# Realizing the Future of Learning

## FROM LEARNING POVERTY TO LEARNING FOR EVERYONE, EVERYWHERE

WORLD BANK GROUP
Education

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# Introduction and Overview

Education is a right with immense inherent value. As an essential building block for a country's human capital, it is also a key driver of growth, competitiveness, and economic development. For societies to be inclusive and fair, they need to prepare all their children to succeed as citizens and give them the tools to participate in their countries' development. This has become increasingly challenging, because students must have the skills and competencies to adapt and be successful in a rapidly changing, uncertain world, especially as the world grapples with the effects of the COVID19 pandemic. At the same time, our understanding of how children best learn and what the most effective education delivery mechanisms are has grown. Armed with this knowledge, countries that are serious about living up to this challenge will invest in their people to build their human capital; take action to show that learning really matters to them; and commit not only the financial, but also the political and managerial resources necessary to build an education system that serves all with quality.

**Urgent action is needed to realize a new vision for education: one in which learning happens for everyone, everywhere.** Too many education systems are not delivering even basic skills for all children, let alone preparing them for the demanding world they will live in as adults. As the World Bank expands its support for countries to invest more, and more effectively, in education, it has developed a renewed policy approach to address the educational challenges of today while helping countries lay the groundwork to seize tomorrow's opportunities. The Bank's 2018 World Development Report urged action to address the global learning crisis and examined the policies needed to tackle it (World Bank 2018a). To support efforts to improve foundational learning, last year the Bank launched a global target: to cut the Learning Poverty rate—the fraction of 10-year-olds in low- and middle-income countries who cannot read and understand an age-appropriate text—at least in half by 2030 (World Bank 2019a). It was also a recognition of the severity of thelearning crisis that we are living through: that more than half of children lack these fundamental skills at the end-of-primary age shows that their future is at stake. And now the pandemic has generated a crisis within a crisis.

**The COVID-19 crisis has further exposed the weaknesses of education systems around the world and underlined the urgency to act.** As a consequence of the measures taken to combat the COVID-19 pandemic, education systems around the world are enduring the worst crisis of the last 100 years. Never before we have witnessed the twin shock of massive, lengthy school closures coinciding with the sharpest economic downturn of the last 100 years in most countries in the world. In this unprecedented shock, at the peak of school closures 1.7 billion children and youth had their classes interrupted, and even 7 months after the onset of the pandemic almost 600 million students still had not returned to school. Moreover, some education systems reopened but then had to close again at least partially and return to remote instruction (where that was available). This experience signals a protracted and uncertain process in which countries are still learning how to deal with the pandemic and at the same time trying to minimize learning losses. On top of this, the deep recession is limiting family's capabilities to invest in education and is putting a strain in public budgets.

**Learning losses and other negative impacts on education outcomes as a consequence of the pandemic will most likely be large.** Simulations by the World Bank show that the learning poverty rate might increase by 10 points, from 53 to 63 percent, in low- and middle-income countries. This implies that 72 million more children might become learning-poor as a consequence

of the pandemic. Estimates of dropout rates indicate that 10 million children may fail to return to basic education after schools reopen. And as a long-term consequence, the resulting reduction in human capital accumulation and productivity could cause this generation of children and young people to lose USD 10 trillion of future earnings (in net present value)—an amount equivalent to almost 10 percent of global GDP. To help avert this, the Bank has outlined a three-phase education policy response to the pandemic—with a coping phase, a phase of managing continuity and recovery, and a phrase focused on acceleration of learning (World Bank 2020a)—and increased its technical support to countries. Many countries are now in the second and third phases, as they manage a protracted process of returning children and youth to school. In many cases, this has opened a window of opportunity to rebuild more equitable, effective, and resilient systems that will shape the future of learning.

**This report describes the World Bank's vision for the future of learning and a strategic approach that lays out the lines of actions needed for education systems to move forward in accelerating learning improvement.** When this report was written (as 2020 was drawing to a close), education systems were trying to provide education services in the midst of a protracted pandemic. But in many cases, the pandemic response has opened a window of opportunity for educational systems to move to a path of accelerated progress. It is now possible to bring forward to today elements that many would have thought are part of the future of learning. A vision of this future should guide today's investments and policy reforms so that countries can lay the foundations for effective, equitable, and resilient education systems.

**In the future, learning should happen with joy, purpose, and rigor for everyone, everywhere.** Learners experience joy when their skills are stretched with challenging but possible tasks. Purpose is achieved when content, curricula and instruction are relevant, important and applicable to the lives and contexts of children. Finally, learning happens when there is rigor, as achieving mastery and excellence usually entails continuous practice and effort. Further, the future of learning involves everyone learning,

everywhere. To achieve equality of opportunities and guarantee that the education system is resilient, the sharp differences in school and home environments need to dissipate. And this has to be part of public policy. Learning should occur for all children, and it should happen in school and beyond its walls.

**A vision for the future of learning can be realized only by transforming the entire education system to prioritize and support student learning.** Ultimately, delivering a high-quality education is about improving the learning experience of every child in every classroom in every school. The challenge is to make that happen in a systemic way for everyone. Moreover, the COVID19 pandemic has underscored the need to ensure learning continuity beyond school walls. To guide our policy advisory and operational support to countries, this report discusses policy actions that are needed to accelerate learning and that characterize the way many successful systems operate. These are presented within five inter-related pillars of a well-functioning education system that underpin the World Bank's strategic education policy approach: learners, teachers, learning resources, schools, and system management. Countries can chart their own path with a political commitment to carry out investments and reforms in five pillars that ensure that:

1. *Learners are prepared and motivated to learn*—with a stronger emphasis on whole-child development and support to learning continuity beyond the school.
2. *Teachers are effective and valued*—and ready to take on an increasingly complex role of facilitators of learning at and beyond the school with use of education technology.
3. *Learning resources, including curricula, are diverse and high-quality*—to support good pedagogical practices and personalized learning.
4. *Schools are safe and inclusive spaces*—with a whole-and-beyond-the-school approach to prevent and address violence and leave no child behind.
5. *Education systems are well-managed*—with school leaders who spur more effective pedagogy and a competent educational bureaucracy adept at using technology, data, and evidence.

**Investments and reforms in each of the pillars are needed today to lay the foundations for the future of learning.** For some educational systems, the transformation of education delivery may seem far off and maybe unattainable in the short run. However, policymakers can implement key policy actions today to lay the foundations for the future of learning.

**To engage learners, systems can ensure that children arrive at school prepared, supported, and motivated to learn.** This involves providing high-quality early childhood development services, especially to the most vulnerable. It also involves removing demand-side barriers to getting all children into school and creating the conditions to keep them there (such as ensuring they acquire the foundational skills they require for further schooling). Finally, it involves bolstering the role of families and the communities while improving learning environments outside school.

**To ensure a healthy teaching and learning process, countries need to make sure that the teaching career is socially valued and that teachers have the tools, support, and expectations they need to be effective.** The teaching profession must be a meritocratic, socially valued career, where teachers are held to high professional standards. Training should effectively equip teachers to do their job; pre-service training needs to involve opportunities for extensive practice, and in-service training needs to be on-going, tailored, practical, and focused on improving the instruction-teaching process.

**Students must have access to adequate and diverse learning resources, including an effective curriculum, useful assessments, books and reading materials, and education technology.** The curriculum should be adjusted to the level of the students and the capacity of the system, written in a way that offers useful guidance for teachers. Where it is needed, providing detailed guidance to teachers, paired with interventions to target instruction according to students' level of learning, can be a way to substantially improve learning, outcomes. Another important tool is a combination of different types of learning assessments to help inform policymaking, classroom instruction, and even teacher professional development. Children should have access to high-quality,

age-appropriate books and other learning materials. Finally, teachers and school leaders should be able to access and effectively harness technology to achieve their learning objectives.

**Safe, welcoming, and non-discriminatory learning environments are an urgent development objective.** This entails ensuring that infrastructure meets basic school building standards that consider cost-effectiveness, climate resilience, flexibility, accessibility, and alignment with pedagogical plans. It also requires implementing measures to foster a positive school climate and safe learning, as well as taking a strong stance to increase the access to and quality of education for girls, for children with disabilities, and for those in settings of fragility, conflict and violence. Importantly, teaching students first in the language they use and understand is key to improve learning outcomes.

**All of this requires institutions with effective leadership and management structures.** The human resource function of education systems needs to be strengthened to professionalize school leadership. Principals should have tools to manage with autonomy and receive professional development opportunities to build their managerial, pedagogical, and leadership capabilities. And education systems need to develop strong bureaucracies to manage extremely complex service delivery systems.

**The report also discusses core principles that should guide systemwide reform efforts so that policies within each pillar offer the greatest value for money and are scalable and sustainable.** The experience of successful education systems shows that there is no single way to organize an effective education delivery system, but high-performing systems share some common tenets: pursuing systemic reform, supported by political commitment, that focuses on learning for all children; focusing relentlessly on equity and inclusion; acting on the basis of evidence and focusing on results; ensuring the necessary financial commitment; and making smart investments in education technology to harness its potential to improve learning.

**Education reform cannot be piecemeal; it needs to be systemic.** All inputs must be part of a

coherent plan to increase learning, and all interventions should be aimed at permanently increasing the country's capacity to deliver high-quality education. Even acknowledging that reform is complex, it is essential to work simultaneously in all pillars mentioned above. From a pedagogical perspective, a crucial step in this systemic change is crafting "instructional coherence": coherence in terms of the curriculum, teachers' pedagogical approaches, and assessment (how the system checks whether students are learning).

**Political commitment and alignment around education reform is a precondition for ensuring that learning for everyone, everywhere is always the focus of reform efforts.** Good technical design is critical for scalability and sustainability, but effective interventions require an enabling political environment in which all stakeholders are aligned toward learning (World Bank 2018a). That a system should be focused on ensuring that children are in school and learning sounds obvious, but it often is not. A typical example is teacher career reforms: shifting from a structure where appointments are politically based to one with meritocratic career paths is essential for a student-centered system, but also politically costly. Alignment should be forged around a political and policy strategy that commands a reasonable level of consensus and transcends political administrations. Political alignment around education requires a shared commitment to learning, so that all decisions are made with the objective of ensuring that all children and youth are in school and learn; making this happen is a highly political decision.

**The pandemic has shown that successful systems focus on equity and has also shown that resiliency and equity are inextricably linked.** Countries that invest successfully in preparing learners, in a strong teacher workforce, in effective pedagogical systems, in safe and inclusive schools and that pay attention to effective management at the school and system level are better placed to ensure that all students have the right educational experience beyond school walls. The pandemic has made evident the huge inequities in many systems. More than 135 countries implemented remote learning strategies, but the differences in depth and effectiveness along the income scales are extremely large. Most systems were not prepared: internet reach was low and unequal, and attempts to reach students through educational radio and TV have been useful but insufficient. Moreover, the COVID19 pandemic has underscored the need for resilient systems that ensure learning continuity beyond school walls. This learning continuity requires making sure that there are the right conditions not only in the school, which remains as the critical social education space, but also at home.

**The pandemic is also offering important lessons about the need to close the digital divides, and about the critical role of teachers and parents.** Despite decades of talk about the digital divides, the pandemic has shown that countries were largely unprepared for a crisis like this. Closing the digital divides will require investments in connectivity software, devices, and teacher professional development to ensure that technology can enhance the work of teachers and also facilitate managing the whole education process. And it can also support more resilient systems in the longer run, if public policy emphasizes connectivity and the availability of devices at home or at the community. This is a promising but complex agenda, as there is still a lot to learn about the effectiveness of specific technological solutions. Resilience also requires placing much more emphasis on the role of parents. The pandemic has made it clear how important support at home is, and how parents are key players in their children's learning and their future. Public policy should internalize this and provide guidance, support, and counseling to parents so they can better fulfill this role. Thus, education systems must become more equitable and more resilient to realize the vision presented here on the future of learning, so that learning occurs for everyone, everywhere.

**The use of data and evidence to improve design of education policies is critical.** The crisis has created a wave of adoption of new technologies and new practices at an unprecedented pace in all systems of the world, and the speed of innovation might accelerate. This is a welcome development; however, implementation of proven technologies and methods in one environment does not ensure success in others, so constant monitoring, evaluation, and use of the evidence generated is essential.

**This vision for the future of learning does not set out on a single model or path for all countries.** It encapsulates the types of changes needed in the pillars of the education system—learners, teachers, learning resources, schools, and system management—and in the relationships among them. The experience of successful education systems shows that there is no single way to organize an effective education delivery system, although high-performing systems share some common features. For instance, they fully embrace equity as an overall guiding goal and principle of education policy. Some of these changes have already been made or are emerging in high-performing systems, and countries with underperforming systems can use these examples to guide their policy actions and investments. In some cases, those countries can move quickly to adopt similar changes and accelerate educational development, using insights from the science of learning to develop goals and teaching practices for schools, institutions, and programs. For instance, countries can strive to incorporate socioemotional learning into their curricula and teaching practices. In other cases, they will need to adapt ideas from high-performing systems to their own context. For example, some changes depend on strong implementation capacity in ministries of education, but there are few shortcuts for strengthening this capacity, so those changes may require more adaptation. This report examines the policies and programs that systems can adopt to move, along their own paths, toward the future of learning.

**This report reviews the current learning crisis, including the extent to which COVID-19 has exacerbated it, and then lays out a vision, policy priorities and some principles for education policy reform.** The first part describes our vision for the future of learning. The second examines the steps that countries can take today in terms of policy reforms and programs to realize and sustain this vision at scale, each charting its own path according to its own context. The third describes the principles that should be followed to ensure coherence and optimize the effects of policy reforms. Together, they address the following broad questions: "What are the main changes needed to strengthen the five pillars of an education system and realize our vision for the future of learning?" "What policies and programs should be prioritized and sustained over time to realize this vision? "How can the effect of investments and policy actions be optimized to achieve learning for everyone, everywhere?"

# Global Learning: A Crisis Within a Crisis
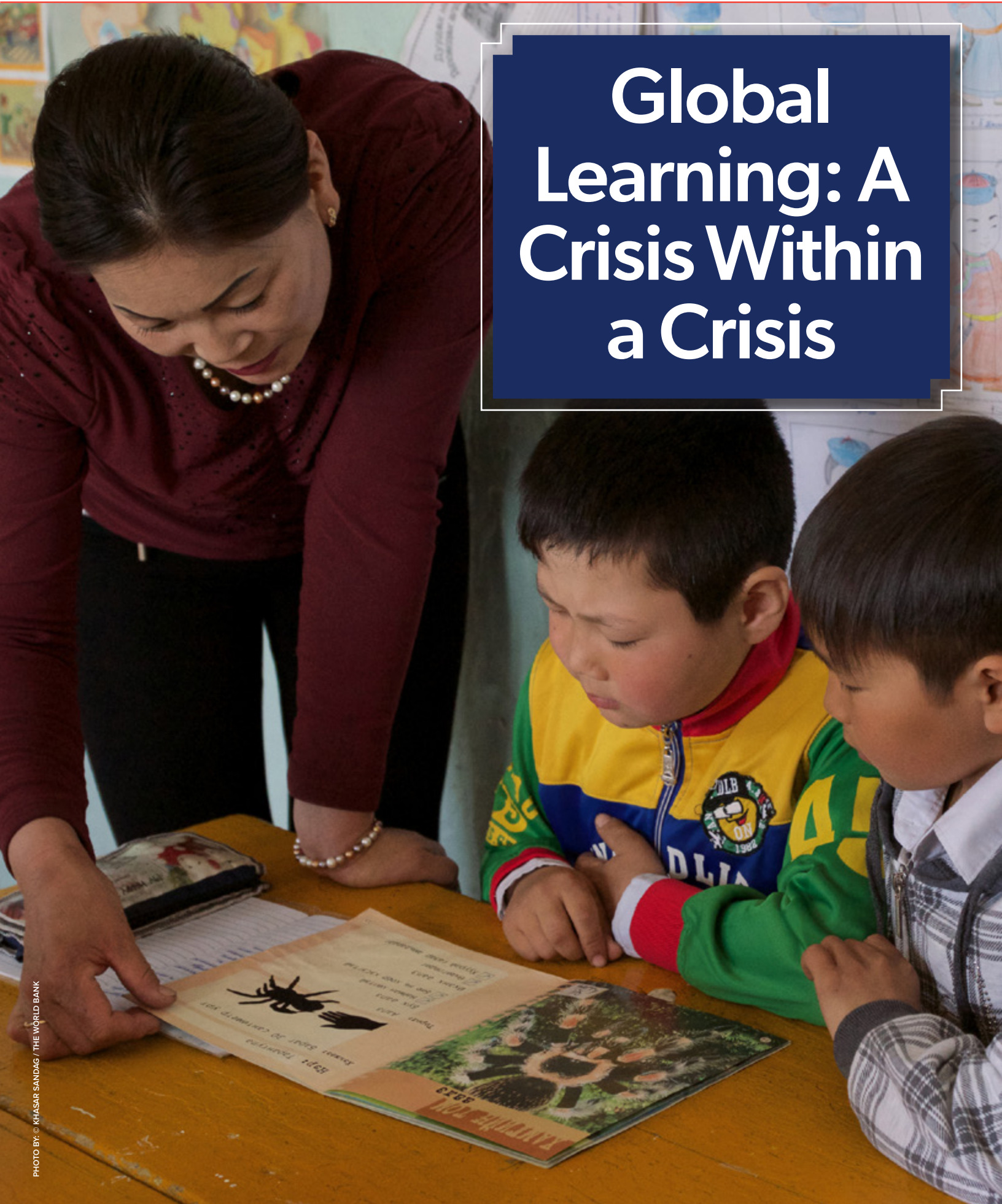
T he world is experiencing a learning crisis; despite increases in enrollment in recent decades, too many children remain out of school, and those in school are learning too little. This challenge has been described as the global learning crisis (World Bank 2018a, UIS 2017). More than 250 million primary- and secondary-school-aged children and youth are out of school; one-third of those have never been in a school (UIS 2019). Enrollment in early childhood education is less than 50 percent on average (UNICEF 2019). In many low-income countries, demographic pressures are magnifying the challenge of maintaining enrollment. As the World Bank's recent work has highlighted, a large proportion of children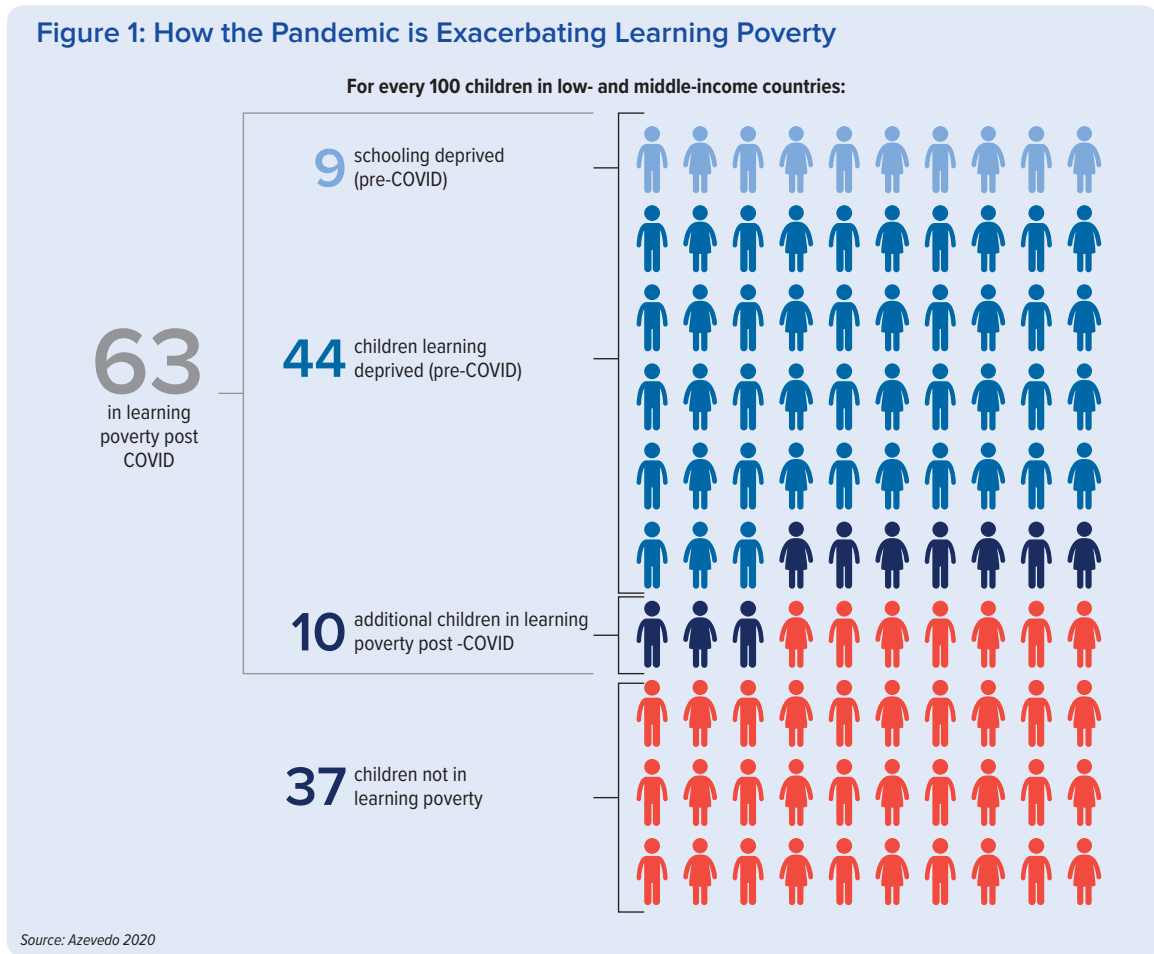 are not acquiring even fundamental skills. The learning poverty rate is 53 percent; that is, 53 of every 100 10-year-olds in low- and middle-income countries cannot read and understand an age-appropriate text. This rate is much higher in some regions; in Sub-Saharan Africa, it is close to 87 percent, or nearly seven times the 13 percent rate found in World Bank client countries in Europe and Central Asia (World Bank 2019a). These gaps in access to education and learning affect people who are marginalized because of ethnicity, gender, disability, sexual orientation, or other identities the most.

**With current efforts, the Sustainable Development Goals of universal quality education for all are unlikely to be achieved, let alone the acquisition of 21st-century skills needed for a fast-changing world of work.** These gaps in attainment of basic skills accumulate over children's schooling years. In some low- and middle-income countries, time in school is worth only half as much as in high-performing systems. In terms of skills acquired, 11.6 years of schooling is equivalent to only 5.7 quality-adjusted years of schooling (Filmer et al. 2020). The cost of low learning will be even greater in the future. The generation of 21st-century workers will need a balanced set of skills to participate productively in modernizing economies: foundational cognitive, socioemotional, and digital skills; job-specific (technical) skills; and higher-order skills. Systems that are unable to provide students with basic literacy and numeracy skills are not likely to rise to the challenge of building more complex skills, so the World Bank launched the Global Learning Target of cutting the learning poverty rate at least in half by 2030 (World Bank 2019a).

**With COVID-19, we are experiencing a "crisis within a crisis."** The pandemic has brought twin shocks to education—massive school closures and an ensuing deep economic recession—that threaten to exacerbate the learning crisis, especially for the poor (World Bank 2020a). At the peak of the pandemic in the spring of 2020, 94 percent of students worldwide were in countries where schools were closed, bringing learning largely to a halt (World Bank 2020b). More than 130 countries sought to mitigate learning losses through remote learning initiatives using digital and nondigital education technology solutions, but capacity, logistical, and financial impediments often limited their effectiveness. Student mental health has suffered, and violence against children may have increased (Onyango 2020; Peterman and O'Donnell 2020; Safe to Learn 2020a; UN Women 2020). The global recession will almost certainly strain investment in education by families, governments, and donors, and 10 million students could drop out of school as a result (Azevedo et al. 2020). COVID-related school closures could increase the learning poverty rate in low- and middle-income countries by 10 percentage points (from 53 percent to 63 percent) (Azevedo 2020) meaning that an additional 72 million of 720 million children of primary-school age could fall into learning poverty (see figure 1). It is likely that marginalized groups will fall even further behind. Girls are facing greater risk of

## Figure 1: How the Pandemic is Exacerbating Learning Poverty

**For every 100 children in low- and middle-income countries:**

**9** schooling deprived (pre-COVID)

**44** children learning deprived (pre-COVID)

**63** in learning poverty post COVID

**10** additional children in learning poverty post -COVID

**37** children not in learning poverty

*Source: Azevedo 2020*

early marriage and adolescent pregnancy during the pandemic because of disruptions in family planning services and in interventions to reduce child marriage, as well as school closures, resulting in an estimated 13 million additional child marriages in 2020 (UNFPA 2020). Children with disabilities, ethnic minorities, refugees, and displaced populations are less likely to have access to suitable remote learning materials and to return to school after the crisis (World Bank 2020c). The learning losses and dropouts that the crisis is causing could cost USD10 trillion in future earnings for this cohort (Azevedo 2020).

**Historical data and initial evidence from this pandemic suggest an inequality catastrophe on the making.** Twenty years of historical learning assessment data show that the worsening of learning in educational systems is always accompanied by an increase in learning inequality. We do not expect the COVID-19 school closures to be any different; indeed, they may

lead to unprecedented increases in learning inequality. Three out of four students who cannot be reached by remote learning opportunities come from rural areas or poor households, or both (UNICEF 2020). Recent household surveys find that while eight percent of children in Latin America and the Caribbean were not engaged in any form of learning activity during school closures, 55 percent of those in Sub-Saharan Africa faced school closures with no access to learning, with significant within-country differences depending on parents' level of education. Even for those who accessed remote learning, learning appears to be heterogenous and low. In Colombia, the learning loss for students in the lowest income quintile is expected to be double that of students in the richest income quintile (Cerdan-Infantes et al. 2020). In Belgium, even with high-quality remote learning programs in place, school closures decreased learning significantly and exacerbated learning inequality both within schools and across different schools. Schools with more disadvantaged

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student population experienced larger learning losses (Maldonado and Witte 2020). In the Netherlands, despite remote learning efforts, children made little or no progress while learning from home. Worryingly, learning losses were up to 55 percent larger among students from less-educated homes (Engzell, Frey, and Verhagen 2020).

**We need to recognize the magnitude of the amplified learning crisis and act with urgency to address it.** Without urgent action to achieve unprecedented improvements in learning, Sustainable Development Goal 4 will not be achieved. Business as usual is not acceptable, for governments, international organizations, or societies.

## COVID-19: A Catastrophe but Also Potential Catalyst for Transformation

**The COVID-19 pandemic has exposed fundamental weaknesses in education systems, spurring policymakers and other education stakeholders to recognize the cost of inaction and fueling innovations.** Before the crisis, numerous attempts had been made to transform the delivery of education in developed and developing countries in terms of an enhanced learning experience supported by effective pedagogy, reimagined learning environments, and resources, including education technology,[1] but most of these attempts had failed to become established features of most education systems. Most schools have stayed much the same. Reforming the education sector is inherently difficult because of its size. Reform requires implementation capacity, financial resources, and persistence, and reforms in education are difficult because not only do regulations and laws need to be changed and necessary inputs purchased, but the behaviors and beliefs of teachers, principals, parents, and bureaucrats also need to be changed. Changing behaviors is not easy, so such reforms are often perceived as highly risky. Before the pandemic, the time horizon for instituting the improvements and innovations discussed in this report was the not-too-distant future, perhaps 10 to 15 years from now, but with COVID-19, the need is urgent. Investments and policies to provide nationwide distance learning, which had been perceived as highly risky before the pandemic, have become priority efforts of most systems. Remote learning investments have been widespread, and this is a welcome development; even if the quality and depth has been insufficient, it has shown that fast-paced innovation is possible.

**The crisis has emphasized the crucial role that schools play.** Although business as usual left much to be desired, school closures have highlighted how important the school is as an institution that organizes education service delivery, as well as the critical role it plays in equalizing learning opportunities and skill acquisition, in providing nutrition and other non-education services, and in making labor markets and societies function better. First, the education process is about social interaction. It is impossible to completely replace face-to-face interaction with teachers and the school community; this interaction is particularly important in the early years (that is, pre-primary) and in primary education. And school is recognized as one of the most powerful instruments to equalize opportunities. Second, for the most disadvantaged families, schools are often an opportunity to obtain nutrition, water, sanitation, hygiene, technology, and connectivity that they lack at home. But third, the pandemic has also made painfully clear that school closures affect society's functioning as a whole. Schools perform an important childcare function that enables parents and other caregivers to participate in the labor force. During the pandemic, women's labor force participation has suffered significantly (Alon et al. 2020; Collins et al. 2020; Lemieux et al. 2020). And for many children, particularly those who are poor, the school is a safe space to learn, where they can find stimulation and a space for themselves that they cannot find at home. The pandemic has reinforced the urgent need to invest strategically to strengthen traditional models of education delivery while building resilience and learning continuity beyond school walls. Blended learning will be a larger part of the future and a critical element of resilience, but ensuring a good educational experience at school will continue to be one of the main elements of equalization of opportunities.

**The pandemic has also highlighted that resilient education systems require that long-standing inequalities in learning outside of the physical school environment be addressed.** For too many children around the world, the core learning experience broke down with the advent of school closures due to the pandemic. Countries have been forced and have rushed to

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1    Several recent reports examined some of these experiences, as well as shifts in education systems. See for example, WEF 2020; OECD 2020a; Save Our Future 2020; Vegas and Winthrop 2020.

**BOX 1.** REMOTE LEARNING DURING COVID-19: LOW UPTAKE, INEQUALITY, AND THE DIGITAL DIVIDE HINDER ATTEMPTS TO ENSURE LEARNING CONTINUITY FOR ALL STUDENTS

**In responding to the pandemic, education systems have been forced to implement remote learning approaches swiftly at scale.** These attempts have exposed the digital divide that disproportionately affects poor countries and poor communities within countries. Only 3 of 54 low-income countries or those affected most by fragility, conflict, and violence have an Internet penetration rate of more than 50 percent, so low-income countries rely on radio, television, and mobile telephones to reach students during the pandemic (World Bank 2019b). Although digital resources are important, physical resources cannot be ignored. Rwanda has leveraged existing radio content to rapidly deploy an interactive radio instruction program on a variety of subjects for primary and secondary school 7 days a week on 10 radio stations that cover most of the country (World Bank 2020c). In Kenya, a recent survey showed that 19 percent of learners accessed instruction through the television, 15 percent through radio, 12 percent online, 12 percent through print materials, and 9 percent via social media (Kenya National Bureau of Statistics 2020). Connectivity is critical in ensuring wide, equitable access to resources. In countries like Sierra Leone and Guinea, which have low rates of connectivity, COVID-19 is the second time in the past decade that schools have shut down for a long period. Many of the students that leave school during a public health crisis do not return (Bandiera et al. 2020). Investments in connectivity and digital technology are urgently needed to ensure the equity, strength, and resiliency of the system in the face of shocks.

**Even when students have access to remote learning programs, uptake is a major challenge.** For example, in Bangladesh, the Ministry of Education and Ministry of Primary and Mass Education implemented remote learning via online platforms and Sangsad TV beginning in March 2020. A survey of a random sample of economically disadvantaged students showed that only 21 percent had access to the online programs and that only 2 percent of those actually used them. Furthermore, although 86 percent of students were aware of the government's television-based learning programs, only half of students with access watched them (World Bank 2020d). In Brazil, the government introduced a multimodal response to school closures that varied according to state and contained television-based learning, online learning, mobile learning, and printed learning materials. A study in selected states showed that, although the remote learning initiative reached 74 percent of the student population, only 37 percent of students participated (Education Global Practice forthcoming). These findings emphasize the importance of ensuring that remote learning programs are of high quality so that learners are motivated to engage and investing in human infrastructure—teacher training, teachers' and students' digital skills, parental support—so that all students benefit from nontraditional modes of education delivery. The upcoming report, *Reimagine Education: Technology and Innovation Education at the World Bank: A Post-COVID Vision,* highlights resources on how to improve multimodal remote learning.

re-create these learning experiences remotely using multiple modes of delivery. But these efforts have magnified preexisting causes of learning inequalities—chiefly disparities in home learning environments and the digital divide. The pandemic has evidenced the consequences of not having closed the digital divide, inequalities in access to materials and a safe space to learn at home, and different capacities of parents and communities to support children beyond school walls.

**The pandemic has revealed the crucial role that parents and caregivers play in children's learning and the importance of the home learning environment in complementing learning at school.** With home as the primary, and in most cases sole, learning space during the pandemic, parents and other caregivers have had to take on additional responsibility for children's learning. Many parents internalize that they have a critical role in the education process of their children, and they have the skills to play that role. But that is not true for all. Parents are not there to replace teachers, but they have an essential role in creating a favorable space for children to learn. Support to parents in this endeavor should be part of public policy. Disadvantaged students experience larger learning losses than their peers during out-of-school periods, probably because they lack resources at home, and are therefore likely to fall even further behind during school closures (Alexander, Entwisle, and Olson 2001). A study of 35 countries found that approximately half of children do not have a single book at home (Manu et al. 2018). Inequalities in

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connectivity and access to technology at home exacerbate this situation, as the pandemic has again highlighted what we already knew: parents and caregivers are decision-makers and stakeholders in their children's education and play a crucial role in nurturing children's holistic development. Thus, to ensure learning continuity during the pandemic and beyond, it is vital that public policy prioritize the quantity and quality of learning resources available at home, that support be provided to parents and caregivers, and that their buy-in and commitment to new models of education delivery be obtained.

**The pandemic has also underscored the need to address the digital divide and harness technology strategically in education delivery.** Many countries have leveraged or expanded investments in education technology to provide access to remote learning using multimodal solutions (radio, television, mobile phones, digital and online tools, print). These attempts have had, at best, mixed results. Although the significant investments in and efforts to provide remote learning have allowed systems to provide some learning continuity while schools are closed, they have in many cases exacerbated learning inequalities because of the huge digital divide (box 1).

**Technology is essential to transform traditional models of delivering education, make systems more resilient, and accelerate progress in learning.** Even before the pandemic, education technologies (EdTech) showed promise in some settings as tools to enable access for

children in remote areas and with learning disabilities and to make remedial education possible for those falling behind. Although in most cases those potential solutions failed to scale, there is mounting evidence that EdTech can be harnessed to customize instruction to fit each child's strengths, needs, and individual learning path. For instance, adaptive software can enable adaptive and personalized learning and facilitate teaching at the right level, a proven effective pedagogical strategy, and enable data- and evidence-based decision-making (Muralidharan, Singh, and Ganimian 2016), but technology is just a tool and not a magic bullet to improve learning. Even if countries were able to deploy new technologies to reach all learners, those technologies will not fully replace the experience and benefits of in-person teacher-student interactions. But technology has huge potential to support and enhance teacher's performance and facilitate continuity of the learning process between home and school.

**If education systems build on these lessons from the pandemic, it is possible to build systems that are more equitable and resilient.** Transforming education delivery and accelerating progress in learning might seem aspirational, given the huge challenges countries are facing during COVID-19. But there is a window of opportunity for reform and for more impactful investments. The greater use of remote learning approaches, along with better support for parents and caregivers, can be used as a launching pad to build more equitable, more resilient education systems, improving learning in schools and at home and providing momentum that countries can and should capitalize on.

**Without visionary, strategic action, the crisis will almost certainly widen gaps between advantaged and disadvantaged children and youth and weaken the performance of education systems for years to come.** The need to act with ambition and bold aspirations is great, which is why a clear vision of what education systems will be like in the (not-too-distant) future of learning, to inform efforts to build back better, is so important. In what follows we present our vision and what it would take to realize it, starting with investments and policies; we hope that policymakers and other stakeholders can seize the opportunities that this crisis presents to transform education systems so they can ensure learning for everyone, everywhere.

# The Future of Learning

Our vision for the future of learning centers on the aspiration that learning occur for everyone, everywhere. This is consistent with the goal that the World Bank laid out for its education sector work in the early 2000s: equitable education systems that ensure learning for all (World Bank 2011). The COVID-19 pandemic has made it clear that a resilient education system requires that traditional models of education delivery be improved and the inequalities in access to and quality of learning conditions outside of the school be addressed. Major inequalities exist in learning environments at school and at home, which public policy must address. The vision is not just that learning occur for all children, but also that it happen everywhere, both in school and beyond the school walls.

**The science of learning tells us that learning needs to happen with joy, purpose, and rigor, which is the defining feature of the future of learning and is what guarantees that students are engaged and motivated to learn.** The joy of learning comes when a learner's skills are stretched and the task is challenging but not impossible. In addition, for learners to see purpose in what they are learning, curricula and instruction need to align what is being taught with what is relevant, important, and applicable. Moreover, learning happens through an appreciation of rigor and a striving toward mastery and excellence, often through deliberate practice of what is being learned. Students who struggle to keep up with the pace of instruction or are not challenged enough are likely to disengage from learning.

**The shift to remote learning during COVID-19 has highlighted the importance of learning with joy, purpose, and rigor.** An ominous trend during the pandemic has been reports that students are feeling disconnected from their learning community and unmotivated to learn. This can be directly related to illness, insecurity, and shifting circumstances during the crisis; students who do not feel healthy, safe, and happy will not learn. Furthermore, many students have transitioned from a heavily structured, guided environment with little autonomy to an environment in which they need to direct their own learning. Disengaged learners are not a new phenomenon. Many systems traditionally emphasize only rigor, seen for example in the emphasis on high-stakes examinations in many countries. Recent months have highlighted how education systems need to design the learning process to keep students engaged. During the pandemic and beyond, to succeed, children must enjoy learning and believe in their ability to learn, setting them up to see learning as a life-long pursuit. Technological change and automation make lifelong learning more important, because they require adaptability and put a premium on "learning to learn"—or having the curiosity and ability to keep exploring and acquiring new skills.

**An enhanced learning experience for everyone, everywhere can only be realized through fundamental transformation of the different pillars of a robust education system.** The strengthening of the education system should focus on learners, as the end users, experiencing the learning of the future. This learning experience results from interactions between teachers and learners and their peers (no longer limited to classmates), supported by parents, learning resources, schools, and school leaders. Thus, the vision is manifested through changes in each pillar so that learners are engaged, teachers facilitate learning, learning resources are adequate and diverse, schools are safe and inclusive, and systems are well managed. Figure 2 summarizes the changes necessary in each pillar. Although the term "school" evokes traditional, physical spaces for learning (which are still critical), our use of the term transcends physical boundaries and encompasses home and the community in

## Figure 2: A Vision for the Future of Learning

**GOAL:** LEARNING WITH JOY, PURPOSE, AND RIGOR FOR EVERYONE, EVERYWHERE

| Learners are engaged | Teachers facilitate learning | Learning resources are adequate and diverse | Schools are safe and inclusive | Systems are well-managed |
|---|---|---|---|---|
| All learners engage in learning that is personalized, inclusive, holistic, and relevant to their realities. | Teachers play the role of facilitating learning of all students rather than delivering content and are provided with the training and holistic support they need to play this role. | Learning resources are adequate and of rich variety so that each child can access quality learning experiences anywhere. | School environments have the necessary infrastructure, human resources, policies and norms to enable all children to learn in a welcoming environment, free from discrimination, violence and bullying. | At the school level, school leaders are pedagogical leaders and engage with technology to enable more effective and efficient school management. |

Parents, Caregivers, and the Home Learning Environment are Supported
Technology Promotes Learning Objectives

a continuum that goes beyond school walls. As such, the vision for strengthening each of the five pillars encompasses support for the home learning environment, as well as the strategic harnessing of technology inside and outside of school.

**This vision, and the ensuing transformation of education delivery, starts with policy actions today.** It may seem far off for some education systems, maybe even unattainable in the near future, but the vision can guide and inform actions that policymakers can and should implement now. These key policy actions for each pillar are discussed in Section 3. Section 4 describes the core principles needed to underlie these reform efforts to sustain and expand these policy actions to achieve the vision for the future of learning.

# Learners

| Pillar | The vision | If we don't strive for this vision... |
|---|---|---|
| Learners are engaged. | ∞ Instruction is tailored to the needs, skills, strengths, and interests of learners, with learners taking ownership of the learning process.<br>∞ The whole child and holistic learning are emphasized. | ∞ There is a one-size-fits-all approach to teaching and learning.<br>∞ Learners are passive and unengaged.<br>∞ There is an excessive or sole focus on academic outcomes. |

**The future of learning will manifest in learners who are engaged through instruction tailored to their needs, with the learners taking ownership of the learning process, and with a focus on the whole child and holistic learning.** These ideas have percolated in the education field since at least the late 19th/early 20th century (Germán 2017; Kocic 2004; Williams 2017). They are central to the goal of learning with joy, purpose, and rigor and recent advances in the science of learning and education technology can facilitate them.

**Instruction needs to be tailored to student needs, skills, strengths, and interests by matching learning tasks and activities to individual students' needs and aligning tasks and activities with students' contexts, interests, talents, and aspirations.** Such personalized instruction can happen with or without the use of education technology (J-PAL 2017, 2019) and contributes to a positive, effective learning experience because students experience learning with joy when given tasks that use their skills to their utmost while challenging them to go beyond their current level of mastery (Csikszentmihalyi 2009; Vygotsky 1978). In addition, when learners can relate what they are learning to aspects of their everyday lives (Brophy 1999) and understand how learning is useful to them, their motivation increases, and learning is easier to consolidate. Tailored instruction was important before the pandemic (Banerjee et al. 2007; Duflo, Dupas, and Kremer 2011) and is more important than ever to help students recover learning losses from school shutdowns and prevent widening inequalities.

**For learners to be engaged, they should have ownership of and autonomy in the learning process, with the goal of mastery.** Students should be provided with multiple methods and tools for learning (Shams and Seitz 2008) and enjoy some degree of autonomy in their learning paths and modalities (Ryan and Deci 2000). At the same time, learning needs to be goal directed and intentional to ensure that achievement improves over time, with the goal of mastering content and skills (Coyle 2010; Eskrei-Winkler et al. 2016). This ownership of the learning process is particularly relevant during the pandemic, when students are having to engage in high levels of independent learning, and it prepares students for a workplace that increasingly values self-direction and initiative.

**Efforts targeted at foundational learning will need to involve (but cannot be limited to) structured teaching and learning approaches.** The science of learning shows that structured, deliberate practice plays an important role in acquisition of high-level cognitive skills and learning approaches (Anderson et al. 2001). Skills acquisition is a cumulative process in which structured teaching and learning approaches aimed at automaticity of basic skills lay the foundations for deeper learning (Samuels and Flor 1997). For example, use of structured lesson plans can improve teaching practices and support teaching of foundational skills in contexts in which teachers do not receive adequate training and support.[2]

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2  This is advocated in the World Bank Literacy Policy Package, and the recently launched Global Education Evidence Advisory Panel has identified it as one of the smart buys to improve learning. See http://pubdocs.worldbank.org/en/753141573491748212/Ending-Learning-Poverty-Ensure-political-and-technical-commitment.pdf and http://documents1.worldbank.org/curated/en/719211603835247448/pdf/Cost-Effective-Approaches-to-Improve-Global-Learning-What-Does-Recent-Evidence-Tell-Us-Are-Smart-Buys-for-Improving-Learning-in-Low-and-Middle-Income-Countries.pdf

**The science of learning also shows that children learn better when they are physically and emotionally well (Gutan and Vorhaus 2012), yet an estimated 1 billion children experience physical, emotional, or sexual violence each year (World Bank 2019c), and globally, nearly one-third of teens are bullied in school (UNESCO 2018).** In addition, there is evidence of the high toll of the pandemic on the wellbeing of learners, with heightened food insecurity, increased home-based violence, and greater economic instability increasing stress for students. It has also highlighted the need to nurture socioemotional skills and provide socioemotional support for students (Asanov et al. 2020).

**Adequate resources must be allocated to an integrated whole-child approach that fosters social and emotional competencies alongside physical and cognitive development.** Social and emotional competencies include those related to emotional regulation, collaboration, and engaging with others (OECD n.d.) and have been linked to good academic outcomes (Corcoran et al. 2018). Acquiring skills that computers cannot emulate well, such as critical thinking, collaboration, and problem-solving, is becoming increasingly important for students to be competitive in the job market. Emphasizing such socioemotional competencies helps set students up for success in school and beyond.

**Children must be set on high-development trajectories through early childhood nutrition, stimulation, and care.** From the prenatal period to age 3, the brain experiences the fastest synaptic growth. Children in healthy, stimulating, and caring environments develop more complex and robust neural circuits on which they can build further learning throughout their lifetimes. In contrast, weak foundations result in learning gaps which trap children in lower developmental trajectories from which it is difficult to escape. Thus, it is crucial to provide children with intersectoral interventions that combine health, nutrition, and stimulation (World Bank 2018a).

THE FUTURE OF LEARNING

REALIZING THE FUTURE OF LEARNING

# Teachers

| Pillar | The vision | If we don't strive for this vision... |
|---|---|---|
| Teachers facilitate learning. | ∞ Teachers' main role is to facilitate active learning, in school and beyond the school walls<br>∞ Teachers are equipped to respond to shifts in the other pillars of the education system.<br>∞ Teachers receive holistic support, and teaching is a socially valued career. | ∞ Teachers' primary role is to deliver content in the classroom.<br>∞ Teachers are equipped to teach using only traditional, teacher-centered approaches such as rote learning.<br>∞ Some teachers might suffer from low motivation, and teaching does not always attract the best candidates into the profession. |

**The quality of teaching at all levels—whether by teachers, instructors, professors, or caregivers—is the most important driver of learning in an educational system.** Estimates from various countries show that switching from a low-performing to a high-performing teacher can increase a student's learning outcomes by what would be equivalent to more than 2 years of schooling (Bau and Das 2017; Buhl-Wiggers et al. 2017; Evans and Yuan 2017), and rigorous evaluations show that interventions delivered through teachers, for example through the use of structured pedagogy, are among the most effective to improve learning (Béteille and Evans 2019). The quality of a school system never exceeds the quality of its teaching workforce (Schleicher 2018).

**The value of teachers goes far beyond these effects on measured cognitive learning.** In successful systems, teachers help students learn and grow holistically, in and out of school. Teachers are the first role models that young people encounter outside the home. They make learning fun, shape students' attitudes, exemplify empathy, teach teamwork and respect, and build student confidence. Effective teachers prepare students for a world in which they must interact with others and adapt quickly to change and in which success hinges on knowledge, as well as attitudes and behavior.

**Countries that embrace the future of learning are those in which the teaching career is socially valued.** Students learn more where teaching is well regarded; in Korea and Singapore, for instance, two-thirds of teachers agree that teaching is valued in society (Béteille and Evans 2019). The teaching profession should be reformed to increase the social value of teaching so that people with the right aptitudes and motivation are attracted into teaching careers. This requires the careful and meritocratic selection of entrants to the teaching workforce. In many countries, political considerations influence who can become a teacher, which clearly divorces the profession from its mission of focusing all efforts on students' learning. In those cases, reform is politically risky but is essential if the objective is to focus the system on learning. And beyond a meritocratic selection, social value of the profession requires that it not only be reasonably rewarding from a financial perspective but, more importantly, that it also be a professionally challenging occupation. The policy actions to achieve this are discussed in Section 3.2 (Darling-Hammond, Hyler, and Gardner 2017; Kraft, Blazar, and Hogan 2018; Popova, Evans, and Arancibia 2016).

**The pandemic has underscored that education is inherently a social experience, that teachers will continue to play a crucial role for the foreseeable future, and that teachers remain at the heart of the learning process.** Remote learning has propelled technology to the center of education, magnifying gaps in teachers' access to technology and in their knowledge of how to use it effectively. These gaps need to be closed, because technology has an immense potential to help teachers be more effective. It can support teacher in the complex task of ensuring that all student learns, providing each student a different level of challenge and support, and offering a variety of tools to make the learning process more stimulating and engaging. Technology can also support the teacher to monitor

student progress better. But the effectiveness of these tools depends on how well they are used by the teacher. Technology cannot substitute for teachers; education will (and should) continue to be a human-interaction-intensive activity. In the future, the key challenge will then be to find the appropriate balance between supporting the adoption of digital tools and continue to invest in the human factor.

**The pandemic has also highlighted the need to transform how teachers teach and to improve the support they receive in many low- and middle-income countries.** Remote learning has propelled technology to the center of education, magnifying gaps in teachers' access to technology and in their knowledge of how to use it effectively. Providing teachers with technological infrastructure and facilitating remote teaching are important coping strategies during the pandemic, but these measures alone will not lead to teachers who can support joyful, rigorous, purposeful learning. In many low- and middle-income countries, teaching needs to be transformed in three crucial areas to achieve the vision for the future of learning: the shifting role of the teacher from delivering content to facilitating learning, in person and remotely; updating the content of teacher professional development to reflect changes in the other pillars of the education system; and greater focus on supporting teacher wellbeing.

**To realize the future of learning, the role of the teacher must evolve to facilitate learning, rather than simply to deliver content.** This is again an idea that has roots in the late 19th and early 20th centuries and is still relevant (Ültanır 2012). Learners increasingly have access to knowledge that goes beyond what teachers or textbooks can deliver, whether through technology or peers. The role of teachers now must be revamped, moving their responsibilities away from delivering content to the more complex role of facilitating learning, with a focus on teaching students how to learn and empowering them to realize their own potential. Prerecorded teaching material delivered using various media, from computers to television to radio, is taking on a larger role in education. This trend is likely to outlive the pandemic; risks of further waves of the pandemic are nontrivial, and other disruptions such as

natural disasters may mean that hybrid learning that alternates between remote and in person becomes the norm. Therefore, it is imperative that students take more control over their own learning but equally important that teachers let them take ownership, by embracing the shift in their role from deliverer of content to facilitator of learning. Schools should therefore be filled with effective, empathetic teachers who have internalized the immense responsibility they have in shaping young people's lives. Good teachers are themselves lifelong learners who inspire, equip, and empower students to realize their potential and succeed. Good teachers know that when a child does not learn, it is not the child's fault.

**For teachers to facilitate learning effectively, they need to have sufficient subject content knowledge and mastery of core pedagogical practices, which many teachers currently lack.** Countries need to invest in preparation and support for teachers to master these foundational skills, which are central to the complex role of facilitating learning with joy, purpose, and rigor (Bold et al. 2017; Molina et al. 2020). In addition, professional development that prepares teachers for the future of learning helps them cultivate socioemotional competencies in students and also provide personalized instruction and support for continuous and differentiated learning.

**Professional development programs need to equip teachers to facilitate the learning process using different modalities of instruction—in-person, remote, or blended.** Remote learning efforts have revealed that teachers are not equipped with the technological and digital pedagogical skills they need. Replicating lessons designed for an in-person class is ineffective for a remote audience. In addition to cultivating an ability to teach effectively using information and communication technologies, it is critical to develop teachers' digital pedagogical skills so they can critically assess when and how to incorporate digital tools. In a world in which multimodal learning may increasingly become the norm, teacher proficiency in digital education delivery is more crucial than ever, because teachers need to learn how to use blended teaching methodologies that combine remote and classroom teaching.

**More attention needs to be given to teacher wellbeing.** Supporting and motivating teachers is crucial to ensuring effective teaching. Successful systems care about the physical and socioemotional well-being of teachers, and about teachers working together to support each other. Ministries of education should collaborate with health authorities to detect signs of burnout early, reduce stigma regarding mental health support, and adjust and distribute teacher workloads to manageable levels (World Bank 2020a). Enhancing teachers' intrinsic motivation is also important, which the crisis has revealed, with many teachers reporting high levels of stress and lack of motivation (Hawke 2020). Peer-to-peer support is an increasingly common mechanism to maintain teacher motivation. Structured peer-support groups are low-cost and can help teachers manage the effects of challenges such as the ones posed by COVID-19(Teach for All 2020; Teachers Thematic Group 2020). Peer-to-peer collaboration is also linked to greater job satisfaction and teacher self-efficacy (OECD 2020b). These "bottom up" options are important complements to centralized, "top down" approaches to supporting teachers.

## Learning Resources

| Pillar | The Vision | If we don't strive for this vision... |
|---|---|---|
| Learning resources are adequate and diverse. | ∞ A flexible, competency-based curriculum is developed that prioritizes foundational skills and learning to learn guides instruction.<br>∞ Key actors have access to a wide range of high-quality resources that support good pedagogical practices and personalized learning.<br>∞ Learning resources encompass the home and wider community. | ∞ Curricula are overly rigid and lead to rote learning.<br>∞ Learning resources are one-size-fits-all, with little use of technology.<br>∞ Learning resources are limited to the traditional classroom. |

**A flexible, competency-based curriculum that prioritizes foundational skills and nurtures learning to learn must guide learning.** Learning with purpose should be programmatically embedded in the curriculum. In successful systems, curricula are aligned to the needs of students and to ambitious but achievable expectations of what all students should master. They serve as a clear and useful guide to teachers and principals. They include a strong focus on foundational competencies, informed by the views of the broadest swathes of society on what is most important for students to know and be able to do. At the same time, those curricula strike a context-sensitive balance in engaging learners on global and local problems such as the effects of climate change, new technologies, and their interdisciplinary application in project-based learning. Effective curricula also include flexible, competency-based approaches that nurture higher-order skills such as creativity and critical thinking and provide students with the means and channels to demonstrate achievement in acquiring cognitive, socioemotional, and digital skills. Student progress should be measured in terms of competencies acquired and knowledge mastered, rather than time spent in a given course.

**Learners and teachers should have access to a wide range of high-quality, multimodal resources that support the shift to better pedagogical practices.** The development of open-source education software with high-quality content has facilitated the process of identifying and sharing relevant learning materials. Never before has such a wide range of learning resources and modalities been available to stimulate learning, with television- and radio-based instruction in particular emerging during the pandemic. The science of learning emphasizes how multimodal resources that allow children to learn through different senses can help stimulate learning (Brand and Dalton 2012; Hayes, Turnbull, and Moran 2018). Learners and teachers must

have access to a wide range of physical and digital resources, including print, digital, and hybrid textbooks; other books, such as storybooks and workbooks; videos; play materials; and resources from outside the school. This range of resources will enable remote learning, as well as different forms of instruction, such as competency-based instruction, project-based learning, maker education, and learning through play, that can help promote 21st-century skills such as critical thinking, collaboration, and creativity (Dougherty 2013; Zosh et al. 2017). These resources also enable approaches such as gamification of learning (Araya et al. 2019) and edutainment (Banerjee, Ferrara, and Orozco-Olvera 2019), which are particularly pertinent to the goal of learning with joy.

**Interactive, adaptive digital resources can enable the shift to personalized learning by providing relevant content based on learners' level and progression.** Technology could support better teaching, for example by allowing teachers to continuously assess children's learning and deliver individualized instruction (Angel-Urdinola 2020; Baron, Taveras, and Zúñiga 2018; World Bank 2020e; 2019d; 2017a). Big data and machine learning tools can help assess each student's level, map competencies, and track progress in open learning systems to provide personalized, high-quality digital content, facilitating the use of student-centered pedagogical practices that support learning in the school and beyond (Baron, Taveras, and Zúñiga 2018; J-PAL 2019). These resources need to be integrated strategically into in-person and remote instruction to improve learning experiences and outcomes.

**Learning resources must be expanded beyond the school.** As discussed above, the pandemic has highlighted how disparities in the home learning environment—including differences in caregiver ability to support learning at home, in adequate spaces to learn, in availability of reading material, and in availability of connectivity or devices—widen learning inequalities. Education systems need to provide learning resources for the home environment along with caregiver support and guidance on how to use the learning resources to boost learning outcomes (World Bank 2017b). Significant investments should be made in providing reading and play material, particularly for poorer households, and


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increasing connectivity for all students, to make open-access digital learning materials increasingly and equitably available outside the school.

**Beyond the home, learning resources should be expanded to include the outdoors and the wider community, to ensure learning that is in tune with economic and cultural contexts.** Outdoor activities can increase engagement and creativity and reduce stress (Dettweiler et al. 2017; Hoody and Lieberman 1998; Kuo, Browning, and Penner 2018). Collaboration with local stakeholders could lead to synergies with public facilities, such as public libraries and sports complexes, that can serve students and the wider community and encourage formation of natural ties. These connections with the wider community, including local employers and entrepreneurs, could also serve as an early introduction to different professions, with role models from the community helping to (re)shape social norms around some occupations and provide information that students need to choose an appropriate educational trajectory.

## Schools

| Pillar | The vision | If we don't strive for this vision... |
|---|---|---|
| Schools are safe and inclusive. | ∞ School buildings are flexible and dynamic.<br>∞ There is a whole-school and beyond-the-school approach to safety, with the policies, mechanisms, and training necessary for key actors to prevent and address violence against children and youth.<br>∞ There is a whole-school and beyond-the-school approach to inclusion, with the necessary policies, infrastructure, learning resources, and human resources to enable all children to access, participate in, and achieve learning. | ∞ Students and teachers are in dangerous, unhealthy, or uncomfortable spaces that are not conducive to learning, resulting in poor learning outcomes and increased repetition and dropout.<br>∞ Students experience violence (e.g., cyber or physical bullying) and discrimination in school, which hinders their learning and discourages them from attending school.<br>∞ Students are excluded from learning communities because of language barriers, disabilities, gender, race, or other forms of marginalization. |

**Learning with joy, purpose, and rigor can only occur in spaces with the infrastructure, human resources, policies, and norms to enable all children to learn in a welcoming environment free from discrimination, violence, and bullying.** Learning spaces should be flexible and dynamic; there should be a whole- and beyond-the-school approach to prevent and address violence and abuse against children and youth, including in the digital world; and there should be a whole- and beyond-the-school approach to guarantee that every child feels welcome and has the possibility to thrive, irrespective of his or her gender, race, disability, first language, or other characteristics. This will involve using the principles of Universal Design for Learning and, when feasible, ensuring that learners can participate in learning and instruction using their first language. Elements of safety and inclusion are crosscutting themes that are included in the other pillars. For example, tailoring instruction to student needs, skills, strengths, and interests is a critical element of inclusion, as discussed in the learners pillar.

**Even though teachers are far more important than school buildings, school infrastructure affects how children learn, especially when other reforms allow effective use of space** (Barrett et al. 2015). Too many children study in schools that lack the minimum conditions to ensure that children are healthy, such as access to proper water, sanitation, and hygiene facilities, or are unsafe and unable to stand natural disasters.[3] Schools should be accessible, located reasonably close to where pupils live to reduce transportation costs, reduce dropout, and diminish violence risks; right-sized, to ensure adequate class sizes; healthy, with basic services (e.g., water, sanitation, and hygiene) and proper lightning, air quality, temperature, acoustics, and opportunities for outside play; climate resilient, to protect against natural hazards and ensure continuity of education services despite external shocks; inclusive, to guarantee that everyone can attend, particularly students with disabilities, taking into account the needs of students and local climate and cultural conditions; and digitally connected, with adequate digital infrastructure and connectivity to ensure access to resources aligned with pedagogical needs (Barrett et al. 2019).

**Schools need to shift from traditional classrooms to flexible, open, dynamic spaces that facilitate learning.** Most schools are built to accommodate a hierarchical, teacher-centered learning experience, designed as "cells and bells," in which students occupy one cell (the classroom) until the bell rings and then move to another cell—a model that has been prevalent

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3 Data from the Global Baseline prepared by the World Bank Global Program for Safer Schools indicate that, worldwide, earthquakes and tropical cyclones put more than 1,000,000 school buildings at risk. On an annual average basis, earthquakes may result in more than 2,400 fatalities, and earthquakes and tropical cyclones combined may cause nearly USD7 billion in damage.

for well over a century (Nair 2017) and results in learning spaces that limit what teachers can do, for instance preventing alternating between instruction styles or grouping students according to ability (techniques that research has found are associated with better math and science results and less bullying) (Shmis, Ustinova, and Chugunov 2020). "Construction should not drive instruction" (Nair 2017); rather, learning spaces need to be student centered and age appropriate and support various forms of instruction (e.g., peer-to-peer learning, team collaboration, individual work). The benefits of flexible learning spaces have been observed during the pandemic, because adaptable learning spaces have a significant advantage over the traditional classroom setting when implementing social distancing protocols to reduce transmission.

**In addition to having adequate infrastructure, as discussed in the vision for learners, children and youth need to feel respected, valued, safe, and happy in school.** If a child or young person does not feel welcome, have a sense of belonging, and feel happy and safe at an educational institution, not even the right pedagogy and adequate learning space will lead to learning. Violence has large effects on a wide range of education indicators, leading to losses in learning and children dropping out of school. It also has short- and long-term effects on health, leading among others to suicidal thoughts, a variety of negative health outcomes, and high-risk behaviors (e.g., alcohol and drug use). The economic cost of violence in schools is high (Wodon et al. 2020), so schools need to be safe and inclusive, which requires a whole-school and beyond-the-school approach including policies, mechanisms, and training for key actors to prevent and address violence and abuse.

**A whole-school and beyond-the-school approach involves the community, families, and all school actors working together and committing to eliminate any type of violence in school** (Weare 1999). Development and implementation of successful approaches provides an opportunity for schools to effect change at the community level and ensures consistency in the life of children by challenging social norms that allow violence to happen. Schools are among the first institutions in which children start their social biography and have the opportunity to learn and

practice citizenship skills, including learning to live together, manage conflict, identify solidarity, avoid biases and stereotypes, be empathic, tolerate different views, and learn to disagree. In short, schools are among the first institutions in which values that are critical as foundations of good citizenship can be learned. To enable this and a safe environment for learning, schools require strong child protection systems, including child-friendly referral pathways to ensure that violence can be reported safely and in a way that respects the best interests of child survivors, and services to support them on their path to recovery and healing. In successful systems, codes of conduct are established, and training provided for all school personnel, including teachers and school leaders, on their responsibilities not only for their own behaviors, but also for protecting children and reporting violence. School leaders are trained on how to report incidents of violence safely and systematically at the school level, contributing to a solid, consistent reporting system at the national level. To prevent all forms of violence, including bullying, these approaches should include a focus on participatory school environments and interventions to nurture socioemotional skills in learners (Diazgranadow and Noonan 2015).

**A whole- and beyond-the-school approach is also required to guarantee that children feel included and welcome.** Policies and practices that ensure that children are safe must consider the digital world. The risks of the digital world (e.g., exposure to age-inappropriate content, cyberbullying, unsolicited contact from adults, data harvesting) affect children disproportionately because of their developmental vulnerabilities and their tendency to adopt emerging technologies quickly (5Rights Foundation 2020). In a world where the use of digital tools and resources will continue to become more prevalent, as many families turn to online resources to continue children's learning, the risk of experiencing harm online is higher and likely to increase. Caregivers and educators, who often have limited insight, knowledge, and skills to navigate children's digital world, may struggle to address digital threats to safety and inclusion. As education systems transition to new models of education delivery with an emphasis on learning outside of school, they must strengthen their ability to protect children

from violence at home and online, building on experiences and lessons learned during the crisis. This includes policies and cultural shifts to ensure that no child is excluded from the education system, along with grievance redress mechanisms to enforce these policies. It also includes shifts covered in the other pillars, such as ensuring that learning resources are accessible and inclusive (pillar 3) and training teachers in providing support for all learners (pillar 2).

**Recognizing that all learners are unique and have different needs and interests, our vision for the future of learning encompasses flexible ways to access and engage with learning resources.** This can build on the principles of Universal Design for Learning (Hayes, Turnbull, and Moran 2018). which involves disseminating resources in multiple formats and with reasonable accommodations to support all children, including those with disabilities. As remote learning was introduced at the beginning of the COVID-19 pandemic, many children found themselves unable to participate, for example because of suspension of face-to-face specialized services for children with disabilities or because of hearing or vision impairments that limit the effectiveness of educational television and radio initiatives. These limitations should be addressed through efforts such as teacher training focused on supporting children of diverse abilities (McClain-Nhlapo and Thomas 2018) and by providing multimodal resources (e.g., reading materials in braille, or educational television with sign language interpretation and closed captioning) (World Bank 2020c). Teachers, parents, and caregivers should also have access to support services and structures and where possible to teaching assistants and resource staff who can help tailor the learning experience to each learner.

**Another critical aspect of inclusion is teaching children in a language that they use and understand.** A significant body of evidence from around the world shows that children learn best when

taught in the language they speak, use, and understand best and that schools that offer students opportunities to study in their first language tend to have parents and communities that are more involved in school (Collier and Thomas 2004; Thomas and Collier 2002). Yet 40 percent of children are still taught in a language they do not fully speak or understand (Eberhard, Simons, and Fennig 2019; UNESCO 2016), and many systems require that teachers provide instruction in languages in which they are not proficient without the necessary support (Lyytinen et al. 2019; Ojanen et al. 2015; Sampa et al. 2018). Students should be able to learn in their first language, supported by teachers who are proficient in their first language and by adequate learning resources, including EdTech, which could provide cost-effective solutions for providing resources in multiple languages.

## System Management

| Pillar | The vision | If we don't strive for this vision... |
|---|---|---|
| Systems are well managed. | ∞ School leaders (principals, head teachers, school directors) are pedagogical leaders closely involved in student learning, mentoring teachers, and engaging with the wider community.<br>∞ School leaders are adept at using technology and data to deliver results, with support from a competent, professional bureaucracy in the wider education system | ∞ School leaders are administrative managers removed from the learning process.<br>∞ School leaders spend most their time managing and coordinating school inputs. |

**For an education system to be well managed, school leaders (head teachers, school directors, principals) must play a critical role at the school level.** At the school level, successful systems recognize the importance of the school principal to manage the school, its human and financial resources, and the teaching process. The principal has to deal with all management and administrative issues of the school as an institution, while at the same time serving as a leader of the teaching workforce and inspiring a sense of excellence, innovation, and continuous improvement to the school community. The pandemic has highlighted the importance of their role in seeking innovative solutions in challenging circumstances. To fulfill this complex role, school leaders need the support of a competent, professional bureaucracy in a well-managed education system (see discussion in section 3.5). A school system is an extremely sophisticated machine that delivers a complex service to millions of students working with hundreds of thousands of teachers every single day. Successful systems seek to attract a high-quality, multidisciplinary bureaucracy that can design and implement the continuous rollout of education reforms and policies.

**As with teachers, there needs to be a shift in the roles school leaders play to improve student learning experiences at scale.** The outbreak of COVID-19 has emphasized this shift in roles as teachers, parents, and students have looked to school leaders for guidance on how to maintain education as the crisis unfolds. With few precedents on how to achieve successful learning remotely, especially in systems with poorly developed technology infrastructure, school leaders have been forced to innovate. For many school leaders who are used to performing largely administrative functions, the role of innovator-in-chief is unfamiliar. School leaders need to move away from conventional administrative roles to become more engaged in learning and increase their familiarity and engagement with technology to enable effective, efficient school management and leadership.

**School leaders' roles need to evolve from performing conventional, administrative duties**

**to becoming pedagogical leaders.** The role of the school leader should move away from focusing on administrative duties to fostering a forward-looking school culture focused on continuous improvement. School leaders cannot focus only on managing and coordinating basic inputs. They need to be actively involved in student learning and mentoring teachers and must create space for engagement and collaboration between education stakeholders in the wider community. Leaders who engage more with stakeholders will be better positioned to implement innovative learning solutions that work for and receive greater buy-in from all stakeholders. As school leaders become more engaged in learning and interact more with stakeholders in the community, they also become better positioned to address matters of safety and inclusion such as violence, harassment, and bullying (Uncommon Schools n.d.).

**School leaders must leverage technology and management information systems to manage more efficiently, support teachers effectively, and engage in data-driven decision-making.** Familiarity with technology will become increasingly important for principals, because they will be required to make informed decisions about investing in, maintaining, and upgrading technology in their schools. A myriad of technological solutions has emerged to reduce the burden of administrative duties for school leaders, which will free up time for greater engagement in student learning and active mentoring of teachers (Namit and Mai 2019; UNESCO 2017; World Bank 2017). Likewise, confidence with using technology will enable school leaders to support teachers in incorporating technology into their pedagogy. Familiarity with and use of technology will assist school leaders in engaging in data-driven decision-making (UNICEF n.d.).
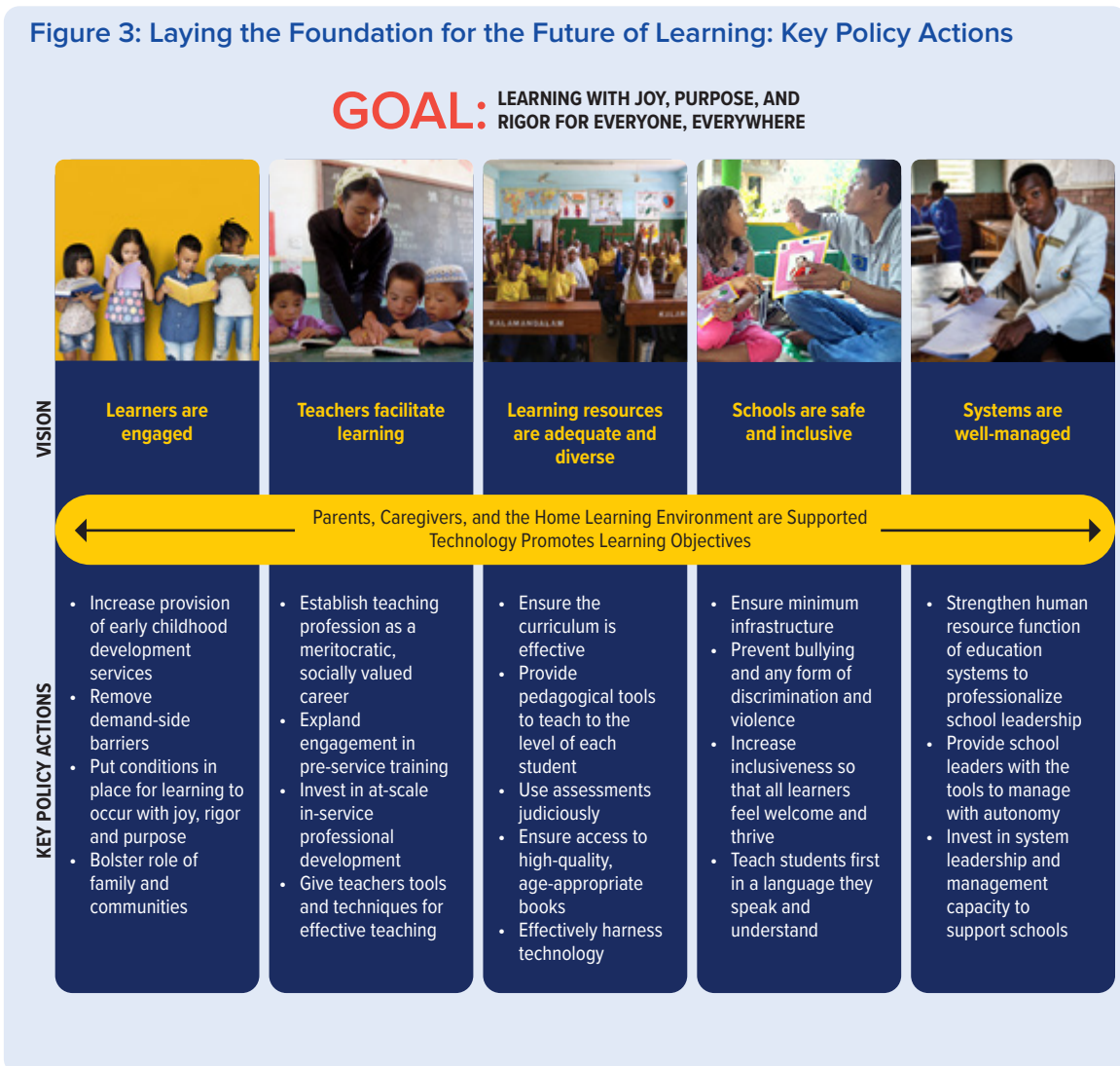
# Bringing Forward the Future of Learning: Key Policy Actions

**T**he education community needs to start today with investments and reforms that lay the foundations to accelerate learning. This section describes major near-term policy actions under each pillar of the education system needed to build toward the future of learning (summarized in figure 3). It also describes how the World Bank will work with countries to design and implement these policies. Work to implement these policy actions should be based on a robust analysis of what is needed to improve learning and skills for all children and youth, especially the most disadvantaged. This is the only way to make a difference at scale, and ultimately to achieve the vision.

## Figure 3: Laying the Foundation for the Future of Learning: Key Policy Actions

**GOAL:** LEARNING WITH JOY, PURPOSE, AND RIGOR FOR EVERYONE, EVERYWHERE



**VISION**

| Learners are engaged | Teachers facilitate learning | Learning resources are adequate and diverse | Schools are safe and inclusive | Systems are well-managed |

Parents, Caregivers, and the Home Learning Environment are Supported
Technology Promotes Learning Objectives

**KEY POLICY ACTIONS**

| Learners are engaged | Teachers facilitate learning | Learning resources are adequate and diverse | Schools are safe and inclusive | Systems are well-managed |
|---|---|---|---|---|
| • Increase provision of early childhood development services<br>• Remove demand-side barriers<br>• Put conditions in place for learning to occur with joy, rigor and purpose<br>• Bolster role of family and communities | • Establish teaching profession as a meritocratic, socially valued career<br>• Expland engagement in pre-service training<br>• Invest in at-scale in-service professional development<br>• Give teachers tools and techniques for effective teaching | • Ensure the curriculum is effective<br>• Provide pedagogical tools to teach to the level of each student<br>• Use assessments judiciously<br>• Ensure access to high-quality, age-appropriate books<br>• Effectively harness technology | • Ensure minimum infrastructure<br>• Prevent bullying and any form of discrimination and violence<br>• Increase inclusiveness so that all learners feel welcome and thrive<br>• Teach students first in a language they speak and understand | • Strengthen human resource function of education systems to professionalize school leadership<br>• Provide school leaders with the tools to manage with autonomy<br>• Invest in system leadership and management capacity to support schools |

# Learners

As a foundation for learners to experience tailored, holistic learning at school, education systems must ensure that learners arrive at school prepared, supported, and motivated to learn. This involves four key areas for policy action.

1. **Increase provision of high-quality early childhood development services** by making holistic, cross-sectoral investments in child development from the earliest days of life to ensure that children receive the best possible start in life and are prepared to learn (WHO, UNICEF, WBG 2018).
2. Remove demand-side barriers to getting all children into school by eliminating financial and material barriers.
3. Create conditions for learning to occur with joy, purpose, and rigor to keep children in school by emphasizing foundational learning before expecting learners to progress to higher levels of schooling.
4. Bolster the role of the family and communities in learning and improve learning environments outside of school, particularly at home. Parents and other caregivers play a critical role in supporting children's learning and need to be involved and supported in the educational process from the earliest years (Shonkoff and Fisher 2013).

## *Increase Provision of High-Quality Early Childhood Development Services*

**Children's early years are a period of rapid development that lays the foundation for success.** In the first 1,000 days of life, children should be in healthy, stimulating environments that enable them to create quality bonds with parents or caregivers. For children aged 3 to 6, quality preschool programs have been found to foster cognitive, socioemotional, and physical development. Despite this, just one in five children in low-income countries accesses early childhood services (Devercelli and Saavedra 2019). Moreover, the quality of early childhood development services is often low, undermining development of children's cognitive and socioemotional skills and their

motivation to learn (Britto, Yoshikawa, and Boller 2011; Raikes, Devercelli, and Kutaka 2015; Yoshikawa and Kabay 2015). Differences in the quality of these services between high- and low-resource contexts also lead to long-lasting inequalities in learning (Walker et al. 2011).

**The World Bank will support countries in promoting cross-sectoral investments in nutrition, health, early stimulation, learning, and protection from stress in the first 1,000 days.** Mothers need to receive prenatal care. Once born, children need nurturing care and stimulation, protection from stress, adequate healthcare, and nutrition. They need opportunities to play and learn during the early years, when the brain is most malleable and the greatest development occurs. Governments need to enact family-friendly policies (e.g., maternity leave, cash benefits). Cash transfer programs for households could also accompany prenatal and child services to address acute material deprivation and improve developmental outcomes (Walque et al. 2017).

**The World Bank will work with countries to increase the availability of high-quality childcare and preschool programs (for children aged 3 to 6) with play-based, child-centered, developmentally appropriate curricula and pedagogy.** We will work with countries to prioritize expanded provision and subsidization of quality preschool services, especially for low-income families, encouraging diverse service provision, clear registration systems, comprehensive and coherent quality standards, monitoring systems to assess and support providers, and professionalization of early childhood development providers.

## *Remove Demand-Side Barriers to Getting All Children into School*

**Access to high-quality basic education is limited.** Two factors contributing to low enrollment is the inability of families to pay for school and associated expenses and a perception of lack of benefits of education. In many countries, social norms and unconscious biases limit the

educational experience of some children (e.g., girls, children with disabilities, those born in rural areas or into certain castes).

**The World Bank will help countries use a full range of tools to support families in sending children to school, addressing demand-side constraints and providing incentives for schooling.** These tools include proven approaches such as eliminating school fees, providing targeted scholarships for disadvantaged groups, and (where antipoverty goals warrant them) providing conditional cash transfers. They also include innovative approaches that target social, informational, and behavioral constraints (Jensen 2010), for example by engaging with families to shift social norms regarding schooling, providing adolescents with information about the benefits of education and its effect on employability, and establishing merit-based scholarships that promote learning goals in poor households targeted for financial support.

## Create Conditions to Keep Children in School

**Many learners drop out of school because they do not acquire foundational skills such as reading with comprehension and basic math.** Many children who attend primary school leave without foundational skills, poorly prepared for further studies or for work (World Bank 2019a), perpetuating perceptions of lack of benefits of education and making it more likely that children drop out of school. This is also tied to the goal of children learning with joy, purpose, and rigor, because learners are more likely to stay in school if they value and engage in the learning process. Lack of safety and inclusion also leads to high levels of drop out, as discussed under pillar 4 below.

**The World Bank will work with countries to ensure that children learn with joy, purpose, and rigor, obtaining the foundational education they need before proceeding to higher levels of schooling.** This requires policy actions spanning all the pillars—for example, in supporting teachers, parents, and communities so that they are prepared to facilitate learning for each learner and to promote the development of the whole child; in ensuring that each learner has access

to diverse learning resources at school and at home; and in establishing policies and practices to guarantee that each learner feels safe and included in the learning process. These ideas are explored in more detail in the sections on each of the pillars below.

## Bolster the Role of Parents, Families, and Communities in Children's Learning

**Parents and other caregivers might not always fully recognize their role in their children's education, know how to help their children thrive throughout their schooling cycle, or receive the support they need to fulfill this role.** For instance, parents might not recognize the importance of talking to infants to foster oral language development, having books at home, having quality child-caregiver interactions, and establishing an interest in reading early on. This might lead to important, long-lasting inequities; longitudinal evidence has shown that children who fall behind in oral language and literacy development in the years before formal schooling are less likely to be successful beginning readers and that their achievement lag is likely to persist throughout the primary grades and beyond (Cunha, Lochner, and Masterov 2005; Farkas and Beron 2004; Hart and Risley 1995; World Bank 2015). In addition, some parents might feel disengaged from the education sector and not hold the system accountable for learning.

**Parents and other caregivers play a critical role in supporting children's learning and need to be involved and supported in the educational process from the earliest years (Shonkoff and Fisher 2013).** They should be empowered to become involved in their children's learning, and education systems should communicate that they matter and can make a huge difference in their children's lives and futures. Parents and other caregivers need to recognize the value of education and invest in it. They need to be provided with information on evidence-based practices to support children's learning so that they can provide stimulating learning environments in the early years, support children once they are in school, and help them navigate the transition from school to work.

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**The World Bank will work with countries to implement policies and programs targeted at supporting parents, families, and communities in fostering the holistic development of their children.** For example, we will support countries in expanding cross-sectoral interventions that build parents' and other caregivers' capacity to support healthy development, including coaching caregivers at home on positive discipline and how to engage in nurturing, stimulating, language-rich activities with their children (e.g., storytelling, singing, reading). Initiatives to provide high-quality resources in the home and support for parents and caregivers on how to use these resources should accompany this. These efforts should also include a focus on parents' and other caregivers' wellbeing, which has direct and indirect effects on children's wellbeing (Newland 2015). There needs to be a focus on their empowerment; the World Bank will support efforts to give parents and other caregivers the necessary tools, space, and incentives to hold schools, teachers, principals, and policymakers accountable for their children's education.

## Teachers

In many countries, not all teachers are effective, nor does the system signal that it cares for their development as professionals and for their welfare. There are many reasons for this; for example, in too many countries, politics intrude on education decisions, and teachers and authorities are selected based not on merit but on connections and patronage, and in some countries, because education systems have expanded rapidly in recent decades without a concomitant increase in resources, the social value of the teaching profession has declined substantially. Young people in successful systems such as those in Japan, the Republic of Korea, and Finland aspire to be teachers than to be engineers, but in many countries the opposite is true (Park and Byun 2015), and it is not just teacher selection and preparation that interferes with the vision. Students lack the support and foundational skills necessary for them to take control of their own learning, making it difficult for teachers to shift to the envisioned role of facilitators of learning. The policy actions for the learners pillar above highlight ways to increase student readiness and make it easier for teachers to guide them in learning, but much needs to be done to strengthen teaching.

To ensure a healthy teaching and learning process as laid out in section 2 above, countries need to make sure that teachers at all levels are valued and that they have the tools, support, and expectations they need to be effective. This career path should embody the message that societies value learning and care deeply about the wellbeing of students and teachers. To this end, the World Bank is guided by the following four priorities (Béteille and Evans 2019).

1. Reshape the teaching profession as a meritocratic, socially valued career and hold teachers to high professional standards.
2. Expand engagement in pre-service training (at teacher training institutes, normal schools, and universities), with an emphasis on the practicum component.
3. Invest in in-service teacher professional development that is on-going, tailored, focused, and practical.
4. Provide teachers with tools and techniques for effective teaching.

### *Reshape the Teaching Profession As a Meritocratic, Socially Valued Career and Hold Teachers to High Professional Standards*

Teaching must be treated as one of the most important professions, and all teachers must be helped to live up to that calling. In every country, there are dedicated teachers who enrich and transform the lives of millions of children, but many others lack proper training and teaching materials, are not recognized for their work, and do not receive good incentives. It does not work when political considerations and personal connections, rather than efforts to build professionalism, determine selection, promotion, and deployment.

The World Bank will support the design of country strategies and policies to attract and select stronger candidates to teaching based on merit. This is critical to the reshaping of teaching as a socially valued career in every country. To make teaching attractive, policymakers need to improve its status, compensation policies (ensuring teacher pay is competitive with that of similar professions), and career progression structures. Until merit and effort matter, policies aimed at improving teacher competencies or providing teachers with better school inputs will be ineffective.

Once they are hired, teachers should be treated like professionals and expected to grow and perform like professionals. Individuals in other professions are encouraged to continue learning and applying their improved skills to their job. Better performance is generally reinforced early in the career and rewarded with career advancement in the longer term; poor performers are supported to improve or eased out of the profession if they cannot improve. This should be the case with teachers as well.

Selecting teachers based on merit, not on connections or empty credentials, leads to better student learning even when the quality of teacher assessments is not ideal, given the complexities of evaluating adult competencies at scale (Estrada 2019). Assessments of candidates' effectiveness as learning facilitators, rather

than of subject knowledge alone, should inform teacher selection. These skills should be developed through teacher training and evaluation that helps teachers to facilitate cognitive and socioemotional learning, personalize instruction, and provide support for differential learning, among others.

**Promoting the professionalism of teaching could also mean that systems treat the beginning of a teacher's career as a probationary period.** Not everyone has the talent or inclination to be a teacher, but it is hard to gauge the fit before a teacher is hired. Rather than simply using teachers' credentials to judge whether they should be given permanent civil service status, teachers could be observed on the job during a probationary period, and how committed and skilled they are at helping students learn could be evaluated. Permanent employment decisions could be based on this probationary performance.

**After the probationary period, decisions regarding career progression and promotion should take a teacher's performance into account.** For example, the most effective teachers should be promoted to positions such as master teacher, to reward them with recognition and higher pay and to give them the opportunity to help other teachers become more effective. Teachers who show the greatest management potential should be promoted to principal and assistant principal positions (rather than having those positions awarded based on seniority, as is often the case). As in other professions, all teachers should be given the opportunity and encouraged to continually become more effective (see next section on professional development), given that mastery is critical to fulfilling professional work.

**The other pillars should support teacher professionalism.** For example, teachers should be provided with the learning materials and classroom conditions that they need to be effective, as well as safe and welcoming school environments and caring, professional school management—the subjects of pillars 3, 4, and 5. Overall, the goal is to help countries recruit, promote, and support teachers in ways that will support their professionalism. It is essential to take that

idea seriously, in all its dimensions, rather than using "professionalism" simply as a synonym for either "higher pay" or "more accountability."

### Invest in Practical Pre-Service Training to Prepare the Next Generation of Professionals

**For teaching to be socially valued and effective, teachers need to be prepared like professionals, but in many low- and middle-income countries, teacher training institutions are not very selective, and the training is too theoretical and does not give aspiring teachers opportunities for classroom practice.** This contrasts with what is found in high-performing countries, where strong candidates come into the profession and are prepared with practical experience.

**To establish clear guidelines for teacher training institutions, the World Bank will help countries define what they expect from teachers:** the competencies expected of teachers in terms of personal and professional development, pedagogical skills, curricula, and school management; expectations of classroom performance; and attitudes and values that define pedagogical excellence.

**Entry into pre-service teacher training must be selective so that the best candidates enter the teaching profession.** In successful education systems, candidates are selected based on their skills (e.g., high-school graduation examinations, matriculation examination, social and communication skills, observation of skills in classroom settings) and their motivations to become teachers. Governments should tightly regulate pre-service education.

**Another crucial step is to support teacher training colleges in introducing extensive practice in schools as part of the training curriculum.** Without that experience, teachers struggle when they confront classroom challenges for the first time after graduation—without any mentoring or guidance on how to meet those challenges. Extensive practicum components of pre-service education enable new teachers to enter classrooms with confidence by teaching them to apply pedagogical skills, manage classrooms, and respond to personalized feedback.

## Shift To Evidence-Based In-Service Professional Development That Makes a Difference in the Classroom

**Attracting and selecting better teachers and providing them with pre-service education will strengthen the teaching corps over the long term but do little to help today's students.** Children and youth already in school cannot wait for the decades-long process of turning over the teaching force and bringing in a more highly skilled, more motivated cadre of teachers. Nor should they have to; there are many current teachers who are eager to improve and just need better support from education systems to do so.

**A top priority for the World Bank is to help countries invest in effective in-service teacher professional development.** The need to improve ability is especially urgent in the teaching forces of many low- and lower-middle-income countries. The rapid expansion of education in recent decades has often outstripped the supply of qualified new teachers, and many teachers have entered the profession without the necessary qualifications. In-service professional development must compensate for the lack of pre-service education. Even many teachers who are qualified on paper had low-quality preparation, so good in-service professional development is crucial for them too.

**The World Bank will prioritize support for the most effective professional development, which will often mean major changes in program design and implementation.** Education systems already invest a substantial share of their discretionary budgets in in-service professional development programs for teachers, and many World Bank operations support these programs, but much more can be done to ensure that these programs change teachers' classroom practice and improve student learning. Examining the key elements of large-scale teacher support programs and comparing them with programs that we know are effective suggests ways to make these programs more effective.

**The priority should be to support on-going, tailored, focused, practical training that leads to better teacher-student interactions.** This type of training program is very different from one-off training events, often in conference venues far from the school, that governments, the Bank, and others have often supported. A recent study of 33 rigorously evaluated programs in low- and middle-income countries concluded that, by contrast, programs shown to improve student learning tend to include a face-to-face component, are subject specific and linked to some sort of professional incentives (e.g., opportunity for promotion), and include practice with other teachers and follow-up visits in teachers' classrooms (Popova et al. 2019). Although these programs may be more expensive, meaning that not all teachers can be trained in a given year, they are more likely to deliver value for money.

## Provide Teachers with Tools and Techniques for Effective Teaching

**In addition to establishing effective attraction, selection, training, and deployment policies, systems must do much more to make teaching more effective.** Even though the most essential relationship in education is the teaching-learning relationship, that relationship does not take place in a vacuum. To be effective and fulfilled, teachers must have tools to work with and support from the rest of the system. For instance, teachers need support from parents so that children arrive at school prepared to learn and stay in school motivated to learn. Teachers can also help strengthen the home learning environment, empowering parents to take an active role in the education of their children outside school and ensuring continuation of learning from school to home.

**The World Bank will help systems support teachers with the learning materials, technology, learning environments, school management, and curriculum that they need to be successful.** The sections below on pillars 3, 4, and 5 describe what this support should look like. The goal of all these pillars should be to strengthen the teaching and learning process—pillars 1 and 2 (World Bank 2018a).

# Learning Resources

**In addition to learners and teachers, many inputs into education systems are necessary for learning: learning materials, infrastructure, and an effective curriculum, among others.** Students must have access to flexible, adaptable learning resources in school, at home, and in the community at large. It is critical to ensure that the minimum inputs exist and are being used effectively. For instance, having a well-focused curriculum (adequately covering specific topics and completely covered and mastered by all students) is believed to have contributed to success in places such as Hong Kong SAR, Shanghai, and Singapore (World Bank 2018b) and is the first step in moving toward a competence-based curriculum that promotes learning to learn rather than rote learning. Having age- and content-appropriate books and reading materials is also necessary to achieve fluency (Gove and Cvelich 2011). At the same time, it is crucial to ensure that the learning materials are well integrated into better teaching and learning; textbooks, for example, will not improve learning if students are too far behind to make use of them or they are written in a language the children do not understand (Glewwe, Kremer, and Moulin 2009).

**To make sure that all children have access to flexible, diverse learning resources,** the following four priorities are critical.

1. Ensure that the curriculum is effective (adjusted to the level of the students and the capacity of the system) and provide detailed guidance to teachers through highly structured lesson plans that can be used by teachers who need them.
2. Use assessments judiciously.
3. Ensure that children receive high-quality, age-appropriate books.
4. Ensure that learners, teachers, and school leaders can access and effectively harness technology to achieve learning objectives.

## *Ensure Curriculum Is Effective and Provide Detailed Guidance to Teachers*

**In most underperforming systems, the curriculum is outdated or divorced from the needs of students or the capacity of the system.** Often,



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curricula are much too ambitious, with too many goals set at a level that is much too high for the context. In an eagerness to build more advanced skills, they tend to be complex and written in an academic style that the typical teacher cannot understand, which results in curricula that are not useful guides for teachers, with competencies and pedagogical objectives described in ways that leave teachers guessing what is expected from them. Faced with an impenetrable curriculum, teachers fall back on what other teachers have done in the past, in terms of content and pedagogical practices, and do not cover the full curriculum or leave most students behind in the race to complete the curriculum.

**The first step is simply to measure and understand the gap between the curriculum and student learning and use that to make the**

**curriculum work for teachers and students.** Focusing on foundational learning can help make sure the curriculum is a simple, effective, useful tool, adjusted to the level of the system and the students. Simplification of curricular goals helps teachers prioritize the most important topics and helps students achieve greater understanding and mastery. In the most challenging environments, including fragile and conflict- and violence-affected states constrained by a scarcity of trained teachers and weak accountability systems, closing the gap might require streamlining the curriculum and providing structured lesson plans to simplify teachers' lives. When teachers are weak in pedagogy and content knowledge, one way to substantially improve student learning of basic literacy and numeracy is to provide structured lesson plans (Piper, Zuilkowski, and Ong'ele 2016), which may be heavily scripted or simply provide a basic structure for the lesson from which the teacher can deviate as needed (Béteille and Evans 2019). Ideally, this structured pedagogy approach is used to set a floor below which the classroom learning experience will not fall, to ensure that all children master at least the fundamental skills they will need, thanks to proven and monitored pedagogical approaches. Where teachers have the preparation and motivation to go beyond this foundation, systems should empower them to do so. The structured lesson plans should serve as an aid for teachers and a guarantee for children, not a straitjacket.

**The World Bank will support countries in implementing interventions to target teaching instruction according to learning level, not grade.** Targeting instruction according to level ensures that students are given the tasks they need to master in their learning progression, which is key to learning with joy, purpose, and rigor, as discussed in Section 2.1. It means, for example, that students who are struggling with letter sounds continue to work on letter sounds and master them before moving to word reading. These interventions will be adapted to the context and include grouping children according to level of knowledge instead of age for all (Duflo, Dupas, and Kremer 2011) or part of the school day (Banerjee et al. 2016) or even after school or during holidays; using teachers, volunteers (Banerjee et al. 2008), or teaching assistants (Banerjee et al. 2007); and using education

technology, as done in an after-school program in India that uses adaptive learning software that customizes content based on the level and rate of progress of each student (Muralidharan, Singh, and Ganimian 2016) or as done in Botswana, where targeted text messages were sent based on children's levels, focusing on remediation for the students furthest behind (Angrist et al 2020).

## *Use Assessments Judiciously*

**All assessments should measure student results against explicit goals developed in the curriculum or national reading goals.** Assessments should progress from rigorous, periodic, large-scale assessments to frequent formative assessments in multiple formats and from examination results to teachers' direct classroom observations of students. Assessment at the national level provides critical snapshots of student progress as they learn, complementing on-going classroom and formative assessments that promote learning for each student in each classroom. Using assessments in this way allows systems to ensure that everyone's goal—teachers, principals, school administrators, ministers of education—is that every child learns.

**Properly designed and implemented high-stakes examinations can level the playing field by giving all students the same opportunity to show what they know and can do.** High-stakes examinations are typically used to select or certify students as they move from one level of the education system to the next (or into the workforce). In many countries, these examinations provide decision-makers with a standardized measure of student knowledge, which informs high-stakes decisions. Examinations may also play an important equity role by limiting patronage and opening access to educational opportunities for students from disadvantaged backgrounds. Given their high-stakes nature, these examinations must be designed so that they test competencies, higher-order thinking, and reasoning skills and do not create perverse incentives for teachers and students (e.g., encouraging shallow forms of learning such as cramming and rote memorization) (El-Kogali and Krafft 2020). Measures to prevent and address their misuse are essential, and depending on the objective and scope of the examination, criteria in addition to examination

scores (e.g., school grades, capstone projects, interviews) should be considered in the high-stakes decision-making process. If stakeholders are concerned about existing inequities affecting the fairness of examination results, additional measures could be introduced to increase access to learning opportunities for disadvantaged subgroups, particularly where there is scope to expand provision of schooling.

**Classroom and formative assessments can complement large-scale assessments and help monitor student progress, inform classroom teaching, and guide teacher professional development.** System-level assessments are a prerequisite for setting national goals and monitoring progress toward them because they offer an overall picture of student skill development and allow for monitoring of learning trends, but they must be complemented by continuous classroom and formative assessments, which provide immediate feedback to inform classroom instruction and teacher professional development. Classroom assessments are also critical to provide instruction to the level (and needs) of students. Classroom and formative assessments can range from rigorous assessments to less formal methods such as "turn and talk," error analysis of homework, and standard observations of student responses during class. All assessments should measure student results against the explicit goals developed in the curriculum or national reading goals.

### *Ensure That Children Receive High-Quality, Age-Appropriate Books*

**Closing the gap between curriculum and students' actual learning levels will also require learning resources in the classroom and beyond.** For foundational learning, children must receive high-quality, age-appropriate books, which are often scarce or absent in low- and middle-income countries. For example, in 91 percent of classrooms observed in Madagascar in 2016, none of the pupils had a textbook in hand (Rary and Rakotoarivony 2017), and in Malawi, there are fewer than 20 book titles in the Tumbuka and Yao languages, although there are 2.2. million native speakers each (Results for Development Institute and International Education Partners 2016). Age-appropriate learning materials are also absent

from children's homes. In Sub-Saharan Africa, only 3 percent of households have more than two children's books at home, and just half of all parents report regularly engaging in cognitively stimulating activities with young children (Kelley and Little 2017). Insufficient and inappropriate procurement and distribution compound the deficit of high-quality books. For instance, in Guinea, Niger, and Chad, more than half of printed books are lost in the process of warehousing, transport, and distribution (Results for Development Institute and International Education Partners 2016).

**The World Bank will redouble efforts to put more high-quality texts into the hands of students.** These efforts fall into five categories: promote development of local educational publishing industries to broaden availability of locally relevant reading materials; shape the supply of literacy and numeracy materials for use in low-income educational settings by collaborating with private and nonprofit educational publishers and providers of literacy materials; protect the delivery of books through greater accountability and harnessing of new technologies, including encouraging the use of results-based financing and new technologies such as "track and trace" to drive improvements along the book supply chain; disseminate key principles and techniques for development of suitable early reading materials for students and teachers; and develop supplementary learning materials as a complement to textbooks and blend printed material with digital material using new technologies when appropriate. This will include efforts to put reading materials into the homes of the most vulnerable children and innovations such as energized textbooks, which include QR codes in printed textbooks to enable access to online digital resources or high-quality open-source global public goods such as levelled readers in multiple languages and for different cultural contexts.

### *Harness Technology to Achieve Learning Objectives*

**Countries will need to scale up and focus investments in digital and human infrastructure.** As they invest in technology and human capital, countries will face the challenges of striking a balance between technology and the human factor

and ensuring that technology is deployed strategically, always in support of student learning processes and outcomes. Countries will need to invest in human infrastructure—teacher training, teacher and student digital skills, parental support—so that all students benefit from digital learning. Countries should strive for flexible, expandable, compatible, interoperable systems and avoid vendor lock-in. Innovative public-private partnerships can help increase the use of EdTech; for example, during the pandemic, several governments have been working with telecommunication companies to provide free connectivity to online learning resources through "zero rating" mechanisms (providing Internet access without financial cost under certain conditions) (World Bank 2020f). The education sector will also have to address market information asymmetry and devise innovative financing and procurement strategies for digital infrastructure. To do so, ministries of education should promote transparent standards that facilitate interoperability of systems, data, and content to promote a data-driven decision-making culture.

**Expanded access to and use of data present challenges in terms of privacy, data ownership, transparency, and inclusion.** Countries will need significant investments in essential digital infrastructure (connectivity and devices) and good-quality digital content and will need to ensure that this digital infrastructure has built-in safeguards to protect the privacy and security of users and avoid biases against disadvantaged groups. EdTech offers opportunities for evidence-based, transparent decision-making on delivery and management of education services. The use of technology in support of teaching and learning leaves a digital footprint that can be collected, analyzed, and shared in ways that can compromise privacy, data ownership, and digital security. Clear policy guidance and rules need to be established, recognizing that trade-offs must be considered and that related guidance and rules need to evolve over time.

## Schools

The following four key policy actions are required to create the foundations for safe, welcoming, nondiscriminatory learning environments.

1. Ensure that all children and youth have a space to learn that meets minimum infrastructure standards for safety and inclusion.
2. Create conditions to prevent and address bullying and any form of discrimination and violence in and around the school.
3. Make schools inclusive so that all learners (including those with disabilities) feel welcome, have access, and can participate in quality learning experiences.
4. Teach students first in the language they use and understand.

### *Ensure That All Children and Youth Have a Space to Learn That Meets Minimum Infrastructure Standards for Safety and Inclusion*

**With growth in populations and an unprecedented increase in access to education, many children and youth have been left out of school or are studying in less-than-optimal spaces.** Dilapidated, insufficient, unsafe classrooms are common, and schools often lack basic facilities. For instance, only 32 percent of primary schools in low-income countries have access to electricity, 47 percent to clean drinking water, 73 percent to single-sex toilets, and 42 percent to handwashing facilities.[4] Without adequate physical places to study, the promise of education has been limited for some. With COVID-19, the need for spaces that meet minimum water, sanitation, and hygiene requirements and spaces with enough air circulation and outdoors has become increasingly apparent.

**The World Bank will support countries in building the basic infrastructure required to facilitate a high-quality learning experience in a safe, healthy environment.** The first step in this process involves identifying basic school building standards that take into account cost-effectiveness, climate resilience, flexibility, accessibility, and alignment with pedagogical plans. This process must be paired with developing costed evidence-based school infrastructure plans to close the national quality school infrastructure gap in the medium term, with a focus on children from the most disadvantaged backgrounds. An updated school infrastructure inventory, disaster risk assessments,[5] and demand studies are needed, among other inputs, to inform school infrastructure plans. Improved, accessible water, sanitation, and hygiene facilities are also necessary to ensure children's physical health by minimizing disease transmission and inclusive learning environments for all, including girls. School designs used in low- and middle-income countries should be revised from the traditional classroom setting to a student-centered design focused on learning outcomes. The World Bank will support countries in designing and implementing flexible, age-appropriate designs that provide an accessible, inclusive learning environment (including furniture that allows a variety of teaching and learning practices in inclusive settings) and create a learning environment that facilitates interaction with other stakeholders (e.g., parents, community) so that skills that meet the needs of the job market in each country can be taught.

### *Create Conditions to Prevent and Address Bullying and Any Form of Discrimination and Violence in and Around the School*

**Students in many parts of the world experience bullying and sexual, psychological, and physical violence, within and immediately outside schools.** A study on ending violence in schools suggests that rates of violence (physical, emotional, sexual) are high, with each type

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4   Data are from the Education | School Facilities and Teaching Conditions (database), UNESCO Institute for Statistics, Montreal, Canada (accessed September 14, 2020), http://data.uis.unesco.org/.
5   The Global Program for Safer Schools Global Baseline, which has a goal of increasing large-scale investments to increase the safety and performance of school infrastructure, enhance the quality of learning environments, and support the resilience of the education system, indicates that more than 1,000,000 school buildings are vulnerable to collapse from earthquakes and tropical cyclones. https://gpss.worldbank.org/

of violence affecting one-fifth to one-third of children each year (Wodon et al. 2020). A major violation of basic human rights, such violence has serious consequences for children's overall health and development and also prevents them from learning. More than 1 billion children experience bullying or violence (sexual, physical, emotional) every year, more than half of them in school (WHO 2019). Children who are different (those in extreme poverty, with disabilities, or from minority groups, including Indigenous peoples, LGBTQ, and those from ethnic, racial, or religious groups) are especially vulnerable.

**The World Bank will support countries in developing legislation to foster safe and inclusive schools.** Despite progress in legislation regarding child safety and inclusion, important gaps remain. For instance, in 67 countries, corporal punishment in school is not fully prohibited (Global Initiative to End All Corporal Punishment of Children 2019), and 93 countries have laws that include exceptions that allow girls to marry before the age of 18 with parental consent (Arthur et al. 2017). In some countries, corporal punishment is largely accepted as a legitimate way to educate a child. In too many countries, boys and girls are beaten "for their own good" or "in good faith" as a way to discipline them—in school and at home. It is sometimes believed that it will help to "toughen up boys." Girls (and boys) might be sexually preyed upon on the way to school or in school, exchanging sex for transport or grades, just to be able to continue their education. This happens as early as primary education and all the way to higher education. All forms of violence against children, including corporal punishment in school, need to be forbidden to set clear standards for all. The World Bank will work with countries in analyzing and modifying their legal framework to develop a universal prohibition of corporal punishment and child marriage.

**The World Bank will support countries in measuring school violence and implementing measures to foster a positive school climate and safe learning, involving children, parents, educators, and communities in changing pervasive social norms.** Collection and analysis of data is critical in identifying the magnitude of the

problem, aligning actors around its importance, and ensuring progress over time (Together for Girls n.d.). A supportive policy environment is necessary, but safety does not result from administrative decisions only; it requires changing social norms (World Bank 2011). The public should be aware of laws that prohibit violence; the negative consequences associated with different forms of violence; and alternatives to ensure positive discipline and safe, joyful learning experiences, but changing social norms will take time and a number of approaches and efforts (e.g., combination communication campaigns, community sensitization programs, positive parenting workshops, edutainment, changes in pre- and in-service teacher education).

## Increase Inclusiveness of Schools So That All Learners Feel Welcome and Have Access to Quality Learning Experiences

**Before the pandemic, there were well-recognized inequalities in education for marginalized children—including children and youth who confront multiple overlapping sources of disadvantage or discrimination,** because of poverty, gender (Malala Fund 2020; Bandiera et al. 2020), disability (World Bank 2020c), and ethnic identity (Macdonald 2012). Multiple studies have shown that family background has important effects on access to education and learning. The COVID-19 crisis is exacerbating these inequalities and affecting the poorest households disproportionately. In addition, although high- and middle-income countries are expected to mitigate part of the learning loss through remedial action for those who need it most, low-income countries are not investing enough in these mitigation strategies (Azevedo et al. 2020). Even in Belgium, a high-income country that has used remote learning, school closures led to significant decreases in learning, inequalities within schools were exacerbated (Maldonado and Witte 2020), and schools with more-disadvantaged student populations experienced larger learning losses. The pandemic is highlighting the importance of physical schools as an equalizer of opportunity.

**Previous sections have described mechanisms to address inequality in access to education and**

**learning.** These include providing cash transfers to encourage student attendance and retention, providing meals to vulnerable students, improving teacher-student ratios, encouraging the best teachers to teach in the most vulnerable areas, supporting teachers with students with the biggest learning gaps, and teaching to the level of the student. One of the principles described in section 4 addresses inequality by promoting inclusion and equity through a progressive path to universalism—meaning expanding access to high-quality education for everyone while prioritizing the needs of children who are disadvantaged (Education Commission 2016). Four groups are systematically at a disadvantage in education: girls, children with disabilities, children in fragile settings, and children who speak a language different from the one of instruction.

**Despite significant progress, girls are at a disadvantage in access to and completion of education.** According to UNESCO estimates, 130 million girls aged 6 to 17 are out of school, and 15 million girls of primary-school age—half of them in Sub-Saharan Africa—will never enter a classroom. Poverty and other factors such as social norms are critical in determining whether a child can access education. For girls, child marriage and early childbearing are major barriers to receiving an education (Wodon et al. 2017, 2018a), with more than 41,000 girls younger than 18 marrying every day (Le Nestour, Fiala, and Wodon 2020). Child brides are much more likely to drop out of school and complete fewer years of education than their peers who marry later, which affects the education and health of their children. Girls who face multiple disadvantages (e.g., low family income, living in remote or underserved locations, with disability, belonging to a minority ethno-linguistic group) are farthest behind in terms of access to and completion of education. The COVID-19 pandemic may also place girls at a disadvantage because it is expected to result in additional child marriages and unintended pregnancies due to disruptions in family planning services and in interventions aimed at reducing child marriage (UNFPA 2020).

**The World Bank will support countries in increasing access to and increasing the quality of education for girls, in keeping with the Charlevoix Declaration on Quality Education for Girls,**

**Adolescent Girls, and Women in Developing Countries, which the World Bank signed in 2018.** In particular, the Bank will help countries ensure that schools have the capacity to welcome girls and are accessible; going to school is safe for girls; schools are affordable, considering the out-of-pocket, opportunity, and potential social costs of sending girls to school; and girls are able to learn while in school. This refers not only to traditional academic subjects, but also to socioemotional and life skills and involves efforts to increase participation of girls in skills development and nontraditional professions. The Bank will help countries ensure that pregnant and married girls are allowed to remain in school and that second chance programs are available for girls whose circumstances do not allow them to be in school (Wodon 2020).

**Many children with disabilities are excluded from learning.** Children with disabilities lag behind other children in both schooling and learning, with gaps in low-income countries increasing (Male and Wodon 2017; Wodon et al. 2018b, 2019). At least half of the close to 65 million primary and secondary school–aged children with disabilities are out of school. Children with disabilities are two and a half times as likely never to go to school as their peers (World Bank 2020g). Only 6.6 percent of those with disabilities complete secondary education, compared with 49 percent of those without (Ng, Elder, and Hasan 2020). Students with disabilities are often stigmatized and placed in classrooms where they do not receive adequate support to participate and learn. Even when there is research on the benefits of inclusion, as opposed to segregated learning (Canadian Council on Lessons in Learning 2009), many parents of learners with disabilities oppose it when reasonable accommodations and specific learning supports are not available. Even though the most effective methods of teaching students who struggle with learning are good pedagogical approaches that can be used with all children (utilizing principles of Universal Design for Learning), teachers do not always know how to teach diverse learners. That is why it would be important that all teachers learn about inclusive pedagogy during their initial training. They also need enough exposure to teaching diverse groups of learners in general education classrooms, thus promoting their

efficacy. It is estimated that leaving persons with disabilities out of the education system and the labor market costs approximately 7 percent of a country's GDP annually (Buckup 2009).

**As part of our 10 commitments on disability inclusion (World Bank 2018c), the World Bank is committed to ensuring that all of its education projects and programs are disability inclusive by 2025.** Making schools inclusive and building inclusive education systems will be a gradual process, but the World Bank will support countries in implementing programs and policies that enable that vision, engaging with all school stakeholders including students, teachers, principals, school staff, parents, caregivers, and the wider community. In particular, the World Bank will support governments in building accessible school infrastructure and expanding successful inclusive education programs, taking into account deliberate systemic changes, including inclusive approaches, as part of overall education planning (Alasuutari et al. 2020). The World Bank will support efforts to research the benefits of inclusion, in particular in the global South and will support countries in designing and applying flexible assessment systems that include all learners, including those with disabilities and diverse educational needs (World Bank 2011).

**Children in settings of fragility, conflict, and violence struggle to access good-quality education.** The number of children living in conflict zones has risen by 74 percent in the last decade (UNICEF 2018). In 2018, 420 million children (nearly one-fifth of all children worldwide) were living in conflict zones (Graham et al. 2019). From 2015 to 2019, there were more than 11,000 attacks on educational settings, harming more than 22,000 students, teachers, and educational personnel (GCPEA 2020). In countries affected by fragility, conflict, and violence, girls, refugees, and other vulnerable populations are more likely to be out of school, leading to low human capital accumulation; children born today in a setting of fragility, conflict, and violence will grow up to be, at best, 41 percent as productive as they could be (World Bank 2020h). The fact that it is expected that a child in a setting of fragility, conflict, and violence will complete 8.7 years of school, compared with a global average of 11 years, partially determines this (WBG 2020).

**In keeping with its Strategy for Fragility, Conflict, and Violence 2020-25 (WBG 2020), the World Bank will increase its support of technical solutions, operational modalities, and partnerships to improve education and the learning experience for all students in contexts of fragility, conflict, and violence.** Technical solutions include deploying alternative education service delivery mechanisms and targeting the most vulnerable children; operational modalities include adopting decentralized approaches and taking advantage of local solutions and community responses; and partnerships include systematic collaboration with other international agencies such as UN agencies and nontraditional local partners such as nongovernmental organizations and other civil society actors.

### *Teach Students First in the Language They Use and Understand*

**As mentioned in section 2.4, students learn best when taught first in a language they use and understand—their mother tongue or first language.**[6] Forty percent of children are excluded from the learning process because they are taught in a language they do not fully speak or understand (Eberhard, Simons, and Fennig 2019; UNESCO 2016). Students taught in a language they do not speak at home have great difficulty learning and tend to leave school earlier and with less knowledge capital (Duc and Tam 2013; Kim et al. 2016; Smits, Huisman, and Kruijff 2008; Trudell 2016). Effects persist over a lifetime, with higher average earnings accruing to students who begin their schooling in their home language (Patrinos and Velez 2009).

**National education systems are grappling with how to provide instruction in the right combination of a potentially large and diverse number of languages plus a national language and increasingly an international lingua franca such as English.** There are political considerations related to language of instruction. Teaching in mother

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6   This includes children who have sign language as their home language.

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tongue also has important financial and human resource implications. Countries will embrace mother-tongue based multilingual education and define their own goals for policies regarding national language of instruction consistent with their landscape of languages and their human resources and budgetary capacities. They will invest in teachers and resources commensurate with what it takes to achieve these goals, with a long-term approach to planning and achievement of results, given that the evidence shows that it takes at least 6 years of good-quality instruction to achieve reasonable proficiency in a language. This involves recruiting teachers who speak the local language (the mother tongue of the students) and providing them with pedagogical expertise to teach in it; obtaining teaching and learning materials in that language; and often convincing parents who prefer that their children learn languages that are valuable in the market. For some languages, it also entails developing orthographies. A long-term commitment to this model of education is needed, because positive results may take some years to become clear. Some EdTech initiatives that

have become prominent under the crisis show that technology can be used in cost-effective ways to help in this process. For example, in India, the learning application e-Pathshala offers books, videos, and audio for students, teachers, and parents in various languages. EdTech could be considered as an alternative way to deliver mother-tongue instruction in settings of fragility, conflict, and violence where multiple languages coexist.

**To support the teaching of children in their mother tongue, the World Bank will work with countries on activities ranging from understanding the language landscape to creating materials to deploying new technology.** In particular, the World Bank will help countries create or update maps of students' first languages and instructional languages; provide basic reading textbooks and develop reading materials in students' mother tongues; promote authorship and build publishing capacity in different languages; engage in South-South cooperation on good practices for instruction in students' mother tongues and transition to the national language

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of instruction where pertinent; and use technology to develop mother-tongue titles and provide support for diverse learners. Education technology can reduce the cost of producing content in local languages and augment the printed word with multisensory utilities such as audio playback and word tracking.

## System Management

**The overarching priority of this pillar is to organize educational institutions to support the learning process, which requires effective leadership and management structures at the school level.** To make this happen, three policy actions are necessary:

1. Strengthen human resource function of education systems to professionalize school leadership.
2. Provide school leaders with tools to manage with autonomy.
3. Invest in system leadership and management capacity to support schools.

### *Strengthen Human Resource Function of Education Systems to Professionalize School Leadership*

**Effective management depends on capacity for decision-making at the school level, which is often lacking in low- and middle-income countries.** In many countries, there is no clear recognition of the importance of the role of school leaders in defining the spirit and quality of the learning environment of the school and in determining the teaching and learning experiences of teachers, students, and parents. School leaders are not necessarily selected for their positions based on their managerial or leadership abilities, nor are they supported in developing those abilities. Addressing this requires treating school leadership as a profession. As in the case of teachers, encouraging the professionalism of principals and system administrators requires attracting, selecting, and supporting them and increasing expectations of them.

**The human resource function of education systems needs to be strengthened to professionalize school leadership and management.** This includes building merit-based systems by attracting and selecting principals based on

teaching skills, as well as demonstrated interest and management ability. In too many systems, leadership positions are awarded for other reasons, including political connections to decision-makers and simple longevity as a teacher. The World Bank will help countries shift to merit-based selection. Strengthening human resources also includes developing talent within the bureaucracy and enabling principals to design and implement evidence-based programs.

**School leaders need to be provided with professional development opportunities to build their managerial, pedagogical, and leadership capabilities.** Many school leaders are thrust into the position because they are the most senior teachers, not because they have been prepared with leadership skills. Education systems could help fill their skills gaps with targeted courses and peer learning through networks of school leaders to support champions who can drive change. Professional development should include a focus on establishing safe, inclusive learning environments, staying current on the science of learning and innovative teaching and learning approaches, mentoring and supporting teachers, engaging and collaborating with education stakeholders and the community, and using technology and education management information systems.

### *Provide School Leaders with Tools to Manage with Autonomy*

**In the vision of an equitable, resilient education system in which learning occurs with joy, purpose, and rigor, school leaders are knowledgeable instructional leaders who lead innovation in learning approaches—but in reality, school leaders often lack the capacity or support to perform even the most basic administrative roles successfully.** Effective school leadership has not always received the policy attention it deserves,

perhaps in part because what is measured is monitored, and school management practices have only recently started to be defined and measured. Nevertheless, management matters; recent research has shown that improvement in the measured quality of managerial practices in schools is associated with large increases in student learning (Adelman and Lemos 2020).

**Effective management requires autonomous decision-making at all levels of the education system, framed by clear mandates and accountability structures.** School leaders should receive a clear delineation of their duties, specifying the desired objectives and the resources needed to achieve them, and be given the space and autonomy to manage their institutions.

**A critical component of autonomous management is a data management system that allows leaders to focus on improving outcomes in their institutions.** School leaders need access to school-level data on learning and its associated drivers so that they can make improving learning a serious goal and promote the changes needed to achieve it (Hattie 2010). A next step is to harness technology for smart management—such as mobile-based data collection, biometrics for teacher attendance, and mobile payments—giving principals time to perform work that supports schools and classrooms (De Hoyos, Ganimian, and Holland 2019, 2020; De Hoyos, Garcia-Moreno, and Patrinos 2017). The role of data for managerial and pedagogical decisions and overall decision-making needs to be emphasized. The potential of technology for data collection and use—for instance, to improve education management information systems for sector management and to develop early warning systems for youth at risk—is huge and a potential game-changer.

**These school-level data need to feed into and align with robust systems for measuring learning outcomes and related drivers of learning at the system level.** Measuring learning outcomes and related drivers allows school leaders and policymakers to plan. The World Bank will support countries in measuring and understanding the drivers of learning through measurement programs such as the Service Delivery Indicators initiative and the Global Education Policy

Dashboard and programs to promote creation and use of evidence through impact evaluations (e.g., Strategic Impact Evaluation Fund).

## *Invest in System Leadership and Management Capacity*

**Capable school leadership—and all five pillars of well-functioning school communities—need support from good system management, which in turn requires bureaucratic capacity.** Education systems are complex organisms, and the management capacities needed at all levels of the education system to provide universal, quality service to millions of students are immense. At the central and regional levels, the state needs to build a strong, capable bureaucracy, with strengths in different disciplines and strong capabilities in budget formulation and execution, financial management, logistics and procurement, and public administration, in addition to all the education-specific skills needed. In systems in which the private sector plays a critical role in providing services, the regulatory role of the state is complex (and unavoidable). At the school level, as mentioned in the school leaders pillar, principals need to be pedagogical and managerial leaders who can ensure that the magic of learning happens through repeated interactions between teachers, parents, and hundreds or even thousands of students.

**Lack of bureaucratic capacity is often what prevents good policies and programs from being sustained and scaled up.** A country's ability to execute change depends largely on the quality of its civil service and the organizational and incentive structures of the ministries. Countries need civil servants in the education sector with adequate technical and management knowledge and a commitment to and a clear understanding of the importance of their mandate. But implementation capacity varies among civil services in different countries and contexts, and in many cases, lack of capacity in education is a major obstacle to the success of policy change. This lack of capacity is also related to political commitment. It is not by chance that the most effective, best-trained bureaucracies are often found in ministries of finance or central banks; political leaders understand that their countries' success (and their own political futures) hinge

on avoiding crises and promoting stable growth, but the consequences of limited capacity in education ministries are not always as obvious. Moreover, the scale of education ministries and geographical dispersion of their staff can make it difficult to monitor and improve their performance.

**The World Bank will work with countries on a long-term agenda of building bureaucratic capacity to promote learning.** Countries need to attract and develop capable public officials into education ministries—technocrats with the skills and orientation necessary to design and implement good programs and policies based on evidence. Politics often intrudes in the selection of education ministry staff and in the priorities that the system communicates to them. Changing this situation requires recognizing how difficult

it is to provide high-quality education services and how important to place committed professionals in these ministry positions. In particular, the World Bank will support governments in attracting and developing skilled technocrats who can design and implement programs and policies based on evidence, ensure that there are professional development opportunities for civil servants, and design and implement clear mechanisms to hold civil servants accountable.

**In the meantime, where capacity is still limited, it may be important to simplify policy and program design.** All countries begin from different starting points, and strong bureaucracies are not developed overnight. Until there is greater capacity, policies and programs should be kept simple enough that the existing administration can implement them.

# Scaling and Sustaining the Vision for the Future of Learning

SCALING AND SUSTAINING THE VISION FOR THE FUTURE OF LEARNING

REALIZING THE FUTURE OF LEARNING
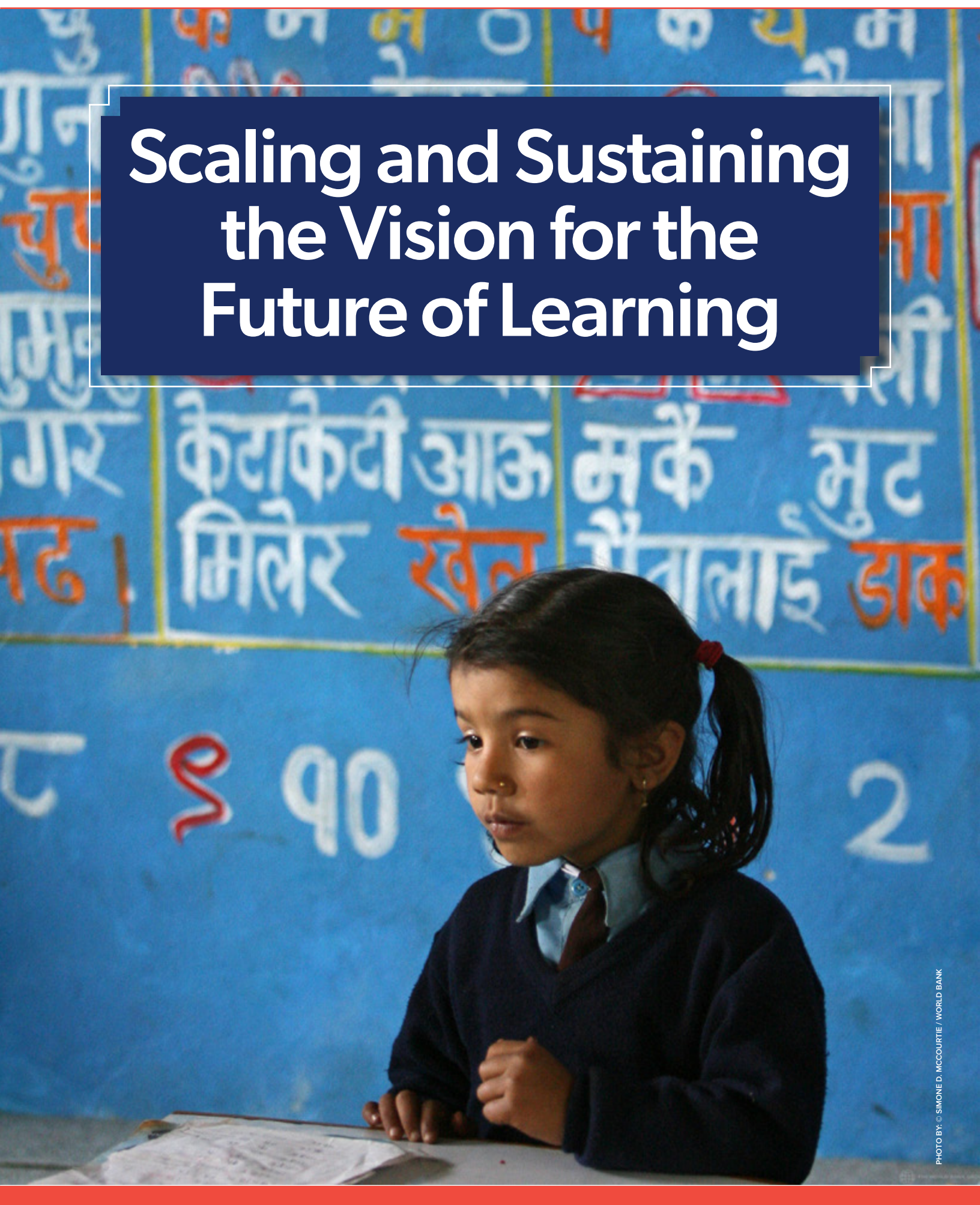
**S**caling and sustaining the outlined approach requires operating according to several core principles (summarized in figure 4). These principles aim to ensure that countries obtain the best value possible (in terms of learning and acquired skills) from the resources they invest in education systems.

## Figure 4: Core Principles to Guide Reform Efforts Toward the Vision for the Future of Learning

**1** Pursue systemic reform supported by political commitment to learning for all children

**2** Focus on equity and inclusion, and equity, through a progressive path towards universalism

**3** Focus on results and use evidence to keep improving policy

**4** Ensure financial commitment that is commensurate with what is needed

**5** Invest wisely in technology

## Pursue Systemic Reform Supported by Political Commitment to Learning for All Children

All inputs must be part of a coherent plan to increase learning, and all interventions should be aimed at permanently increasing the country's capacity to deliver high-quality education. For example, effective teaching is critical for quality education, and successful systems establish a socially valued professional career for teachers, but that is not enough. Teachers need the right learning monitoring systems, educational resources, professional development, and a reasonable accountability framework to be able to interact effectively with students. Reform is not only about the delivery of inputs and training, but also the development of a system that can effectively deploy a service to all, with a focus on learning. It is about developing a system that ensures that children go to school and that, in every school, classroom dynamics

ensure learning and a positive education experience for all. In many systems, this also implies shifting away from a system designed only to provide a credential to pursue further studies or one whose objective is to filter students who, for whatever reason, are better positioned to move to the next level. Successful systems are built so that everyone learns.

A crucial step in this systemic change is crafting "instructional coherence": coherence in terms of the curriculum (what students are expected to learn), teachers' pedagogical approaches (how students are taught), and assessment (how the system checks whether students are learning), along with strong political alignment across the system toward this instructional coherence. The scope and sequence of what is taught needs

to be consistent with the best knowledge of how children learn. This includes streamlining curricula to focus on what is essential in terms of basic skills such as literacy and numeracy, but also socioemotional and digital competencies that will prepare them for adulthood and the changing nature of work. Teachers should be trained in the pedagogical techniques that are most relevant and effective in facilitating student learning of the curriculum, and assessment systems need to capture the most important aspects of the curriculum, as well as feed into adaptive teaching and learning approaches that allow for personalized learning.

**Beyond the education system, there must be a whole-of-government approach.** To improve learning for all, many sectors and levels within the government must work together for effective delivery. Education accounts for 15 percent to 20 percent of the public budget, so its operation has critical macroeconomic implications. Thus, all reforms require ministries of finance to align their actions with the education goals and to see all expenditures in education as investment. Improving educational services also requires the contribution of many sectors. Authorities in such sectors as health, social development, transportation, telecommunications, agriculture, water, and sanitation all have a role in helping increase access and improve the quality of education. It is difficult for leadership in the education sector to implement successful education reform alone.

**Political alignment around education reform is a precondition to ensuring that learning for everyone, everywhere is always the focus of reform efforts.** Good technical design is not enough for scalability and sustainability. Effective interventions require an enabling political environment in which all stakeholders are aligned toward learning. That a system should be focused on ensuring that children are in school and learning sounds obvious, but it often is not (Saavedra 2019). Goals other than student learning often drive the behavior of the actors who shape education (World Bank 2018a). Politicians sometimes prioritize providing benefits to favored groups, for example by awarding jobs in the education sector through patronage rather than based on merit. Bureaucrats might

try to protect their power base or their jobs rather than promoting learning for all. Teachers, even though they care about their students, sometimes make choices more motivated by a desire for job security or an aversion to being evaluated. For-profit providers might push for solutions that do not promote student welfare or prioritize providing a well-marketed but low-quality service. Private sector employers may prioritize low taxes over investments in improving the skills of the future workforce. In the budgetary process, education might be wrongly seen as consumption rather than investment.

**To improve educational outcomes, therefore, political alignment is critical.** It must be forged around a reasonable political and policy strategy that commands a reasonable level of consensus and transcends political administrations. A promising policy can take several years to implement and succeed, meaning that it must be able to survive changes in governments. Adjustments will always have to be made as part of a continuous policy learning process, but broad lines of action must be maintained across administrations. Political alignment around education requires a commitment to learning so that all decisions are made with the objective of ensuring that all children and youth are in school and learn, which is a highly political decision.

**Political alignment around education reform is especially crucial in contexts of fragility, conflict, and violence.** Fragile countries, countries experiencing conflict, and countries affected by interpersonal violence face context-specific challenges that external shocks such as pandemics and climate change exacerbate. There are often deep governance challenges and weak institutions; inability or unwillingness of the state to manage risks that social, economic, political, security, and environmental factors pose; and limited provision of basic services, leading to citizen grievances and high levels of exclusion, especially for vulnerable populations such as girls, young women, and refugees. These challenges need to be addressed particularly as they apply to education, because education in these contexts is even more important—for individuals, for nation building, and for peace building.

## Focus on Equity and Inclusion Through a Progressive Path Toward Universalism

**All students should receive the support they need to learn.** One way to ensure that this happens is through a progressive path to universalism—starting with one group (be it those in most need, minorities, or others) and progressively expanding, with the goal of eventually reaching all. Striving for inclusiveness and equity can go together with increasing systemwide quality, because empirically, high-performing systems tend to have less variance in outcomes. Inclusiveness means providing the technical, human, and financial resources necessary for all children to have positive learning experiences, independent of where they live, their gender, or whether they have a disability. Successful systems ensure that everyone receives the right services.

**Nevertheless, equity does not necessarily imply making the same effort and allocating the** same financial resources for everyone. Equity sometimes requires investing more resources to ensure that children who live in rural areas, have a disability, or are from a linguistic minority have the same-quality service as anyone else. Moreover, equity requires that all actors in the system believe that all children have the right to learn—and that they all can learn. Many systems are more oriented toward selecting elites or filtering out those who can progress in the educational system, often relying on assessment systems that are not fair, valid, or reliable. Sometimes there is a misperception that students from poorer backgrounds or dysfunctional homes or who are malnourished are not capable of learning. In systems that provide opportunities to all, everyone understands that, when a child is not learning it is not the child's fault and that no trait of the child should be accepted as a barrier to

learning. Unfortunately, even in countries that have succeeded in increasing enrollment, factors such as disability, ethnic background, and socio-economic background are often major drivers of differences in learning.

**Inclusive education requires a profound mind shift at all levels of education, from early years to postsecondary education, to build and strengthen one system of education for all learners by providing support inclusive of** **learners with disabilities.** One way to build an inclusive education system for all learners in a sustainable way would be to use a twin-track approach, which means implementing measures to ensure that all learners (including learners with disabilities, girls, minority language populations) can participate in and benefit from general education inventions, while also ensuring that targeted activities to benefit and empower specific marginalized groups (e.g., persons with disabilities, girls, minority groups) are provided.

## Focus on Results and Use Evidence to Keep Improving Policy

**All interventions should be based on a clear theory of change, and inputs, processes, and outcomes should be measured and monitored to increase accountability and efficiency at all levels.** A first step in promoting learning for everyone, everywhere is knowing whether it is happening; hence the importance of measuring learning. The learning poverty rate is 53 percent. That is a tragically high number, but the fact that we can report that figure is an accomplishment. Data on learning are critical to guiding planning and monitoring where more investments are needed, but much more information is necessary. For example, data on and evidence of the effectiveness of interventions are crucial for selecting and implementing the right policies and programs. Equipped with this information, governments can and should make choices based on answers to the question: "Will this proposed policy or program move us toward joyful, rigorous, purposeful learning for all children and youth?" The ideas laid out under the five pillars above stem from thinking through the question, but in any particular context, based on the evidence available, that question may lead the design in a different direction.

**Whatever the choice of intervention, good design is not enough; effective implementation requires continuous monitoring, evaluation, learning, and redesign.** Reforms to improve learning are more challenging to design than construction 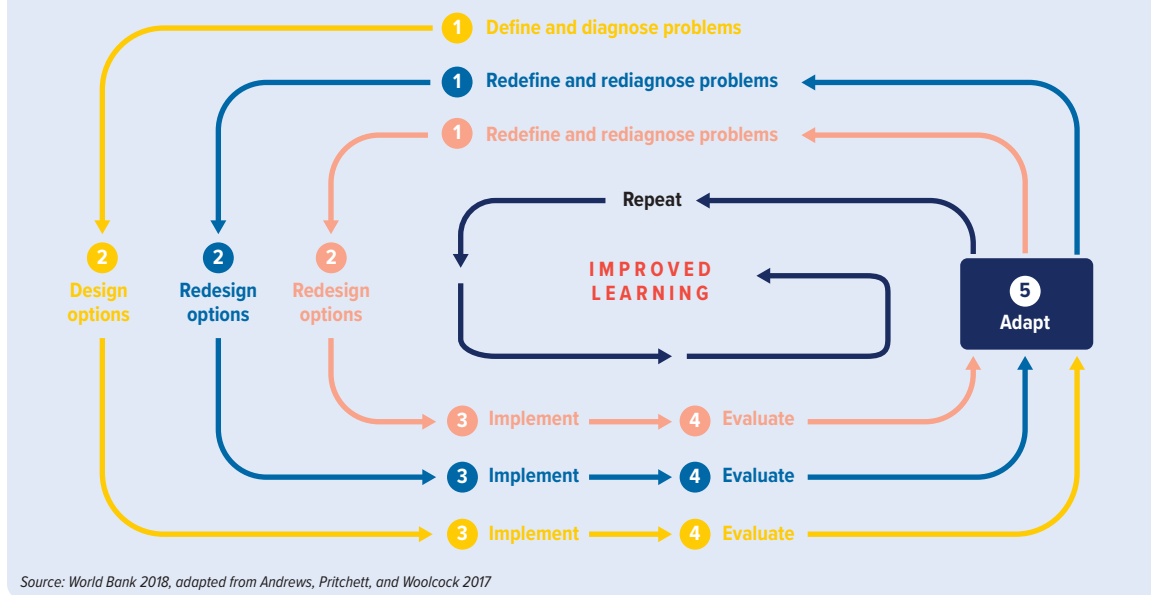of school buildings—and given the paucity of rigorous evidence, designing programs so that children learn with joy, purpose, and rigor will be even harder. Such reforms require behavioral changes by students and teachers, which may be hard to predict. Therefore, as they promote inclusive learning, the governments that implement these reforms and organizations that support them, including the World Bank, need to be learning organizations—learning continuously and adapting when necessary, because we need to learn what works in any context.

**What does this continuous learning look like?** It does not mean waiting to act until we have all the data we would like. Decisions must be made with the information available, especially given the urgency of the learning crisis. It means investing continuously in learning while doing.

- ∞ **For any particular intervention or input, it may be possible to run an experiment or implement some other kind of rigorous evaluation, so that we can determine its effectiveness (at least at that specific time and place and under those conditions).** In the case of programs that are (or are planned to be) large-scale, serious evaluation should be a priority. In some cases, a "nimble" evaluation design may be the best approach so that the results can feed back into the policy process in time to influence redesign.[7]

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7  For examples of nimble evaluations funded by the Strategic Impact Evaluation Fund, see https://www.worldbank.org/en/programs/sief-trust-fund/brief/nimble-summaries

Figure 5: Learning While Doing—Applying Problem-Driven Iterative Adaptation to Reforms



Source: World Bank 2018, adapted from Andrews, Pritchett, and Woolcock 2017

∞ **By contrast, systemic reform cannot be subject to this kind of controlled evaluation, even if some of its components can.** This is why it is critical to apply principles like those laid out above to design the reforms—but also to engage in monitoring and evaluation with the best data available.

∞ **Successful historical reforms have used this approach.** They started out with a clear articulation of the problem, together with an initial set of potential solutions, and then adopted solutions that emerged from experimentation during implementation. Final interventions tended to be hybrids, drawing on local and global evidence (figure 5) (Andrews 2015).

**To make all this possible, education systems should invest much more in collecting, analyzing, and using data for decision-making.** Use of data is transforming entire industries, driving innovation, and changing the way we live, but a concerted effort has not been made to collect, store, analyze, and use this data to improve education delivery, management, and learning outcomes. In particular, technology will be essential in building robust education management information systems. Technologies such as artificial intelligence, machine learning, and big data analytics are maturing and can help decision-makers derive insights into the data and make data-driven decisions. An even more exciting possibility is "learning analytics"—the use of data to track student performance, identify those falling behind or at risk of dropping out, and tailor instructions to student needs. Technology is available to track book distribution, manage teacher recruitment and deployment, and track education system spending, among other uses. When data are presented in open formats for public information and use, not only government, but also a diverse set of stakeholder groups can use them to make data-driven decisions. All of these innovations need to come in the context of secure systems that prioritize protection of students' and educators' privacy above all. Without an emphasis on privacy and security, the promise of data will be jeopardized. Creating these strong, secure data and evaluation systems will require capacity-building in terms of data management and use, again from macro to micro levels of the education system.

## Ensure Financial Commitment Commensurate with What Is Needed to Provide Basic Services to All

**As in the case of all other public resources, money allocated to education must be adequate and spent efficiently.** Many countries are underinvesting in education; expenditures per primary school-aged child average USD188 in low-income countries, USD891 in lower middle-income countries, USD2,504 in upper middle-income countries, and USD8,089 in high-income countries (Al-Samarrai, Cerdan-Infantes, and Lehe 2019). Although there is no magic number that countries should commit to, there are huge expenditure needs in low- and middle-income countries, and resources per child must increase (and be well spent). Education financial planning should be based on calculating what is needed to provide at least basic services to everyone and then deploying domestic resource mobilization efforts accordingly. A basic social contract is needed under which taxes are collected to finance a minimum level of service for everyone.

**Long-term, predictable education financing and greater efficiency in its use will be crucial.** This is particularly true given the economic downturn looming in the wake of the COVID-19 pandemic, which means that budget allocations for education will be even more restricted. This challenge is even greater because, before the pandemic, many countries were already underinvesting in education, with developing countries needing to almost double the share of national income devoted to education to address the learning crisis and reduce learning poverty. The volume of resources, timing of payback, and allocative efficiency outcomes of the vision outlined in this report require affordable, new, low-risk sources of predictable long-term financing. Examples of how to achieve this include creating a financing facility based on future donor pledges and using pension funds to invest in financial instruments or bonds for education. In terms of packaging the financial "ask", countries could benefit from requesting support for an outcome (e.g., a teacher with digital skills) rather than an input (e.g., teacher salaries). Overall levels of spending and decisions on the use of funds must be aligned with learning objectives and allocated equitably. There also need to be systems of accountability and capacity-building where government agencies lack the capacity to use funds efficiently.

## Invest Wisely in Technology

**Education systems must embrace and learn to harness technology to support their learning objectives.** Technology has a crucial role to play across all five pillars of a robust education system, as has been discussed throughout this report. A multicountry comparison study of technology in education emphasized the need for a long-term, strategic vision for the use of education technology in schools, embodied in written policy and supported by legislation, to guarantee longevity (Omidyar Network 2019). Initiatives should be communicated clearly to parents, teachers, and school leaders and should include guidelines on what technology is recommended and for whom and how it is to be used. Early investments in education technology are paying off, showing that countries could reap dividends if they started investing strategically now (Ripani 2020).

**Education policies and initiatives that use EdTech should embrace an interrelated set of five principles to optimize their effect on learning.** These principles for using education technology effectively in schools and in the delivery of education services are outlined in the World Bank's EdTech Approach Paper, *Reimagining Human Connections: Technology and Innovation in Education at the World Bank* (Hawkins et al 2020). The use of EdTech should be guided by a clear purpose and focus on educational objectives; reach all learners; empower teachers; engage an ecosystem of partners; and rigorously and routinely use data to learn what strategies, policies, and programs are effective to maximize student learning. In pursuit of this goal, the World Bank will work to discover evidence-based technology solutions in education, diffuse knowledge of what works widely to policymakers, and deploy these solutions at scale by supporting capacity development to better use this new knowledge.

**We must act with urgency.** Many education reforms take time to affect the lives of teachers and students. In many countries, pre-service institutions must be strengthened, infrastructure built, and the structure of the teaching career modified. Those reforms are essential, but there are children who need better-quality education today. Today's 8-year-olds cannot wait for pilots or protracted structural reforms to improve the educational services they are receiving—or to get them into school in the first place. Many countries need to work on short- and long-term objectives because governments must move quickly to improve service delivery for students going to school and improve learning outcomes today.

**This report has described the World Bank Education Global Practice's vision for the future of learning.** It presents this vision to guide, inform, and inspire the design and implementation of national systemic efforts to build equitable, resilient education systems during the COVID-19 pandemic and beyond, but it also emphasizes the need to lay the groundwork for achieving this vision based on where systems are today. Through visionary strategic action, it is hoped that policymakers and stakeholders around the globe will seize the opportunities this crisis presents to transform education systems so they can truly enable provide learning with joy, purpose, and rigor for everyone, everywhere.

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