. The pandemic has put existing high school graduation rates at risk, let alone the vast expansion required to meet future demand for workers.

The pandemic's effects beyond learning

Much of the dialogue around school systems focuses on educational achievement, but schools offer more than academic instruction. A school system's contributions may include social interaction; an opportunity for students to build relationships with caring adults; a base for extracurricular activities, from the arts to athletics; an access point for physical- and mental-health services; and a guarantee of balanced meals on a regular basis. The school year may also enable students to track their progress and celebrate milestones. When schools had to close for extended periods of time or move to hybrid learning, students were deprived of many of these benefits.

The pandemic's impact on the social-emotional and mental and physical health of students has been measured even less than its impact on academic achievement, but early indications are concerning. Save the Children reports that 83 percent of children and 89 percent of parents globally have reported an increase in negative feelings since the pandemic began.²¹ In the United States, one in three parents said they were very or extremely worried about their child's mental health in spring 2021, with rising reported levels of student anxiety, depression, social withdrawal, and lethargy.²² Parents of Black and Hispanic students, the segments most affected by academic unfinished learning, also reported higher rates of concern about their student's mental health and engagement with school. A UK survey found 53 percent of girls and 44 percent of boys aged 13 to 18 had experienced symptoms or trauma related to COVID-19.²³ In Bangladesh, a cross-sectional study revealed that 19.3 percent of children suffered moderate mental-health impacts, while 7.2 percent suffered from extreme mental-health effects.²⁴ Reports of violence against children rose in many countries.²⁵ The pandemic affected physical health as well. Studies from the United States²⁶ and the United Kingdom²⁷ show rising rates of childhood obesity. In Latin America and the Caribbean, more than 80 million children stopped receiving hot meals.²⁸ In Uganda, a record number of monthly teenage pregnancies—more than 32,000—were recorded from March 2020 to September 2021.²⁹

Some students may never return to formal schooling at all. Even in high-income systems, levels of chronic absenteeism are rising, and some students have not reengaged in school. In the United States, 1.7 million to 3.3 million eighth to 12th graders may drop out of school because of the pandemic. In low- and middle-income countries, the situation could be far worse. Up to one-third of Ugandan students may not return to the classroom. This pattern is in line with past historical crises involving school closures. After the Ebola pandemic, 13 percent of students in Sierra Leone and 25 percent of students in Liberia dropped out of school, with

¹⁹ *Loss of learning during the pandemic*, Azim Premji Foundation, February 2021.

²⁰ For more information, see "Jobs lost, jobs gained: What the future of work will mean for jobs, skills, and wages," McKinsey Global Institute, November 28, 2017.

²¹ *The hidden impact of COVID-19 on child protection and wellbeing*, Save the Children International, September 2020.

²² Emma Dorn, Bryan Hancock, Jimmy Sarakatsannis, and Ellen Viruleg, "COVID-19 and education: The lingering effects of unfinished learning," McKinsey, July 27, 2021.

²³ *Report 1: Impact of COVID-19 on young people aged 13-24 in the UK - preliminary findings*, PsyArXiv, January 20, 2021.

²⁴ Rajon Banik et al., "Impact of COVID-19 pandemic on the mental health of children in Bangladesh: A cross-sectional study," *Children and Youth Services Review*, October 2020, Volume 117.

²⁵ "Publications," Young Lives, accessed March 22, 2022.

²⁶ Roger Riddell, "CDC: Child obesity jumped during COVID-19 pandemic," *K-12 Dive*, September 24, 2021.

²⁷ *The annual report of Her Majesty's chief inspector of education, children's services and skills 2020/21*, Ofsted, December 7, 2021.

²⁸ "We can move to online learning, but not online eating," United Nations World Food Program, March 26, 2020.

²⁹ "Uganda overwhelmed by 32,000 monthly teen pregnancies," *Yeni Şafak*, December 12, 2021.

girls and low-income students most affected.³⁰ Among the poorest primary-school students in Sierra Leone, dropout rates increased by more than 60 percent.³¹ This may result in reduced employment opportunities and lifelong earnings potential for many of these students.

The potential of long-term economic damage

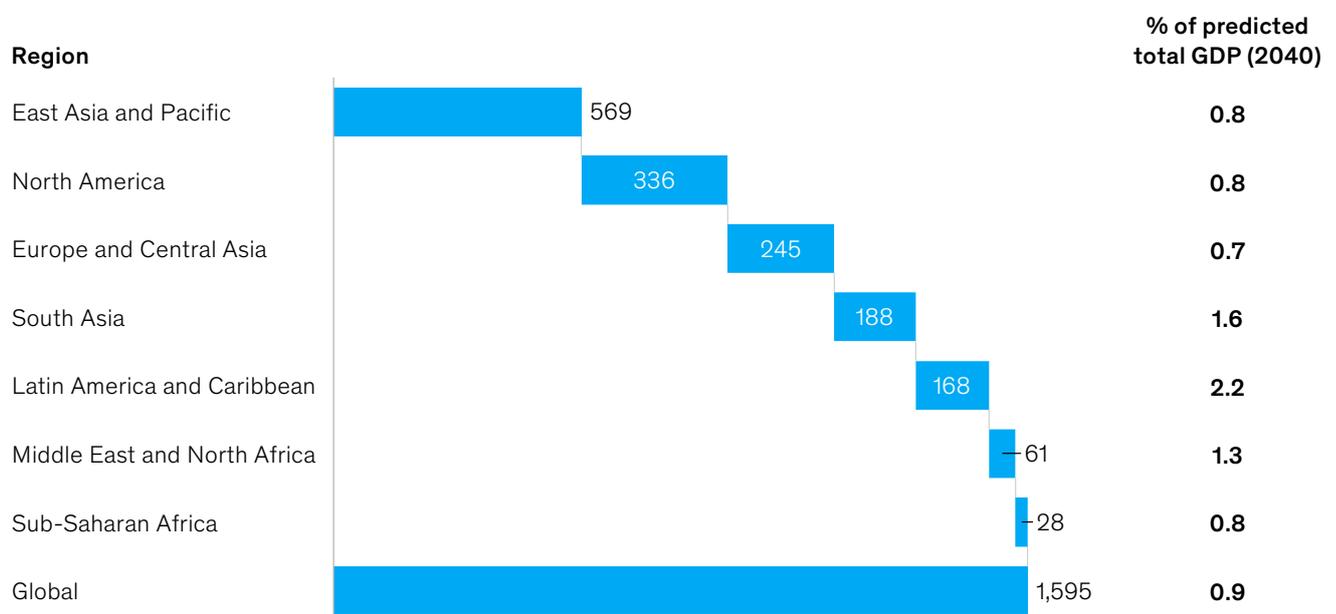
Education can affect not just an individual's future earnings and well-being but also a country's economic growth and vitality. Research suggests higher levels of education lead to increased labor productivity and enhance an economy's capacity for innovation. Unless the pandemic's impact on student learning can be mitigated and students can be supported to catch up on missed learning, the global economy could experience lower GDP growth over the lifetime of this generation.

We estimate by 2040, unfinished learning related to COVID-19 could translate to annual losses of \$1.6 trillion to the global economy, or 0.9 percent of predicted total GDP (Exhibit 6).

Exhibit 6

Actions taken now to support students in catching up could help avoid a global economic loss of \$1.6 trillion per year by 2040.

Annual GDP loss predicted by 2040 by region, \$ billions¹



¹ Based on learning delay as of January 31, 2022.

Source: Eric A. Hanushek and Ludger Woessmann, "The role of cognitive skills in economic development," *Journal of Economic Literature*, 2008, Volume 46, Number 3; UNESCO; World Bank; World Bank GDP Capital Growth Rate; World Bank Country Population Growth Rate

Although the total dollar amount of forgone GDP is highest in the largest economies of the world (encompassing East Asia, Europe, and North America), the relative impact is highest in regions with the greatest learning delays. In Latin America and the Caribbean, pandemic-related school closures could result in losses of more than 2 percent of GDP annually by 2040 and in subsequent years.

Economic impact could be affected further if students don't return to school and cease learning altogether.

³⁰ *The socio-economic impacts of Ebola in Liberia*, World Bank, April 15, 2015; *The socio-economic impacts of Ebola in Sierra Leone*, World Bank, June 15, 2015.

³¹ William C. Smith, "Consequences of school closure on access to education: Lessons from the 2013-2016 Ebola pandemic," *International Review of Education*, April 2021, Volume 67.

Identifying potential solutions

The response to the learning crisis will likely vary from country to country, based upon preexisting educational performance, the depth and breadth of learning delays, and system resources and capacity to respond. That said, all school systems will likely need to plan across multiple horizons:

Resilience

As 2022 began, more than 95 percent of school systems around the world were at least partially open for traditional in-person learning.³² That progress is encouraging but tenuous. Many systems reopened only to close down again when another wave of COVID-19 caused additional disruptions. Even within partially open systems, not all students have access to in-person learning, and many are still attending partial days or weeks. Building resilience could mean ensuring protocols are in place for safe and supportive in-person learning, and ensuring plans are in place to provide remote options that support the whole child at the system, school, and student levels in response to future crises. School systems can also benefit by creating the flexibility to change policies and procedures as new data and circumstances arise.

Reenrollment

Opening buildings and embedding effective safety precautions have been challenging for many systems, but ensuring students and teachers actually turn up and reengage with learning is perhaps even more difficult. Even where in-person learning has resumed, many students have not returned or remain chronically absent.³³ Families may still have safety worries about in-person learning. Some students may have found jobs and now rely on that income.³⁴ Others may have become pregnant or now act as caregivers at home.³⁵ Still others may feel so far behind academically or so disconnected from the school environment at a social level that a return feels impossible. A multipronged approach could be helpful to understand the barriers students may face, how those could differ across student segments, and ways to support all students in continuing their educational journeys.

Systems could consider a tiered approach to support reengagement. Tier-one interventions could be rolled out for all students and include both improving school offerings for families and students and communicating about enhanced services. This might involve back-to-school awareness campaigns at the national and community levels featuring respected community members, clear communication of safety protocols, access to free food and other basic needs on campuses, and the promotion of a positive school climate with deep family engagement.

Tier-two interventions, which could be directed at students who are at heightened risk of not returning to school, may involve more targeted support. These efforts might include community events and canvassing to bring school buses or mobile libraries to historically marginalized neighborhoods, phone- or text-banking aimed at students who have not returned to school, or summer opportunities (including fun reorientation activities) to convince students to return to the school campus. At the student level, it could include providing some groups of students with deeper learning or social-emotional recovery services to help them reintegrate into school.

Tier-three interventions encompass more intensive and specialized support. These efforts may include visits to the homes of individual students or new educational environments tailored to student needs—for example, night schools for students who need to complete high school while working.

³² "Responses to Educational Disruption Survey (REDS)," UNESCO, 2022, accessed March 11, 2022.

³³ Indira Dammu, Hailly T.N. Korman, and Bonnie O'Keefe, *Missing in the margins 2021: Revisiting the COVID-19 attendance crisis*, Bellwether Education Partners, October 21, 2021.

³⁴ Elias Biryabarema, "Student joy, dropout heartache as Uganda reopens schools after long COVID-19 shutdown," Reuters, January 10, 2022.

³⁵ *Brookings Education Plus Development*, "What do we know about the effects of COVID-19 on girls' return to school?," blog entry by Erin Ganju, Christina Kwauk, and Dana Schmidt, September 22, 2021.

Recovery

Once students are back in school, many may need support to recover from the academic and social-emotional effects of the pandemic. Indeed, while academic recovery seems daunting, supporting the mental-health and social-emotional needs of students may end up being the bigger challenge.³⁶ This process starts with a recognition that each child is unique and that the pandemic has affected different students in different ways. Understanding each student's situation, in terms of both learning and well-being, is important at the classroom level, with teachers and administrators trained to interpret cues from students and refer them to more intensive support when necessary. Assessments will likely also be needed at the school and system levels to plan the response.

With an understanding of both the depth and breadth of student needs, systems and schools could consider three levers of academic acceleration: more time, more dedicated attention, and more focused content. Implementation of these levers will likely vary by context, but the overall goals are the same: to overcome both historical gaps and new COVID-19-related losses, and to do so across academic and whole-child indicators.

In high-income countries, digital formative assessments could help determine in real time what students know, where they may have gaps, and what the next step could be for each child. More relational tactics can be incorporated alongside digital assessments, such as teachers taking the time to connect with each child around a simple reading assessment, which may rebuild relationships and connectivity while assessing student capabilities. Schools could also consider universal mental-health diagnostics and screeners, and train teachers and staff to recognize the signs of trauma in students.

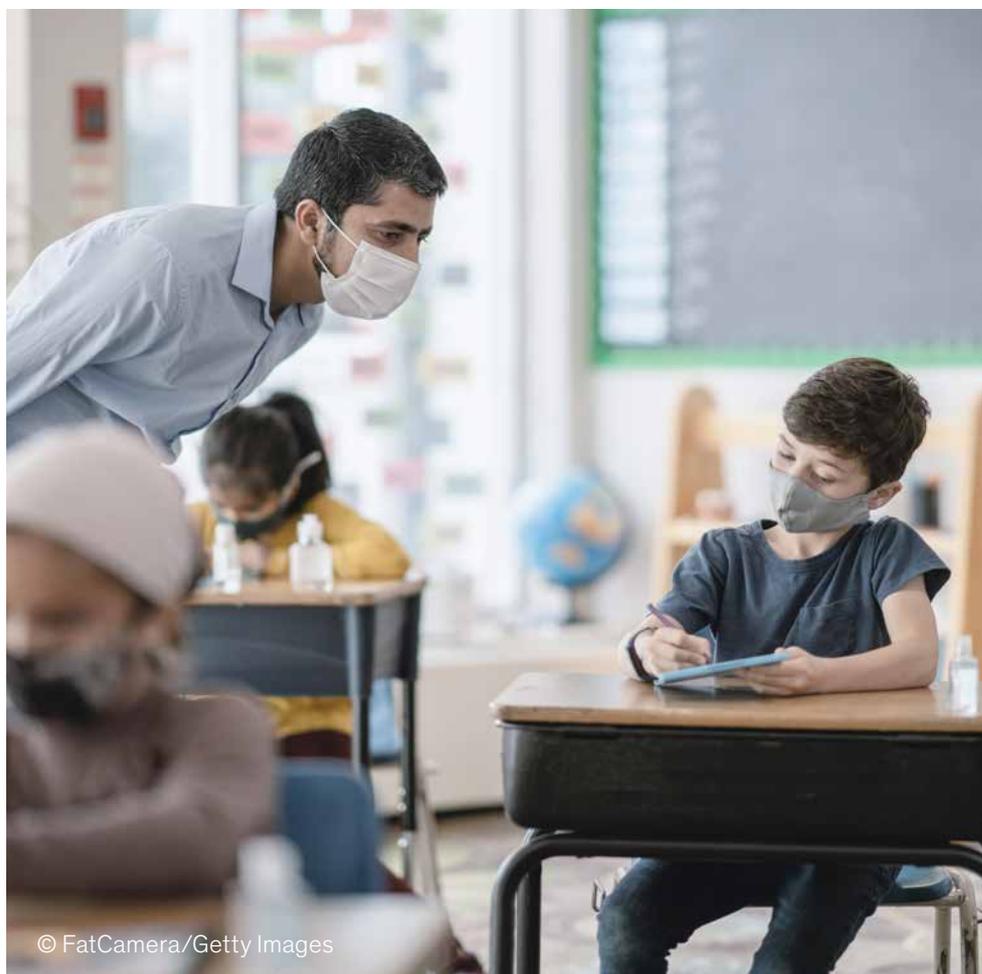
Once schools have identified students who need academic support, proven, evidence-based solutions could support acceleration in high-income school systems. High-dosage tutoring, for example, could enable students to learn one to two additional years of mathematics in a single year. Delivered three to five times a week by trained college graduates during the school day on top of regular math instruction, this type of tutoring is labor and capital intensive but has a high return on investment. Acceleration academies, which provide 25 hours of targeted instruction in reading to small groups of eight to 12 students during vacations, have helped students gain three months of reading in just one week. Exposing students to grade-level content and providing them with targeted supports and scaffolds to access this content has improved course completion rates by two to four times over traditional "re-teaching" remediation approaches.

With an understanding of both the depth and breadth of student needs, systems and schools could consider three levers of academic acceleration: more time, more dedicated attention, and more focused content.

³⁶ *Protecting youth mental health: The U.S. surgeon general's advisory*, U.S. Department of Health and Human Services, 2021.

In low- and middle-income countries, where learning delays may have been much greater and where the financial and human-capital resources for education can be more limited, different implementation approaches may be required. Simple, fast, inexpensive, and low-stakes evaluations of student learning could be carried out at the classroom level using pen and paper, oral assessments, and mobile data collection, for example.

Solutions for supporting the acceleration of student learning in these contexts could start with ensuring foundational literacy and numeracy (FLN), prioritizing essential standards and content. Evidence-based teaching methods could speed up learning; for example, Pratham's Teaching at the Right Level (TaRL) approach—which groups children by learning needs, rather than by age or grade, and dedicates time to basic skills with continual reassessment—has led to improvements of more than a year of learning in classrooms and summer camps.³⁷ Even with the application of existing approaches, more time in class may be required—with options to extend the school year or school day to support students. Widespread tutoring may not be realistic in some countries, but peer-to-peer tutoring and cross-grade mentoring and coaching could supplement in-class efforts.³⁸



³⁷ Improvements of 0.2 to 0.7 standard deviations; assuming that one year of learning ranges from 0.2 of a standard deviation in low income countries and 0.5 of a standard deviation in high income countries, in accordance with World Bank assumptions; João Pedro Azevedo et al., *Simulating the potential impacts of COVID-19 school closures on schooling and learning outcomes*, World Bank working paper 9284, June 2020; David K. Evans and Fei Yuan, *Equivalent years of schooling*, World Bank working paper 8752, February 2019.

³⁸ *COVID-19 response—remediation: Helping students catch up on lost learning, with a focus on closing equity gaps*, UNESCO, July 2020.

Reimagining

In addition to accelerating learning in the short term, systems can also use this moment to consider how to build better systems for the future. This may involve both recommitting to the core fundamentals of educational excellence and reimagining elements of instruction, teaching, and leadership for a post-COVID-19 world.³⁹ A lot of ground could be covered by rolling out existing evidence-based interventions at scale—recommitting to core literacy and numeracy skills, high-quality instructional materials, job-embedded teacher coaching, and effective performance management. Recommitting to these basics, however, may not be enough. Systems can also innovate across multiple dimensions: providing whole-child supports, using technology to improve access and quality, moving toward competency-based learning, and rethinking teacher preparation and roles, school structures, and resource allocation.

For example, many systems are reemphasizing the importance of caring for the whole child. Integrating social-emotional learning for all students, providing trauma-informed training for teachers and staff,⁴⁰ and providing counseling and more intensive support on and off campus for some students could provide supportive schooling environments beyond immediate crisis support.⁴¹ A UNESCO survey suggests that 78 percent of countries offered psychosocial and emotional support to teachers as a response to the pandemic.⁴² Looking forward, the State of California is launching a \$3 billion multiyear transition to community schools, taking an integrated approach to students' academic, health, and social-emotional needs in the context of the broader community in which those students live.⁴³

The role of education technology in instruction is another much-debated element of reimagining. Proponents believe education technology holds promise to overcome human-capital challenges to improved access and quality, especially given the acceleration of digital adoption during the pandemic. Others point out that historical efforts to harness technology in education have not yielded results at scale.⁴⁴

Numerous experiments are under way in low- and middle-income countries where human capital challenges are the greatest. Robust solar-powered tablets loaded with the evidence-based literacy and numeracy app onebillion led to learning gains of more than four months⁴⁵ in Malawi, with plans to roll out the program across the country's 5,300 primary schools.⁴⁶ NewGlobe's digital teacher guides provide scripted lesson plans on devices designed for low-infrastructure environments. In Nigeria, students using these tools progressed twice as fast in numeracy and three times as fast in literacy as their peers.⁴⁷ As new solutions are rolled out, it will likely be important to continually evaluate their impact compared with existing evidence-based approaches to retain what is working and discard that which is not.

³⁹ Jake Bryant, Emma Dorn, Stephen Hall, and Frédéric Panier, "Reimagining a more equitable and resilient K-12 education system," McKinsey, September 8, 2020.

⁴⁰ "Welcome to the trauma-informed educator training series," Mayerson Center for Safe and Healthy Children, accessed March 22, 2022.

⁴¹ "District student wellbeing services reflection tool," Chiefs for Change, January 2022.

⁴² *What's next? Lessons on education recovery*, June 2021.

⁴³ John Fensterwald, "California ready to launch \$3 billion, multiyear transition to community schools," EdSource, January 31, 2022.

⁴⁴ Jake Bryant, Felipe Child, Emma Dorn, and Stephen Hall, "New global data reveal education technology's impact on learning," McKinsey, June 12, 2020.

⁴⁵ "Helping children achieve their full potential," Imagine Worldwide, accessed March 22, 2022.

⁴⁶ "Partners and projects," onebillion.org, accessed March 22, 2022.

⁴⁷ "The EKOEXCEL effect," NewGlobe Schools, accessed March 22, 2022.

Charting a potential path forward

There is no precedent for global learning delays at this scale, and the increasing automation of the workforce advances the urgency of supporting students to catch up to—and possibly exceed—prepandemic education levels to thrive in the global economy. Systems will likely need resources, knowledge, and organizational capacity to make progress across these priorities.

Even before COVID-19, UNESCO estimated that low- and middle-income countries faced a funding gap of \$148 billion a year to reach universal preprimary, primary, and secondary education by 2030 as required by UN Sustainable Development Goal 4. As a result of the pandemic, that gap has widened to \$180 billion to \$195 billion a year.⁴⁸ Even if that funding gap were closed, the result would be increased enrollment, not improvements in learning. UNESCO estimates that just 3 percent of global stimulus funds related to COVID-19 have been directed to education, 97 percent of which is concentrated in high-income countries.⁴⁹

In many countries, shortages of teachers and administrators are just as pressing as the lack of funding. Many teachers in Uganda weren't paid during the pandemic and have found new careers.⁵⁰ Even high-income countries are grappling with teacher shortages. In the United States, 40 percent of district leaders and principals describe their current staff shortages as "severe" or "very severe."⁵¹ Fully addressing pandemic-related learning losses will require a full accounting of the cost and a long-term commitment, recognizing the critical importance of investments in education for future economic growth and stability.

Countries do not need to reinvent the wheel or go it alone. Many existing resources catalog evidence-based practices relevant to different contexts, both historical approaches and those specific to COVID-19 recovery. For high-income countries, the Education Endowment Foundation, Annenberg's EdResearch for Recovery platform, and the Collaborative for Student Success resources for states and districts in the United States provide research-based guidance on solutions.

In many countries, shortages of teachers and administrators are just as pressing as the lack of funding.

⁴⁸ *Act now: Reduce the impact of COVID-19 on the cost of achieving SDG 4*, UNESCO, September 2020.

⁴⁹ "Uneven global education stimulus risks widening learning disparities," UNESCO, October 19, 2021.

⁵⁰ Alon Mwesigwa, "I'll never go back': Uganda's schools at risk as teachers find new work during Covid," *Guardian*, September 30, 2021.

⁵¹ Mark Lieberman, "How bad are school staffing shortages? What we learned by asking administrators," *EducationWeek*, October 12, 2021.

For low- and middle-income countries, materials developed in partnership with UNESCO, UNICEF, and the World Bank include tools to support FLN, Continuous and Accelerated Learning, and teacher capacity (Teach and Coach). UNESCO's COVID-19 Response Toolkit provides guidance across income levels. Collaboration across schools, regions, and countries could also promote knowledge sharing at a time of evolving needs and practices—from webinars to active communities of practice and shared-learning collaboratives.

Organizing for the response across these multiple levels is a challenge even for the most well-resourced and sophisticated systems. Our recent research found 80 percent of government efforts to transform performance don't fully meet their objectives.⁵² Success will likely require a relentless focus on implementation and execution, with multiple feedback loops to achieve continuous learning and improvement.

The COVID-19 pandemic was indisputably a global health and economic crisis. Our research suggests it also caused an education crisis on a scale never seen before.

The pandemic also showed, however, that innovation and collaboration can arise out of hardship. The global education community has an opportunity to come together to respond, bringing evidence-based practices at scale to every classroom. Working together, donors and investors, school systems and districts, principals and teachers, and parents and families can ensure that the students who endured the pandemic are not a lost generation but are instead defined by their resilience.

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⁵² "Delivering for citizens: How to triple the success rate of government transformations," McKinsey, May 31, 2018.

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