

Executive summary

Spark & Sustain: How school systems can improve learning at scale

Student achievement is stagnating globally, and millions of children are not learning, but meaningful change is possible by taking lessons from systems that are beating the odds.



It is more important today than ever before to improve the quality and equity of education systems around the world. Automation is expected to increase demand for highly educated workers, creating a greater need for technological, socioemotional, and cognitive skills. The rise of generative AI is accelerating these workforce transitions. In addition to preparing students for the workforce, education systems are increasingly being asked to participate in resolving broader societal issues, from rising mental health challenges among young people¹ to political polarization² to combating climate change.³

Student learning improvements are not keeping up with these demands. More children than ever are in school, but many are not mastering basic skills. The World Bank estimates that seven in ten students in low- and middle-income countries are living in “learning poverty,” unable to read a simple text by the end of elementary school. The same is true for nearly nine in ten students in sub-Saharan Africa. This means that the majority of the world’s children are born into education systems where they will not learn to read by the end of elementary school.⁴

Much of the global discussion about educational performance revolves around a small subset of mostly high-income countries that get relatively high scores on the three major assessments: the Programme for International Assessment (PISA), the Trends in International Mathematics and Science Study (TIMSS), and the Progress in International Reading Literacy Study (PIRLS). In our schema below, we classify those countries as having “good” or “great” performance.

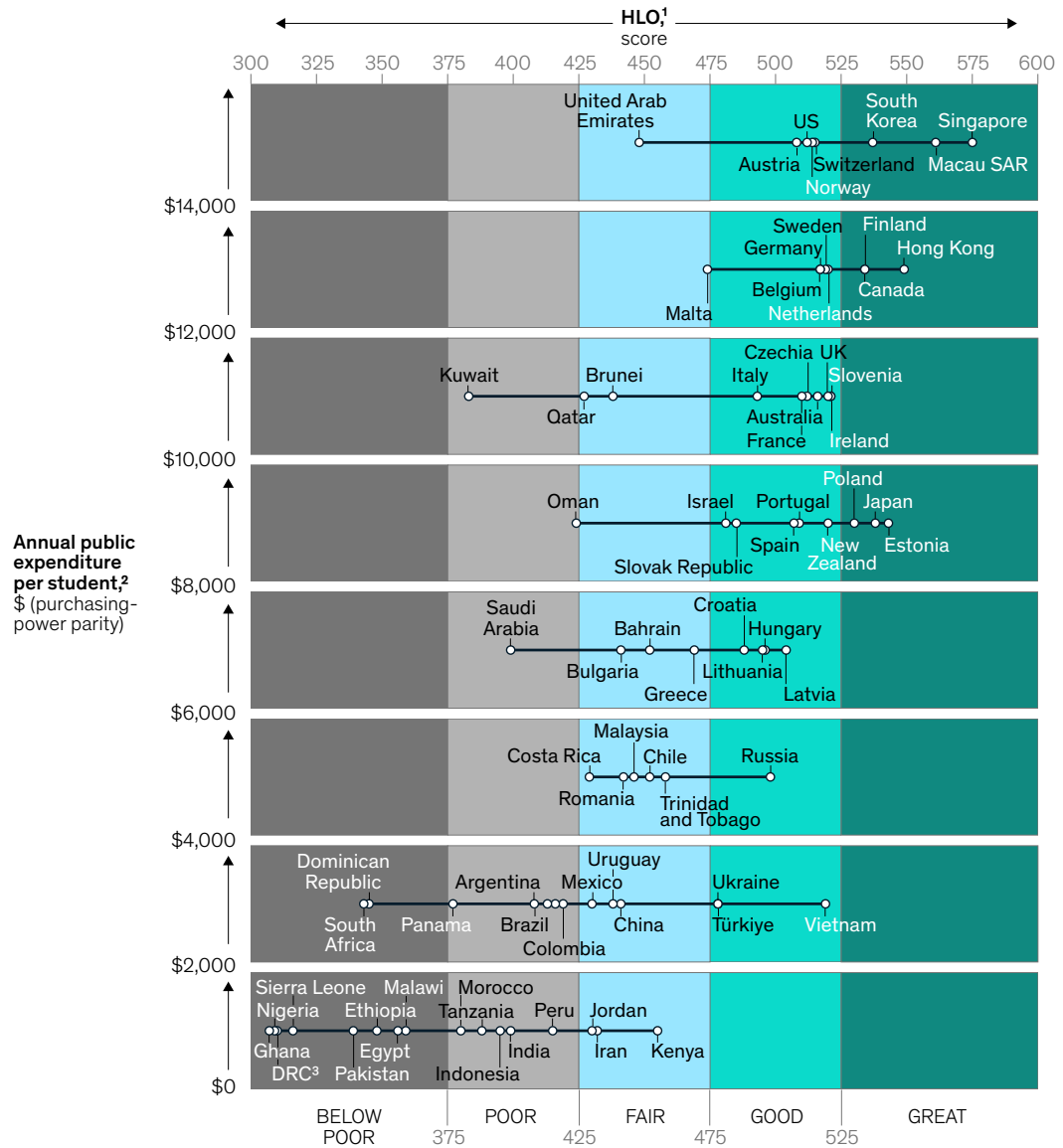
However, more than 90 percent of children live in countries where average educational outcomes are below poor, poor, or fair.⁵ Historically, many of these countries have not taken international assessments, but more recently, the introduction of regional assessments⁶ and the Early Grade Reading Assessment (EGRA) has enabled a broader global comparison of learning outcomes. The OECD suggests that approximately 20 PISA points are equivalent to a year of learning. By that measure, high school students in many sub-Saharan African countries may be ten or more years behind their peers in Europe, North America, or East Asia (Exhibit 1).⁷

**More children than ever are in school,
but many are not mastering basic skills.**

Exhibit 1

Performance in education is uneven, even at similar levels of spending.

Educational performance by nation by annual public expenditure per student



¹HLO scores are standardized, comparable achievement scores for K–12 students. They are based on international assessments (the Programme for International Student Assessment [PISA], Trends in International Mathematics and Science Study [TIMSS], and Progress in International Reading Literacy Study [PIRLS]) and regional assessments (the Southern and Eastern Africa Consortium for Monitoring Educational Quality [SACMEQ], Programme for the Analysis of Education Systems [PASEC], Latin American Laboratory for the Assessment of the Quality of Education [LLECE], and Early Grade Reading Assessment [EGRA]). Eleven countries are imputed by World Bank using the Global Alliance to Monitor Learning method, which relies on national assessments. Countries spending less than \$3,000 per student with K–12 age populations of less than 5 million are excluded from the chart, unless they have the highest or lowest HLO score in their spending group. Some additional smaller countries have been removed for visual clarity. ²To ensure government spending was comparable across the countries analyzed, internationally comparable data sources were used in the following order: UNESCO, World Bank, OECD. More than 80% of the data is from 2017–20. Where data was scarce, data from as early as 2014 was used and adjusted for inflation. For countries with no internationally comparable data available from 2014–20, a GDP per-capita model or government websites were employed. ³Democratic Republic of Congo. Source: Eurostat; OECD; UNESCO Institute for Statistics; World Bank

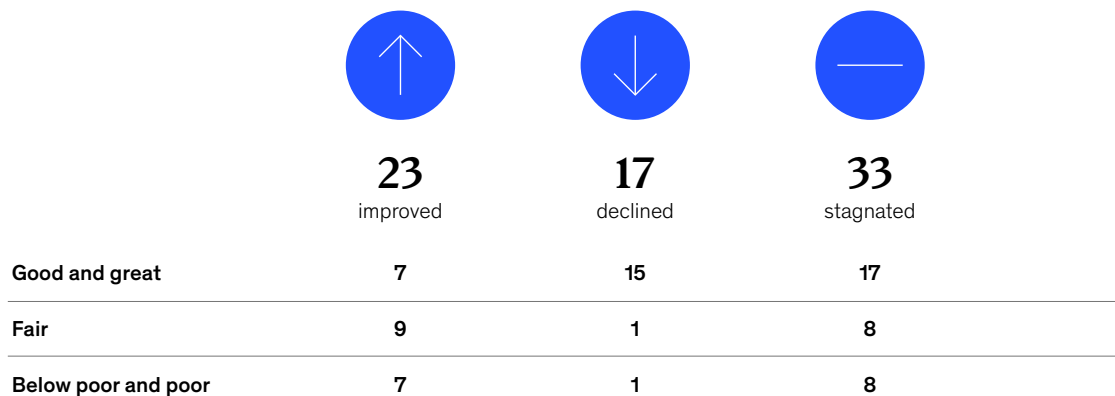
In the decade preceding the COVID-19 pandemic, student performance in most school systems globally stagnated—or declined. Of the 73 countries with longitudinal data over the past decade, only 23 managed to achieve significant, sustained, and consistent improvements in student outcomes. In 17 systems, student performance declined by half a

year of learning or more.⁸ Systems that historically performed at the highest levels were most likely to experience declines (Exhibit 2). Even in high-performing countries, overall system performance may mask significant inequities; every system that participates in PISA shows gaps in performance correlated with socioeconomic status.

Exhibit 2

Over the past decade, most school systems have stagnated or declined in performance.

Number of countries by performance that have improved, declined, or stagnated on international assessments over the past decade¹



¹Performance is based on World Bank Harmonized Learning Outcomes (HLO) scores, with 2020 scores used where available and earlier scores used otherwise. Countries are categorized as follows: below poor (<375 HLO), poor (375–425 HLO), fair (425–475 HLO), good (475–525 HLO), and great (>525 HLO). Countries are categorized as “improved” if they gained 10 points on 2 subject tests across Programme for International Student Assessment (PISA) math, PISA reading, PISA science, Progress in International Reading Literacy Study (PIRLS) reading, Trends in International Mathematics and Science Study (TIMSS) math, and TIMSS science in the past decade and improved by 10 points or more on average across tests. Countries are categorized as “declined” if they lost 10 points on 2 subject tests in the past decade. Countries are categorized as “stagnated” if they are not categorized as “improved” or “declined”; some of these countries had stable performance, while others had varying performance across different tests. Countries are excluded from the analysis if they lack enough evidence (ie, if they do not have a decade’s worth of data on at least 2 international tests). Source: PIRLS; PISA; TIMSS; World Bank

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In the decade preceding the COVID-19 pandemic, student performance in most school systems globally stagnated—or declined.

The pandemic only exacerbated these challenges. Lost learning time widened equity gaps within and between countries, with students ending up, on average, eight months behind where they would have been absent the pandemic. Meanwhile, the pandemic's shift to remote work and e-commerce accelerated changes in the workforce. This is creating a scissor effect: learning losses are colliding with an increasing need for higher-order skills.

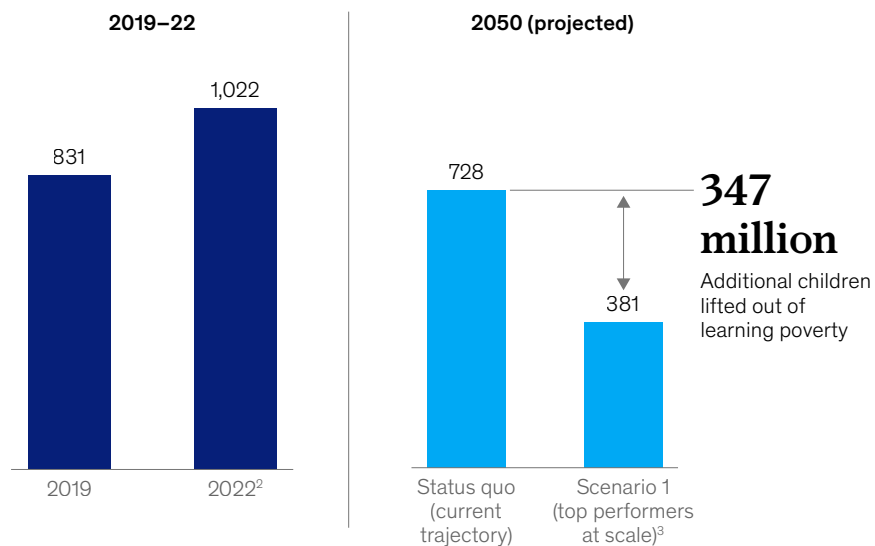
The stakes are high: if historical trends continue, more than 700 million children will remain in

learning poverty in 2050. The pandemic wiped out decades of educational improvements, and we cannot wait decades to make up these losses. The world's population is growing fastest in the places where learning is the furthest behind.⁹ If we do nothing, the implications for economic growth and political stability worldwide will be tremendous. However, this grim future is not inevitable. If all systems could improve student outcomes at the rate of the top improvers, an additional 350 million students could be lifted out of learning poverty in the next 30 years (Exhibit 3). This report considers what it would take to make that happen.

Exhibit 3

If all school systems improved at the rate of top improvers, nearly 350 million children could emerge from learning poverty by 2050.

Number of children aged 5–16 in learning poverty,¹ million



¹Learning poverty refers to children not in school or who complete primary school without learning to read and understand a simple sentence in text. The number of children in learning poverty is very sensitive to the population used. We chose ages 5–16 to reflect the number of students who were in learning poverty when they completed primary school (ages 10–14) as well as those currently in primary school who are not on track to gain basic literacy skills.

²Learning poverty estimates through the height of the COVID-19 pandemic (2019–22) are based on regional growth rates estimated by the World Bank. For regions without regional growth rate data (North America), we used the World Bank's learning poverty projections for high-income countries.

³Our top performers scenario included the top at-scale systems (with student populations of more than 3 million) for each performance band (below poor, poor, fair, good, and great) in terms of international or regional assessment growth. More information can be found in the methodological appendix.

Source: Learning Poverty Global Database: Historical data and sub-components, World Bank, updated August 15, 2023; Population estimates and projections, World Bank, updated December 20, 2023; *The state of global learning poverty: 2022 update*, World Bank, 2022

Systems beating the odds

At first glance, the lack of progress may seem puzzling. Over the past decades, the education community has researched, developed, and codified strong evidence on what students need to master foundational skills such as reading, writing, and critical thinking. We know what interventions work to move most students to proficiency. Over the past decade, per-capita education spending has increased in countries of all income levels.¹⁰ And yet our global survey of 400 education leaders globally found that only 20 percent of education

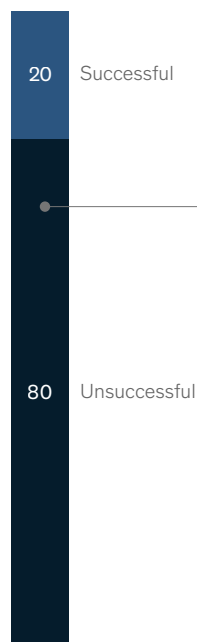
improvement efforts meet their stated goals (Exhibit 4).

To understand how school systems globally can reignite growth and recover from the learning losses of the pandemic, McKinsey examined the decade prior to the COVID-19 pandemic. We conducted research across both improving and declining school systems; analyzed global data; and spoke with more than 200 system leaders, donors and philanthropists, not-for-profit leaders, academics, and educational consultants.

Exhibit 4

Only 20 percent of surveyed school systems achieved their learning and system outcome objectives.

Share of successful transformations¹ (n = 422), % of total respondents



Key reasons behind failure, % time each challenge was reported in top 5 for all transformations



¹Success defined as having mostly or fully met student outcome and system transformation targets.

Source: McKinsey's Global Education Survey, conducted between September 2023 and December 2023, with responses from countries across Africa, Asia-Pacific, Europe, Latin America, the Middle East, and North America, (n = 422)

Our interviews all pointed to the complexity of the implementation challenge. Most school systems struggle to turn improvements into action at scale. Our research demonstrates that to make changes stick, it is not enough for leaders to know “what” interventions to use. It also requires understanding “how” to implement them well at scale. In many systems, well-intentioned changes fizzle out. Stagnating school systems tend to get stuck in a few “failure modes”:

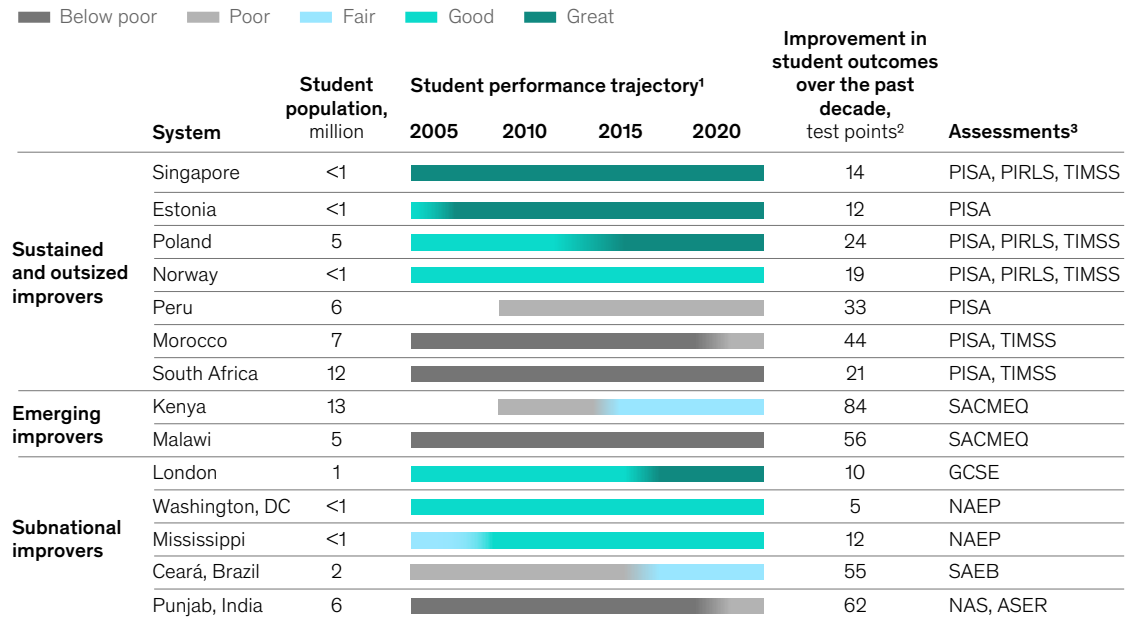
- *Conflicting directions.* Education is not seen as a priority, resulting in an inability to raise the donor or domestic funds needed to deliver. Goals are too numerous, too far out in the future, and hard to measure, and there is a lack of coherence across the individual elements of reform.
- *Leadership discontinuity.* Educational change requires more time than politics often allows. Rapid electoral cycles and short tenures for ministers of education can lead to a whipsaw of priorities, which can in turn confuse and disillusion educators and families. This is exacerbated when reform efforts are tied to political structures, rather than more deeply embedded within institutions.
- *Organ rejection of reform.* Improvements may falter in the face of pushback from communities and educators who feel they were not consulted. Top-down policies may not actually work once they reach the classroom.
- *Insufficient coordination and pace of change.* Too much time is spent on developing strategy and not enough on creating an implementation road map with aligned budgets, timelines, and accountability.
- *Limited implementation capacity.* A lack of program management and analytical capacity within government undermines reform efforts—great educators do not always make great managers. Donor technical assistance ends up overly dependent on international consultants, who leave, rather than local players.
- *Flying blind.* Leaders at all levels operate without sufficient data, missing key opportunities to create transparency and to intervene.
- *Standing still.* Systems try to solve today’s problems with yesterday’s solutions. Leaders may pilot new ideas but without a plan for how to measure impact and take them to scale.

Yet failure is not inevitable. The good news is that some systems are beating the odds and producing meaningful gains in student learning year after year. These outlier school systems exist on every continent and at every level of national development. The global education community can chart a new path by learning from these systems.

To identify improving systems, we looked at national systems that had achieved sustained, consistent, and significant improvements in student outcomes as measured by international assessments,¹¹ as well as at lower-income systems with emerging evidence of improvement on regional assessments.¹² We also identified relevant subnational improvers using national assessment data.¹³ None of the 14 systems that we profiled is perfect, and in some, the absolute level of achievement is still low, but each has meaningful lessons to impart at different stages of the educational improvement journey from below poor to poor to fair to good to great (Exhibit 5).¹⁴

Exhibit 5

We researched 14 systems that are beating the odds to understand why.



¹As measured by World Bank Harmonized Learning Outcomes (HLO) scores.

²Measured in number of points gained in given test. If there are multiple tests, it is the average number of points gained. Point improvements should be comparable across international assessments but may not be comparable across regional assessments.

³Assessments included are: Annual Survey of Education Results (ASER), 2009–19; General Certificate of Secondary Education (GCSE), 2011–21; National Assessment of Educational Progress (NAEP), 2009–19; National Achievement Survey (NAS), 2009–19; Progress in International Reading Literacy Study (PIRLS), 2006–16; Program for International Student Assessment (PISA), 2009–18; Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ), 2007–13; Sistema Nacional de Avaliação da Educação Básica (SAEB), 2009–19; and Trends in International Mathematics and Science Study (TIMSS), 2011–16.

Source: ASER; GCSE; NAEP; NAS; OECD PISA; PIRLS; SACMEQ; SAEB; TIMSS; UNESCO; World Bank Harmonized Test Scores

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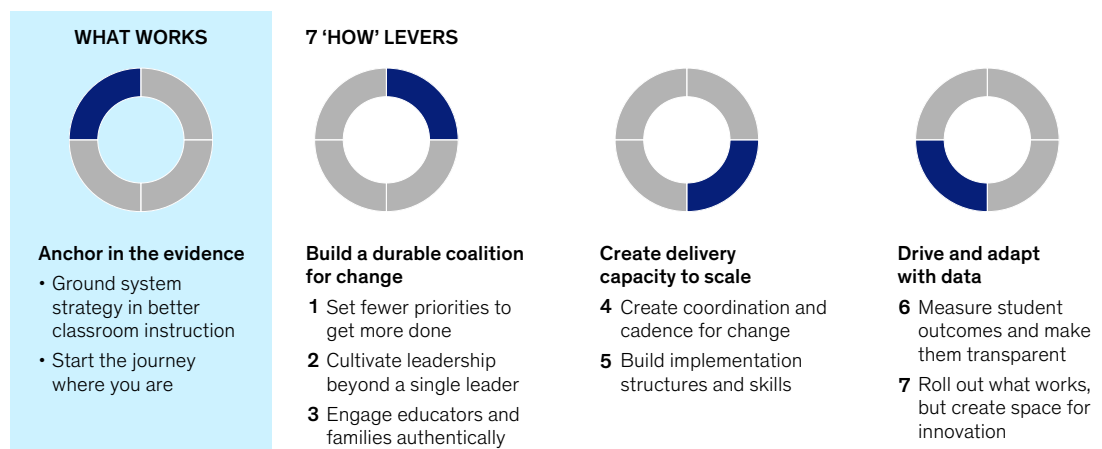
Some systems are beating the odds and producing meaningful gains in student learning year after year.

Our analysis suggests that successful systems, at every level of spending and national development, use reinforcing strategies to create a virtuous cycle, enabling significant, long-term gains in student learning (Exhibit 6):

- *Anchor in the evidence.* Based on clear research into what improves outcomes, successful school systems ground changes in the classroom, focusing first and foremost on teachers and the content they deliver. They choose evidence-backed strategies relevant to their starting place and prioritize foundational learning, particularly in systems with limited resources. They use technology as a tool to enhance learning, not as an end in itself.
- *Build a durable coalition for change.* Successful school systems focus on a few coherent priorities, rallying stakeholders around them to ensure that everyone—from system leadership to principals to teachers—is on board. They invest in authentic, two-way communication with families, educators, and communities to design better policies and build deeper buy-in.
- *Create delivery capacity to scale.* Successful systems move quickly from strategy to implementation, pacing reforms to show early traction while building stamina for the long road to impact. They build dedicated delivery teams with the organizational structures and individual skills to execute on plans over time.
- *Drive and adapt with data.* Successful systems rigorously measure what matters—student learning outcomes—and use transparent data to improve their interventions. As they roll out tried-and-true methods, they also create space for innovation and measure what they innovate, which feeds back into the evidence base of what works.

Exhibit 6

Improving school systems use reinforcing strategies to create a virtuous cycle of outsized gains in learning.



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Individually, these strategies may seem obvious or incremental. Together, they are transformative. Our survey suggests that systems that used all seven of the “how” levers above were six times more likely to be successful in meeting their goals for student outcomes and system transformation than those that used four or fewer (Exhibit 7).

Anchor in the evidence

Ground system strategy in better classroom instruction. The global education community knows what strategies drive learning outcomes. Successful systems focus on interventions closest to students and work outward, starting with the classroom (what is taught, how it is taught), then the school (what supports exist for students and teachers), and finally aligning the system supports (performance management, infrastructure, funding) to what is needed in the classroom (Exhibit 8).

For example, Singapore invests heavily in its instructional core throughout the curriculum and across teacher recruitment, development, and

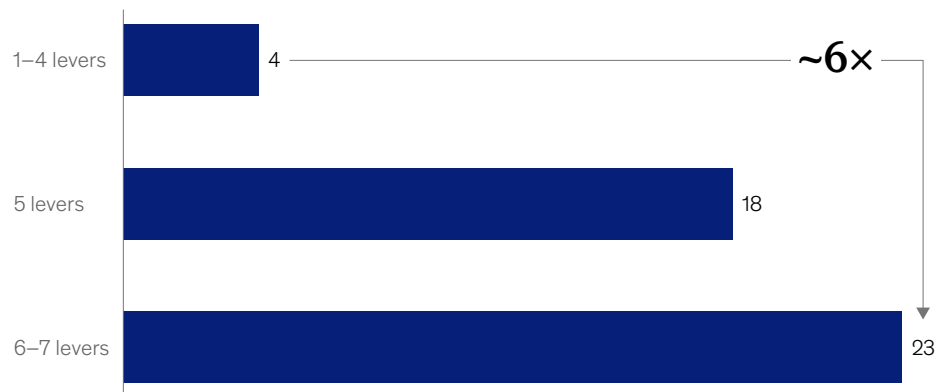
retention. Teacher candidates are drawn from the top 30 percent of their graduating class and must demonstrate core content knowledge. Once in the system, teachers complete 100 hours of professional development annually and receive coaching and weekly collaborative sessions with master and senior teachers. Professional development is practical and tailored, offered in digestible modules, and delivered in classrooms.¹⁵

In Poland, reforms in the early 2000s focused on redesigning the national curriculum—first in elementary grades and later in secondary schools—and on investments at the teacher, principal, and school level to reinforce adoption. Based on research about learning and comprehension, the curriculum was redesigned to prioritize critical thinking and reasoning where there had previously been a content overload. Teachers were engaged in the redesign to inform what strategies might lead to the best uptake; expert coaches worked with teachers to build their skills around the new curriculum.¹⁶

Exhibit 7

School systems that use all seven levers are about six times more likely to be successful than those that implement four or fewer.

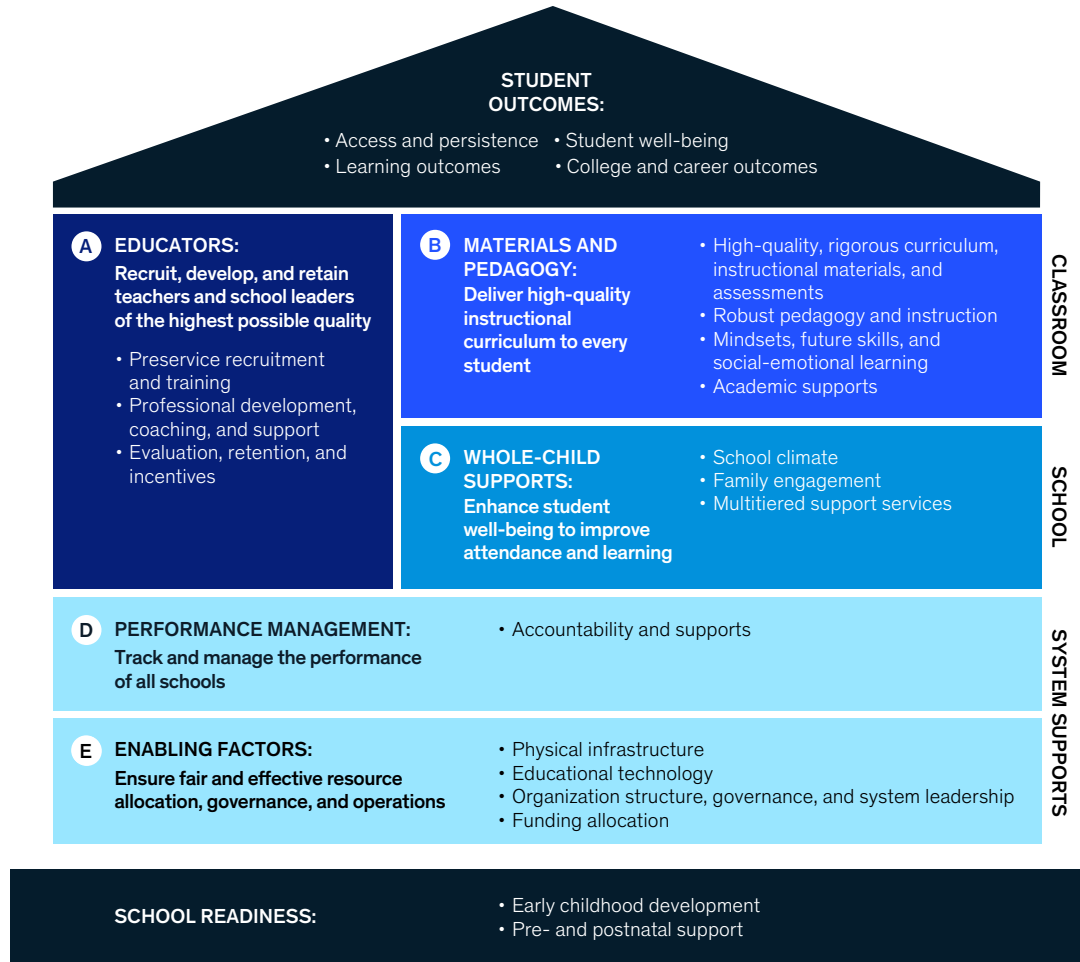
Number of implementation levers used by successful transformations,
% of transformations in each category that were successful



Source: McKinsey's Global Education Survey, conducted between September 2023 and December 2023, with responses from countries across Africa, Asia-Pacific, Europe, Latin America, the Middle East, and North America, (n = 422)

Exhibit 8

Successful school systems anchor change in the classroom.



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Start the journey where you are. To select the best interventions, school systems need to consider their starting student performance, their financial resources, and the capabilities of their teachers and school leaders. One of the biggest mistakes that school systems can make is to “lift and shift” best practices from a system that operates in a vastly different context. In our methodology, we group school systems into five performance bands, based on student learning levels: below poor, poor, fair, good, and great. While the elements of school system excellence remain the same, the interventions differ.

As school systems progress toward good and great performance (for example, Poland and Singapore), increasing levels of school and teacher autonomy are possible, paired with effective accountability, capability building, and peer learning. Systems in the poor or below-poor performance bands (for example, Malawi and South Africa), by contrast, may be best advised to focus on foundational literacy and numeracy, ensure that instructional materials are available on a one-to-one basis, scaffold teachers through structured (or even scripted) lesson plans and in-situ coaching, and put effective assessment for instruction in place to account for greatly varying student achievement levels—a package of interventions sometimes referred to as

structured pedagogy. Systems in the fair category (for example, Kenya) need to ensure the basics are in place, but they then can begin to expand selective earned autonomy, broader competency-based curricula tied to economic pathways, and incentives for teachers and school leaders to develop top talent (Exhibit 9). These imperatives to “start in the classroom” and “tailor to journey” apply equally to technology use (see sidebar, “Education technology—great potential but mixed results”).

For example, Ceará in Brazil, where performance was poor, prioritized Portuguese literacy and math in the curriculum, with a focus on elementary school, and invested heavily in supporting teachers to deliver quality content. All teachers received regular practical professional development, including classroom observations. The state government also led a long and sustainable journey to improve the quality of municipal education leaders, empowering them to provide better support for teachers and schools. From 2009 to 2019, Ceará registered an increase of nearly 12 percentage points on the National Assessment of Basic Education (Sistema Nacional de Avaliação da Educação Básica), moving from poor to fair. Ceará also saw the highest increase of any Brazilian state on the national index of educational quality in elementary education

(Index of Development of Basic Education) between 2005 and 2017.¹⁷

In Punjab, India, where performance was below poor, leaders used Teaching at the Right Level to group students by level rather than age to reduce targeted learning gaps in primary school. Leaders used simple, quick one-on-one assessments to group students into levels at the start of the intervention, administered assessments throughout to track progress and adapt instruction based on students’ results, and reviewed aggregate data to make programmatic decisions.¹⁸ Teachers received training and support to change behaviors. While the share of students in India who could read a grade two text as measured by the Annual Status of Education Report (ASER) declined from 2006 to 2014, the share in Punjab surpassed the national average and grew by 13.2 percentage points.¹⁹ Punjab moved from below poor to poor in the decade prior to the pandemic.

The journey is not perfectly linear for any system, and there are multiple paths to system improvement. In addition, in many systems, overall performance may mask inequities within the nation or region. In a single system, there can be schools ranging from below poor to great. This may require system leaders to consider a range of approaches to drive improvement based on schools’ starting points.

Education technology—great potential but mixed results

While education technology, including generative AI, has great potential to improve access and quality, it is not a silver bullet and can cause more harm than good if it becomes a distraction to proven, tried-and-true methods to deliver student outcomes. History is littered with examples of universal device and connectivity programs that did not yield improvements in student outcomes. Data from the 2022 Programme for International Assessment (PISA) questionnaire, which was issued with the assessment, creates additional reason for pause regarding the use of technology in schools, given that a

large number of students reported feeling distracted by devices while engaged in classroom instruction. While learning outcomes were often better for students who used devices in school for learning than for those who did not, the benefits were strongest for those who used their device for less than an hour a day; the impact decreased with additional use.

Moreover, students who used devices at home for leisure for more than an hour a day saw a big decline in math performance.¹

Effective technology strategies start in the classroom—with an understanding of how

technology will further student learning goals and provide support for teachers. They are focused on the ability of software to address specific use cases rather than just hardware distribution, are integrated into and aligned with the existing curriculum, involve significant professional learning and support for teachers, and consider putting technology in the hands of teachers rather than just students. Effective technology strategies are also tailored to journey and context—including existing infrastructure and existing teacher and principal capabilities.

¹ Andreas Schleicher, *PISA 2022 insights and interpretations*, OECD, 2023.

Exhibit 9

For school systems, the journey to improvement starts where you are.

| BELOW POOR AND POOR | | FAIR | | GOOD AND GREAT | |
|--|--|---|--|---|--|
| A. Recruit, develop, and retain teachers and school leaders of the highest possible quality | | | | | |
| Provide motivation and scaffolding for low-skill teachers <ul style="list-style-type: none">• Practical, spaced teacher training• Structured coaching (repurposed from compliance to coaching) Provide instructional training to all school leaders | | Develop incentives for both teachers and school leaders to attract and retain top talent <ul style="list-style-type: none">• Meritocratic hiring processes• Investment in recruiting, preservice training, and aligned coaching• Fair pay based on national standards (equivalent to GDP per capita) | | Foster continuous-improvement culture <ul style="list-style-type: none">• Job-embedded, curriculum-aligned professional development for teachers• Collaborative practice and peer learning• Deploying top talent to high-need schools• Sustainable career tracks | |
| B. Deliver high-quality instructional curriculum to every student | | | | | |
| Make teachers' lives easier through guided systems of teaching <ul style="list-style-type: none">• Focus on literacy and numeracy• School schedule to maximize learning time• Scripted lesson plans and teacher-focused technology• Universal textbook provision | | Adopt competency-based curricula and assessments at system level <ul style="list-style-type: none">• Resources to reinforce pedagogy for advanced literacy and numeracy• Flexible curriculum, adapted to local contexts• Instruction tied to economic pathways | | Support teachers and schools in adopting HQIM¹ and hold them accountable <ul style="list-style-type: none">• Standards-aligned evidence-based content• Future-forward skills and knowledge• Social-emotional learning• Coherent instructional edtech, including adaptive personalized learning | |
| C. Enhance student well-being to improve attendance and learning | | | | | |
| Provide basic student needs to encourage attendance and health <ul style="list-style-type: none">• School meals• School infrastructure (eg, WASH,² consistent power, and connectivity)• Trauma support (eg, for refugees) | | Support students' holistic needs <ul style="list-style-type: none">• Education enablers like healthcare services and transportation provision• Student social-emotional learning integrated into academics Expand access to early childhood education | | Address whole-child student well-being <ul style="list-style-type: none">• Multitiered systems of support• Collaboration with health and other agencies and CBOs³ | |
| D. Track and manage the performance of all schools | | | | | |
| Develop clear outcome targets and provide transparency on performance | | Establish school performance systems based on student assessments, made public for accountability; provide support for action plans and school-level matching programs | | Empower school-based decision making, with segmented approach to accountability and capability-building supports | |
| E. Ensure fair and effective resource allocation, governance, and operations | | | | | |
| Ensure adequate overall funding | | Implement performance-based budgeting systems with qualified autonomy for school-level budgeting | | Ensure equitable resourcing, with focus on high-need students and schools | |
| Provide central guidance and supports | | | | | |
| Root out corruption and dysfunction | | | | | |

¹High-quality instructional materials.

²Water, sanitation, and hygiene.

³Community-based organizations.

Build a durable coalition for change

Set fewer priorities to get more done. Education leaders are regularly pulled in too many directions. To counteract this, leaders of successful school systems define a North Star vision and choose a limited set of coherent, sustained, and evidence-based priorities (typically no more than three to six). They define these nonnegotiables based on the evidence of what works and ensure that donors and partners support this short list, channeling money and energy to what matters most.

For example, Mississippi reorganized its state education department and board to align their work against six core goals, started every meeting with a recap of these goals, and interrogated every new initiative against these priorities.²⁰ From 2010 to 2014, Kenya introduced 25 different interventions to address literacy rates and saw limited impact.²¹ Starting in 2014, leaders pivoted and prioritized a singular evidence-based approach: Tusome. By relentlessly targeting the country's low literacy rates through a proven approach, the initiative nearly doubled the share of students who met the government's literacy benchmarks from 2014 to 2021.²²

“If everything is a priority, nothing is.”

—Carey Wright, Former State Superintendent of Mississippi

Cultivate leadership beyond a single leader. True transformation can take a decade, but few leaders have that much time. Successful systems invest in civil servants who outlast political leaders and build a deep bench of talent at the central office (especially at the n-2 level²³), at the middle layer, and across schools. Leaders foster institutions beyond the ministry, insulating education from politics by distancing the work from political structures and enabling a greater ecosystem of experts who can support policy development and implementation. Longevity also comes from embedding educational

change into policies and procedures that are harder to reverse.

In Norway, for example, policy continuation was facilitated by the stability of senior civil servants from the Norwegian Ministry of Education and Research and Directorate for Education and Training. These trusted institutions provided a common set of evidence-based research that both parties relied on as the fact base for policy. When the 2012 PISA results were released, leaders in both political parties called the same senior civil servant to understand the data and implications for policy.²⁴ In Morocco, ministry leaders enshrined reforms in a framework law with bipartisan support and created binding mechanisms for new leadership to manage implementation.

“My initiative is now being fulfilled by a conservative government. This kind of continuity gives me hope for the future.”

—Kristin Halvorsen, Former Minister of Education of Norway

Engage educators and families authentically. Authentic engagement is hard to do well, but successful school systems treat it as nonnegotiable. Successful systems actively collect diverse stakeholder input at the outset and throughout implementation to design and refine policies that will resonate and work in the classroom. In practice, this includes engaging teacher, principal, and student advisory boards; conducting regular surveys of parents, students, and educators to keep a pulse; and ensuring that every member of the executive cabinet visits a diverse range of schools at least twice a month. Successful systems then create compelling change stories and use a broad tool kit to influence changes at the school and classroom level.

For example, during Kaya Henderson's tenure as school chancellor in Washington, DC, the public school system worked closely with communities to communicate how school closures would lead to more resources in remaining schools, and it sought community input on how to transform school communities. When the district made subsequent closure decisions, there was less pushback from the community than otherwise expected. Overall, public school enrollment grew during this time period for the first time in decades, pointing to strengthened public confidence in the system.²⁵ Cecilia María Vélez White, former minister of education in Colombia, held monthly meetings with principals, convened more than 1,500 teachers, shared information with unions, and went on a listening tour to a different region every week.²⁶

“We asked people, ‘Ten years from now, what should DCPS look like? What are your hopes and your dreams for the district and for your students?’”

—Kaya Henderson, Former Chancellor of DC Public Schools

Create delivery capacity to scale

Create coordination and a cadence for change. Successful systems move quickly to turn their plans into action. They create a concrete road map, pressure-test their implementation plans, and ensure the budget is oriented around priorities. They pace their changes to show quick wins in the first six months to demonstrate momentum. At the same time, they design for scale to ensure that changes have their intended impact.

For example, as part of the London Challenge initiative, London appointed dedicated advisers who were deployed to the schools that were struggling the most. The advisers provided on-the-ground coaching and brought immediate recommendations back to the central department so resources could be deployed rapidly.²⁷ South Africa created free literacy workbooks, adapted them to native languages, and distributed copies to 6.5 million students across 20,000 schools. A dedicated delivery team oversaw the entire process,

from development to printing and delivery of the workbooks, and 40,000 trained teachers provided support for adoption.²⁸ From 2011 to 2015, more than 150 million workbooks were delivered to schools.²⁹

“You can be nimble and agile. The fact that you can work at a ridiculously higher speed than government normally works makes people believe in you in a completely different way.”

—Sir Jon Coles, Former Director of the London Challenge

Build implementation structures and skills. Many school systems struggle to access the in-house talent to implement major changes. In addition to great educators, school systems need great project managers and implementors to translate strategy at the ministry into implementation in every classroom across the system. Successful systems ensure dedicated implementation capacity within the central team, at the middle layer, and across schools. This involves establishing clear roles and responsibilities for making decisions and approving investments, as well as creating an army of changemakers in the field to bring changes to fruition. Systems can then assess their delivery capacity across this structure and hire or build missing capabilities.

For example, under Jaime Saavedra's leadership in Peru, the ministry brought in experienced managers from within and outside of government, with a specific goal of improving management and the pace of change. At the same time, Peru also reformed the process for selecting its 15,000 school principals to ensure high-caliber management talent in schools.³⁰ In Ceará, Brazil, the 150 highest-performing schools adopted the 150 lowest-performing schools. If the lower-performing school improved, both schools in the pair were financially rewarded. This pairing of successful and struggling schools has also worked in London and in Shanghai. In Shanghai, deputy school leaders of successful schools can only be promoted to

principal or school leader if they first lead the turnaround of a struggling school.³¹

“I ended up changing most of the top 60 positions in the ministry to ensure the right managerial skills and implementation capacity, including attracting people from the Ministry of Finance.”

—Jaime Saavedra, Former Minister of Education of Peru

Drive and adapt with data

Measure student outcomes and make them transparent. Successful school leaders build robust data systems, identify trends, and use the data to build a shared culture of continuous improvement. They make important information public to build momentum, segment schools for accountability and support, and use data to drive improvement at every level, from system strategy to instruction in schools.

For example, in Estonia, student outcome data is linked with broader social data. The government maintains a centralized data system for all public services with a unique ID for each citizen. Families can look at their own child’s achievement data within this broader context. The ministry makes school-level data transparent to the public and regularly uses this data to support policy making. Data is sufficiently protected, and there is a high degree of trust among citizens.³² In Sierra Leone, the ministry has built data systems from the ground up, digitalizing the school census and linking it to student performance data, enabling data to become the reference point for all interventions. Data on gender inequities in access has informed new policies, which have helped increase enrollment among girls.³³

“I made sure that we had data to inform everything we did. From day one, all policies had to be grounded in data and evidence.”

—David Moinina Sengeh, Minister of Basic and Senior Secondary Education and Chief Innovation Officer for Sierra Leone

Roll out what works, but create space for innovation. Successful systems create space for innovation and, critically, measure what they innovate to add to the existing evidence base of what works. Most innovation in education systems will likely be oriented toward continuous improvement and sustaining practices. However, there is also a need for more-disruptive innovation, especially in systems where performance is poor or below poor and where exponential growth in achievement is needed. Innovation is needed both to improve the effectiveness of existing interventions and to create more-scalable models.

For example, structured pedagogy approaches currently provide the best evidence base for improving literacy and numeracy across low-income countries—but financial and human capital constraints mean that systems will not be able to roll out and scale such approaches rapidly enough to reach this generation of students. In Malawi, education leaders are scaling up a foundational literacy and numeracy program that uses robust, solar-powered, offline tablets in primary-school education. The intervention was first tested as a pilot with external partners, and the government has built a team strictly focused on the rollout. A big part of the innovation is in the streamlined implementation—schools and teachers can be set up to run the program within weeks. The program is being measured and tested as it scales.³⁴

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Singapore has demonstrated that even the most successful school systems need to keep innovating, particularly as the needs of students change. This has led to new experiments and investments in social-emotional learning and 21st century skills to complement the already-strong approach to math and literacy instruction, based on emerging research on the importance of student mindsets on educational outcomes.³⁵ Singapore's system is unique among top PISA scorers in that it continues to grow while others have stagnated.

“When we talk about professional learning, we can never say we have arrived. . . . The moment we say we have arrived, that will cause our downfall.”

—Yen Ching Chua-Lim, Deputy Director-General of Education (Professional Development), Singapore

Individually, these strategies may seem obvious or incremental. Together, they are transformative. The slow and steady work of implementation sets improving school systems apart from the rest. This is not really a story about beating the odds. It is a story about the systems that were able to change the odds. Education leaders can—and must—learn from them.

About the authors

This article is a collaborative effort by Jake Bryant, Felipe Child, Ezgi Demirdag, Emma Dorn, Stephen Hall, Kartik Jayaram, Charag Krishnan, Cheryl Lim, Emmy Liss, Kemi Onabanjo, Frédéric Panier, Juan Rebolledo, Jimmy Sarakatsannis, Doug Scott, Roman Tschupp, Seckin Ungur, and Pierre Vigin, representing views from McKinsey's global Education Practice.

The authors wish to acknowledge the tireless work of school system leaders, school principals, and particularly classroom teachers, who have dedicated their lives to educating youth and who are working every day to close gaps in student achievement.

This research benefited from the contributions of hundreds of global education experts and McKinsey team members. Please see the full report for a complete set of acknowledgments.

This report is a summary of a larger report, available for download on [McKinsey.com](https://www.mckinsey.com).

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- 7 The translation of PISA points to a year of learning is an art, not a science. The latest analysis from the OECD suggests that approximately 20 PISA points reflect a year of learning, while the World Bank suggests a year of learning equates to 20 to 50 PISA points. There is likely some variation depending on a student’s age; typically, students in earlier grades learn more content in a single year than students in later grades.
- 8 Countries are categorized as “improved” if they gained ten points on two subject tests across PISA math, PISA reading, PISA science, PIRLS reading, TIMSS math, and TIMSS science in the past decade and if they improved by ten points or more on average across tests. Countries are categorized as “declined” if they lost ten points on two subject tests in the past decade. Countries are categorized as “stagnated” if they are not categorized as “improved” or “declined.” Some of these categorized as stagnated had stable performance; others had differing performance across different tests. Countries are excluded from the analysis if they lack enough evidence (for example, if they have not taken two international tests with a decade’s worth of data).
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