



DEVELOPMENT COMMITTEE
(Joint Ministerial Committee
of the
Boards of Governors of the Bank and the Fund
on the
Transfer of Real Resources to Developing Countries)

DC2017-0008
September 19, 2017

**REPORT TO GOVERNORS ON THE
WORLD DEVELOPMENT REPORT 2018:
LEARNING TO REALIZE EDUCATION'S PROMISE**

Attached is a final version of the document entitled "Report to Governors on the World Development Report 2018: Learning to Realize Education's Promise" prepared by the World Bank Group for the October 14, 2017 Development Committee Meeting.

**Report to Governors on the
World Development Report 2018: *LEARNING to Realize Education's Promise*
Main Messages**

1. **Schooling is not the same as learning.** Some countries have discovered this, when they have taken the bold decision to get more serious about measuring student learning. In Kenya, Tanzania, and Uganda, when grade 3 students were asked recently to read a sentence such as “The name of the dog is Puppy” in English or Kiswahili, three-quarters did not understand what it said.¹ In rural India, nearly three-quarters of students in grade 3 could not solve a two-digit subtraction such as “46 – 17”—and by grade 5, half still could not do so.² Although the skills of Brazilian 15-year-olds have improved, at their current rate of improvement they will not reach the rich-country average score in math for 75 years. In reading, it will take 263 years.³ Without learning, children—and their societies—are accumulating too little human capital.

2. **Schooling without learning is not just a wasted opportunity, but a great injustice: the children whom society is failing most are the ones who most need a good education to succeed in life.** Without learning, education fails to deliver fully on its promise as a driver of poverty elimination and shared prosperity. Within countries, learning outcomes are almost always much worse for the disadvantaged. In Uruguay, poor children in grade 6 are assessed as “not competent” in math at 5 times the rate of wealthy children.⁴ Moreover, such data are for children and youth lucky enough to be in school. Some 260 million aren't even enrolled in primary or secondary school, with members of disadvantaged groups—poor children, girls, children with disabilities, ethnic minorities—most likely to be out of school.⁵

3. **There's nothing inevitable about low learning in low- and middle-income countries: when improving learning becomes a priority, great progress is possible.** Starting in the early 1950s as a war-torn society with very low literacy rates, the Republic of Korea by 1995 had achieved universal enrollment in high-quality education through secondary school—with its young people performing at the highest levels on international learning assessments. Vietnam surprised the world when the 2012 results from PISA showed that its 15-year-olds performed at the same level as those in Germany—even though Vietnam was a lower-middle-income country. Between 2009 and 2015, Peru achieved some of the fastest growth in overall learning outcomes—due to concerted policy action. In several countries (such as Liberia, Papua New Guinea, and Tonga), early grade reading improved substantially within a very short time, thanks to focused efforts based on evidence.

4. **The crisis has three main dimensions.** First is the learning crisis itself, which manifests itself in low levels of learning, high inequalities (across income, gender, and other characteristics), and slow improvements in learning. The second dimension is the immediate causes of the crisis, seen in the various ways that the teaching and learning relationship breaks down—for example, when children arrive unprepared to learn, or when teachers lack the skills or motivation to teach effectively. Third, the WDR 2018 emphasizes that these breakdowns are themselves driven by deeper system-level factors that pull the various actors away from a focus on learning.

5. **To do better, a nation must: assess learning, make schools work for learners, and reform the system to make it work for learning.**

First, assess learning, so it can become a serious goal.

- Only half of all countries have metrics to measure learning at the end of primary and lower secondary school—indicators required to monitor progress toward SDG4. Fewer still the ability to track learning over time.
- Countries need to put in place a range of well-designed student assessments to help teachers guide students, improve system management, and focus society's attention on learning. These measures can spotlight hidden exclusions, inform policy choices, and track progress.

Second, make schools work for learners.

- Great schools are those that build strong teaching-learning relationships in the classroom. As educators have innovated and brain science has advanced, knowledge of how students learn most

effectively has exploded. But what countries do in their schools and communities often diverges sharply from what evidence identifies as the most promising approaches to learning.

- Countries can use the evidence to make schools work better. The best place to start is these three key areas:
 - *Prepared learners*: Reduce stunting and promote brain development through early nutrition and stimulation (as in Chile) so children can learn. Support disadvantaged children with grants to keep them in school (as in Cambodia).
 - *Skilled, motivated teachers*: Attract great people into teaching (as in Finland). Use repeated, specific teacher training reinforced by mentors (as in some African settings) instead of the ineffective one-off methods that are more common.
 - *Inputs and management focused on teaching and learning*: Deploy technologies that help teachers teach to the level of the student (as in Delhi, India). Strengthen the capacity and powers of school management (as in Indonesia), including principals.

Third, reform the system, to make it work for learning.

- All this innovation in classrooms is unlikely to have much impact if system-level technical and political factors prevent a focus on learning. Many interventions have failed because key actors are focused on non-learning goals (such as political or personal gain), and they lack implementation capacity even when they do target learning. These factors lead to the poor service delivery—absent teachers, missing or inappropriate textbooks, ineffective technologies—that drives low learning.
- Countries can escape low-learning traps by acting on three fronts as they implement reforms:
 - Deploy *information and metrics* to make learning politically salient (as the NGO-led ASER and Uwezo programs have done in India and East Africa)
 - Build *coalitions* to shift political incentives toward learning for all (as Chile did early in its decades-long education reforms, and as Malaysia and Tanzania did recently with collaborative society-wide ‘labs’ to design reform programs)
 - Use *innovative and adaptive* approaches to find out which approaches work best in their context (as Burundi did when it iterated and adjusted its approach while rebuilding its education sector after conflict).

6. **These three sets of policy actions are necessary to ensure that a society’s investments in education pay off fully.** Given the many returns to human capital—financial and non-financial, for both individuals and societies—some countries clearly need to invest more in education, especially as more youth complete primary and secondary school and go on to higher education. At the same time, virtually all countries should spend more effectively. Across countries, the relationship between public spending on education and learning outcomes is weak, but the right investments can pay off. Used in conjunction with the actions outlined here, financing for education can give a boost out of low-learning traps and expand opportunity.

7. **Delivered well, education drives growth and development.** For individuals, it promotes employment, earnings, health, and poverty reduction. For societies, it drives long-term economic growth, spurs innovation, strengthens institutions, and fosters social cohesion. In short, it is our most powerful tool for eliminating poverty and promoting shared prosperity. But these benefits depend largely on learning: mounting evidence shows that the skills acquired are what drives growth and equips individuals for work and life. With learning, education boosts growth. Even a relatively modest improvement in learning—one that lifts all students to the level of the average student in Brazil—could increase long-term annual growth rates in a middle-income country like Mexico or Turkey by around 2 percentage points.⁶ Rapid technological change makes these foundational skills even more important, because it is those skills that enable workers and citizens to adapt rapidly to new opportunities. Countries have already made a start by getting so many children and youth into school. Now it is time to realize education’s promise—and make much better use of financial and human resources—by accelerating learning with equity.

Report to Governors on the
World Development Report 2018: LEARNING to Realize Education's Promise
Diagnosis and policy priorities

8. **The WDR 2018 lays out an agenda for ensuring that schooling leads to learning and skills.** This agenda requires first diagnosing the problem in a clear-headed way, and then tackling it with a set of policies built on metrics, evidence-based interventions, and system-level reform. Confronting this challenge successfully is essential for economies to accumulate the human capital they need for sustained growth and development.

Diagnosis: Three dimensions of crisis

9. **Education should equip students with the skills they need to lead healthy, productive, meaningful lives.** Different countries will define skills differently, but all share some core aspirations, embodied in their curriculums. Students everywhere must learn how to interpret many types of written passages—from medication labels to job offers, from bank statements to great literature. They have to understand how numbers work so that they can make transactions in markets, set family budgets, interpret loan agreements, or write engineering software. They require the higher-order reasoning and creativity that builds on these foundational skills. And they need the socioemotional skills—like perseverance and the ability to work on teams—that help them apply what they have learned.⁷ But the learning that one would expect to happen in schools—whether expectations are based on formal curriculums, needs of employers, or just common sense—is often not occurring, especially for the already marginalized.⁸

10. **This WDR focuses on how to build the foundational skills that are essential to productive work and citizenship, both now and in the future.** The focus of the Report is on foundations acquired from birth through primary and secondary school, with some discussion as well on skills for labor markets. A growing body of research shows that these foundations (for examples, the literacy, numeracy, and reasoning skills) influence everything from individual productivity and earnings to health to economic growth. These skills also allow adaptability and lifelong learning, meaning that they are essential to taking advantage of rapid technological change in what has been called the Fourth Industrial Revolution.⁹ To allow a focused message, the WDR does not discuss other areas such as tertiary or adult education—which does not mean that these areas are unimportant, but signals how crucial it is to get these foundations right. The Report's main messages all have implications for these other sectors as well.

Dimension 1: The learning crisis—low levels, high inequality, slow progress

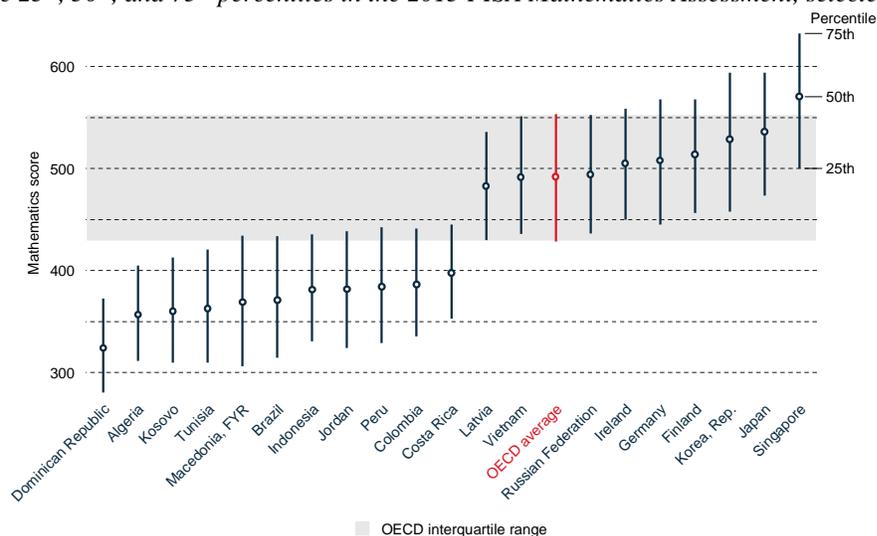
11. **The recent expansion in education is impressive by historical standards.** In many developing countries, net enrollment in education has greatly outpaced the historic performance of the today's high-income countries. It took the United States 40 years—from 1870 to 1910—to increase girls' enrollments from 57 percent to 88 percent. By contrast, Morocco achieved a similar increase in just 10 years.¹⁰ The number of years of schooling completed by the average adult in the developing world more than tripled from 1950 to 2010, from 2.0 to 7.2 years.¹¹ By 2010 the average worker in Bangladesh had completed more years of schooling than the typical worker in France in 1975.¹² This progress means that most enrollment gaps in basic education between high- and low-income countries are closing. By 2008 the average low-income country was enrolling students in primary school at nearly the same rate as the average high-income country.

12. **But in many education systems around the world, children learn very little: even after several years in school, millions of students lack basic literacy and numeracy skills.** Recently, in Ghana and Malawi more than three-fifths of students at the end of grade 2 were unable to read a single familiar word such as “the” or “cat”.¹³ In Peru, a middle-income country, that share was half before the recent reforms.¹⁴ When grade 3 students in Nicaragua were tested in 2011, only half could correctly solve $5 + 6$.¹⁵ In urban Pakistan in 2015, three-fifths of grade 3 students could correctly perform a subtraction like $'54 - 25'$; in rural areas, just over two-fifths could.¹⁶

13. **This slow start to learning means that even students who make it to the end of primary school do not master basic competencies.** In 2007, the most recent year for which data are available, less than 50 percent of grade 6 students in southern and East Africa got beyond the level of “reading for meaning,” and less than 40 percent got beyond “basic numeracy.”¹⁷ Among grade 6 students in West and Central Africa in 2014, less than 45 percent reached the “sufficient” competency level for continuing studies in reading or mathematics—for example, the rest could not answer a math problem that required them to divide 130 by 26.¹⁸ In rural India in 2016 only half of grade 5 students could fluently read text at the level of the grade 2 curriculum, which included sentences (in the local language) such as “It was the month of rains” and “There were black clouds in the sky.”¹⁹ These severe shortfalls constitute a learning crisis.

14. **While not all developing countries suffer from such extreme shortfalls, many fall far short of levels they aspire to.** Leading international assessments on literacy and numeracy—Progress in International Reading Literacy Study (PIRLS) and Trends in International Mathematics and Science Study (TIMSS)—show that the average student in low-income countries performs worse than 95 percent of the students in high-income countries—meaning that the student would be singled out for remedial attention in a class in those countries.²⁰ Many high-performing students in middle-income countries—young men and women who achieve in the top quarter of their cohorts—would rank in the bottom quarter in a wealthier country. In Algeria, the Dominican Republic, and Kosovo, the test scores of students at the cutoff for the top quarter of students (the seventy-fifth percentile of the distribution of PISA test-takers) are well below the cutoff for the bottom quarter of students (twenty-fifth percentile) of OECD countries (figure 1). Even in Costa Rica, a relatively strong performer in education, performance at the cutoff for the top quarter of students is equal to performance at the cutoff for the bottom quarter in Germany.

Figure 1: In some countries the 75th percentile on PISA performs below the 25th percentile of the OECD average
Performance at the 25th, 50th, and 75th percentiles in the 2015 PISA Mathematics Assessment, selected countries



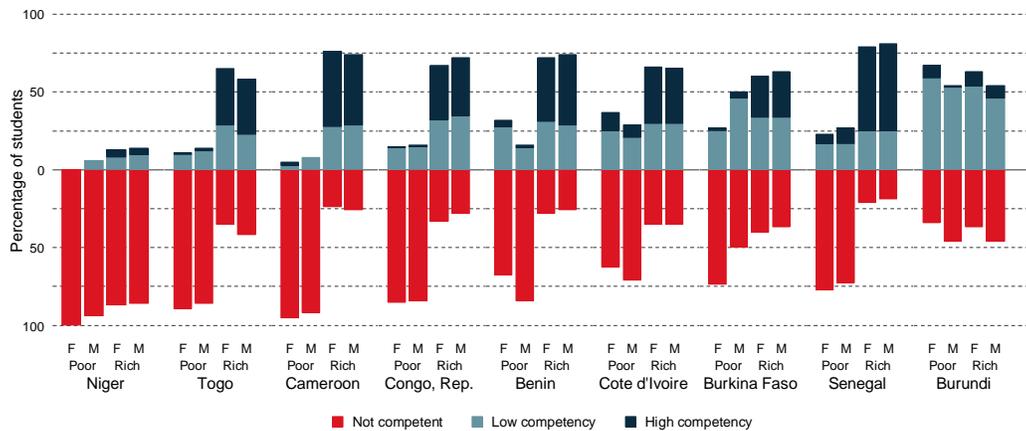
Source: WDR Team with data from OECD (2016).

15. **The learning crisis amplifies inequality: it severely hobbles the disadvantaged youth who most need the boost a good education can offer.** For students in many West African countries, differences by income level are stark (figure 2). In a recent assessment administered at the end of the primary cycle (the PASEC 2014 assessment), only 5 percent of girls in Cameroon from the poorest quintile of households had learned enough to continue further in schooling, compared with 76 percent of girls from the richest quintile. Learning gaps by income in several other countries—Benin, Republic of Congo, Senegal—were nearly as wide. Moreover, income is not the only dimension that matters: learning outcomes are often highly unequal along disability, gender, and ethnic lines, and displaced children and youth typically fare worse even when they are in school. Rather than narrowing gaps, education systems often exacerbate them. In

New Delhi, India, the average grade 6 student performed at a grade 3 level in math; by grade 9, the average had reached only a grade 4 level, with the gap between the better and worse performers growing over time. Costa Rica and Qatar have the same average score on one internationally benchmarked assessment (TIMSS)—but the gap between the top and bottom quarters of students is 138 points in Qatar, compared with 92 points in Costa Rica. The gap between the top and bottom quarters in the United States is larger than the gap in the median scores between Algeria and the United States.

Figure 2: Children from poor households typically learn much less

Percentage of grade 6 PASEC test-takers who score above (blue) and below (red) the sufficiency level on reading achievement by sex and poorest and richest quintiles



Source: PASEC “Country Report Cards” 2017.

Note: Quintiles are nationally defined. Not competent refers to levels 0-2 in the original coding, and is considered below the sufficiency level for school continuation; low competency refers to level 3; and high competency refers to level 4.

16. **While some countries are making progress on learning, that progress is typically slow.** Even the countries that are catching up to top performers are doing so very slowly. Indonesia has registered significant gains on PISA over the past 10–15 years. Yet even assuming it can sustain its 2003–15 rate of improvement, Indonesia will not reach the OECD average score in mathematics for another 48 years; in reading, for 73. For other countries, the wait could be even longer: on current trends, it would take Tunisia over 180 years to reach the OECD average for math.

17. **Millions of youth remain out of school—the ultimate barrier to learning.** In 2016, 61 million children of primary school age—10 percent of all children in low- and lower-middle-income countries—were out of school, along with 202 million children of secondary school age.²¹ Children in fragile and conflict-affected countries accounted for just over a third of these, a disproportionate share. In the Syrian Arab Republic, which achieved universal primary enrollment in 2000, the war had driven 1.8 million children out of school by 2013.²² Almost all developing countries still have pockets of children from excluded social groups who do not attend school. Poverty most consistently predicts failing to complete schooling, but other characteristics such as gender, disability, caste, and ethnicity also frequently contribute to school participation shortfalls.

18. **But it’s not just poverty and conflict that keep children out of school; the learning crisis does too.** When poor parents perceive education to be of low quality, they are less willing to sacrifice to keep their children in school—a rational response, given the constraints they face.²³ Though parental perceptions of school quality depend on various factors, from the physical condition of schools to teacher punctuality, parents consistently cite student learning outcomes as a critical component.²⁴ These outcomes can affect behavior: holding student ability constant, students in Egypt who attended poorer-performing schools were more likely to drop out.²⁵

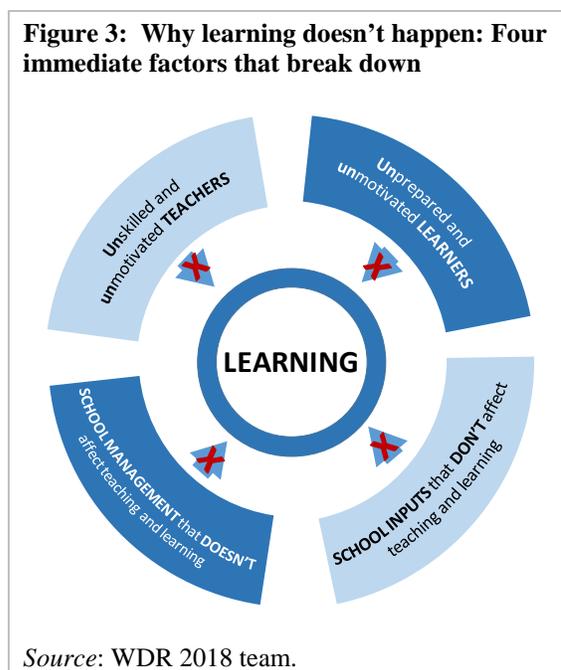
19. **Learning shortfalls during the school years eventually show up as weak skills in the workforce**—so when people in countries around the world debate the job-skills problem, they’re really talking about the learning crisis. Because education systems have not prepared workers adequately, many enter the labor force with inadequate skills. Recent initiatives have assessed a range of skills in the adult populations of numerous countries. They find that even foundational skills such as literacy and numeracy are often low, let alone more advanced skills. The problem is not just a lack of trained workers; it is a lack of readily trainable workers. Accordingly, many workers end up in jobs that require minimal amounts of reading or math.²⁶ A lack of skills reduces job quality, earnings, and labor mobility.

20. **Tackling the learning crisis gaps requires diagnosing its causes—both the immediate causes at the school level and their deeper systemic drivers.** The manifestations of the learning crisis vary across countries and contexts, but some common drivers recur across settings. The WDR therefore examines how schools are failing learners, and then how systems are failing schools.

Dimension 2: Immediate causes of the learning crisis

21. **Struggling education systems lack one or more of four key school-level ingredients for learning:** prepared learners, effective teaching, learning-focused inputs, and the skilled management and governance that pulls them all together (figure 3).

22. **First, children often arrive in school unprepared to learn.** Malnutrition, illness, low parental investments, and the harsh environments associated with poverty all undermine early childhood learning.²⁷ Severe deprivations—whether in terms of nutrition, unhealthy environments, or lack of nurture by caregivers—all have long-lasting effects because they impair infants’ brain development.²⁸ Thirty percent of children under 5 in developing countries are physically stunted, meaning they have low height for age, typically due to chronic malnutrition.²⁹ The poor developmental foundations and lower levels of preschool skills resulting from deprivation mean many children arrive at school unprepared to benefit from it.³⁰ Even in a good school, deprived children learn less. Moreover, breaking out of lower learning trajectories becomes harder as these children age, because the brain becomes less malleable. Thus, education systems tend to amplify initial differences. Moreover, many disadvantaged youth are not in school, further widening gaps in outcomes.



23. **Second, teachers often lack the skill or motivation to be effective.** Teachers are the most important factor affecting learning in schools. In the United States, students with great teachers advance 1.5 grade levels or more over a single school year, compared with just 0.5 grade levels for those with a poor teacher.³¹ In developing countries teacher quality can matter even more than in wealthier countries.³² But most education systems do not attract applicants with strong backgrounds. Fifteen-year-old students who aspire to be teachers score below the national average on the PISA assessment in nearly all countries.³³ Beyond that, weak teacher education results in teachers’ lacking subject knowledge and pedagogical skills. In 14 Sub-Saharan African countries, the average grade 6 teacher performs no better on reading tests than do the highest-performing students from that grade.³⁴ In many developing countries substantial amounts of learning time is lost because classroom time is spent on other activities or because teachers are absent. Only a third of the available time was used for instruction in Ethiopia, Ghana, and Guatemala.³⁵ In seven Sub-

Saharan countries, one in five teachers were absent from school on the day of an unannounced visit, with another fifth absent from the classroom even though they were at school (figure 4).³⁶ The problems are more severe in remote communities, amplifying the disadvantages already facing rural students. Such diagnostics are not intended to blame teachers. Rather, they call attention to how systems undermine learning by failing to support them

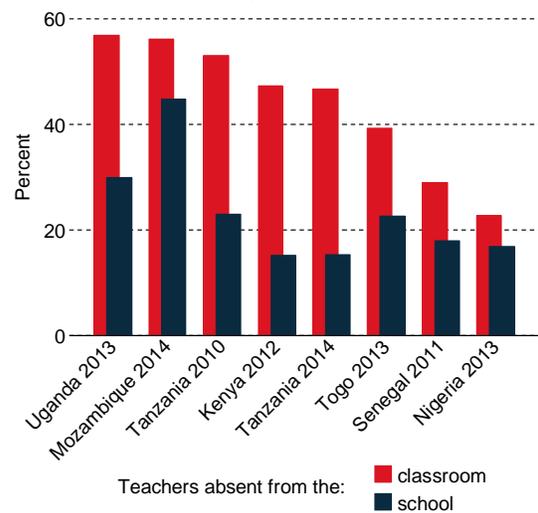
24. **Third, inputs often fail to reach classrooms or to affect learning when they do.** Public discourse often equates problems of education quality with inadequate resources. But input shortages explain only a small part of the learning crisis. First, looking across systems and schools, similar levels of resources are often associated with vast differences in learning outcomes.³⁷ Second, increasing inputs alone has small effects on learning outcomes.³⁸ Part of the reason is that inputs often fail to make it to the frontlines. In Sierra Leone, for example, textbooks were distributed to schools—but follow-up inspections found most of them locked up in cupboards, unused.³⁹ In Brazil, a One Laptop per Child initiative in several states faced years of delays. Even a year after the laptops finally made it to classrooms, more than 40 percent of teachers reported having never or rarely used them in classroom activities.⁴⁰

25. **Fourth, poor management and governance undermine schooling quality.** Though effective school leadership doesn't raise student learning directly, it does so indirectly by improving teaching quality and ensuring effective use of resources.⁴¹ Across eight countries a 1 standard deviation increase in an index of management capacity—based on the adoption of 20 management practices—is associated with a 0.23–0.43 standard deviation increase in student outcomes. But school management capacity tends to be lowest in the countries studied with the lowest income levels, and management capacity is substantially lower in schools than in manufacturing (figure 5).⁴² Ineffective school leadership means school principals who are not actively involved in helping teachers solve problems, do not provide instructional advice, and do not set goals that prioritize learning. School governance—particularly the decision-making autonomy schools have, along with the extent of oversight provided by parents and communities—provides the framework for seeking local solutions and being accountable for them. In many settings schools lack any meaningful autonomy, and community engagement fails to affect what happens in classrooms.⁴³

26. **Because these quality problems are concentrated among disadvantaged children, they amplify social inequalities.** In low-income countries, on average, stunting rates among children under 5 are almost three times higher in the poorest quintile than the richest.⁴⁴ Problems with teacher absenteeism, lack of inputs, and weak management are typically most severe in communities that serve the poorest students. Not only do spending patterns typically disadvantage marginalized communities, but resources are used less effectively there, exacerbating the problem. Public policy thus has the effect of widening social gaps, rather than narrowing them.

Figure 4: Teachers are often absent from school and from classrooms while at school

Percentage of teachers absent from school and from class on the day of an unannounced visit



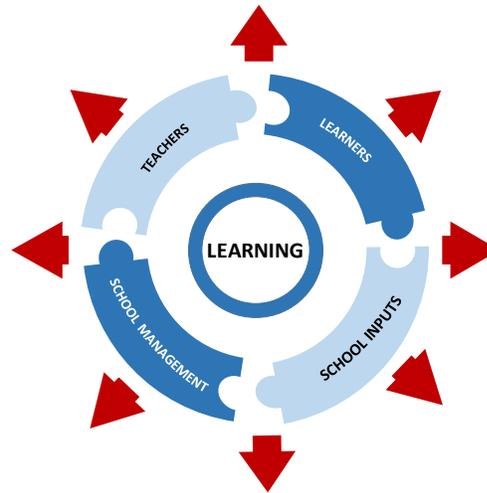
Source: Bold and others 2016.

Note: “Absence from class” combines absences from school with absences from class among teachers who are at school.

Dimension 3: Systemic causes of the learning crisis

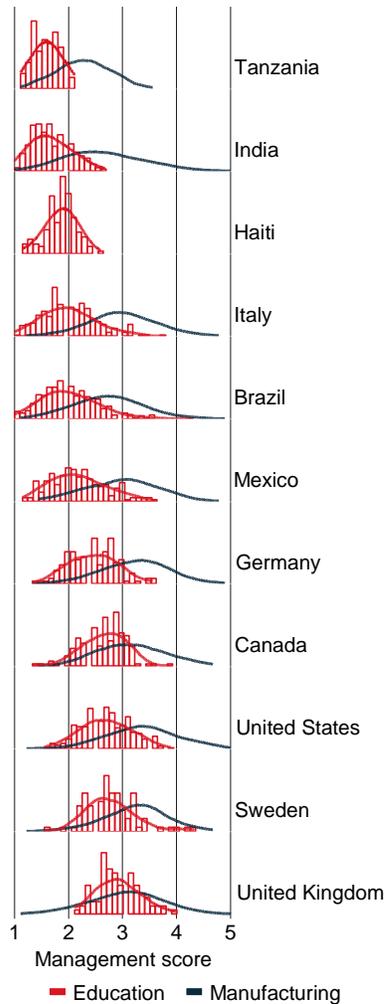
27. Viewed from a systems perspective, the low level of learning and skills should come as no **surprise**. Technical complexities and political forces constantly pull education systems out of alignment with learning (figure 6). Reorienting towards learning is hard.

Figure 6: Technical and political factors divert schools, teachers, and families from a focus on learning



Source: WDR 2018 team.

Figure 5: Management is generally worse in lower-income countries, and worse in schools than in manufacturing
School management capacity within and across selected countries: education and manufacturing



Source: Bloom and others 2015, Bloom and others 2014, Lemos and Scur 2016 with updates.

Note: Smoothed kernel density is shown as an overlay to the education data for each country. The indexes are constructed from 9 items. Data on manufacturing are not available for Haiti.

Technical challenges

28. **Complexity and limited management capacity make it hard to get all parts of an education system to work for learning.** First, the various parts of the system need to be aligned toward learning. But actors in the system have other goals. Promoting learning is only one of these—and not necessarily the most important. Sometimes these other goals can be harmful, such as when construction firms and bureaucrats collude to provide substandard school buildings for their financial gain. Other times these goals may be laudable, such as nurturing shared national values. But if system elements are aligned toward these other goals, they will sometimes be at cross-purposes with learning.

29. **Even when countries want to prioritize learning, they often lack metrics to do so.** Every system assesses student learning in some way, but many systems lack reliable, timely assessments needed to provide feedback on performance. Is a new teacher training program making teachers more effective? If the system lacks reliable information on the quality of teaching and the learning of primary students—comparable across time or classrooms—we may never know.

30. **To be truly aligned, parts of the education system also have to be coherent with one another.** Imagine that a country has set student learning as a top priority, and has in place reasonable learning metrics. It still needs to leap a major technical hurdle: ensuring that system elements mesh. If a country adopts a new curriculum that increases emphasis on active learning and creative thinking, just changing the curriculum will not change much. Teachers need to be trained so that they can use more active learning methods, and they need to care enough to make the change—because teaching to the new curriculum may be much more demanding than old rote learning methods. Even if teachers are on board with curriculum reform, students could weaken its effects if an unreformed examination system creates misaligned incentives. In the Republic of Korea, the high-stakes exam system for university entrance has weakened efforts to reorient secondary school learning. The curriculum has changed to build students’ creativity and socioemotional skills, but many parents still send their children to private “cram schools” for test preparation.⁴⁵

31. **The need for coherence makes it risky to borrow system elements from other countries.** Policymakers often scrutinize systems with better learning outcomes to identify

what they could borrow. The search for the secret behind Finland’s admirable record of learning with equity led to a swarm of visiting delegations in what the Finns have dubbed “PISA tourism.” Finland’s system gives considerable autonomy to its well-educated teachers, who can tailor their teaching to the needs of their students. But lower-performing systems that import Finland’s teacher autonomy are likely to be disappointed: if teachers are poorly educated, unmotivated, and loosely managed, then giving them even

more autonomy will likely make matters worse. South Africa discovered this in the 1990s and 2000s, when it adopted a curriculum approach that set goals but left implementation up to teachers.⁴⁶ The approach failed because it proved to be a poor fit for the capacity of teachers and the resources at their disposal.⁴⁷

32. **Successful systems combine alignment and coherence.** Alignment means that learning is the goal of the various components of the system. Coherence means that the components reinforce each other in achieving the goal. When systems achieve both, they are much more likely to promote student learning. Misalignment or incoherence leads to failure to achieve learning, though the system might achieve other goals.

Political challenges

33. **Political challenges compound technical ones. Many education actors have different interests, beyond learning.** Politicians act to preserve their positions in power, which may lead them to focus benefits on particular groups (geographic, ethnic, or economic). Bureaucrats may focus more on keeping politicians and teachers happy than promoting student learning, or may simply try to protect their own positions. Some private suppliers of education services—whether textbooks, construction, or schooling—pursue profit, which can lead them to advocate policy choices not in the interest of students. Teachers and other education professionals—even when motivated by a sense of mission—also fight to maintain secure employment and to protect their incomes. Upper- and middle-class urban families often press for investments in parts of the system that most benefit their children, even when this diverts funding from poorer communities that most need it. In many cases, families have exited a poorly functioning public system for private schools, which makes them less willing to work to improve public schools. And various actors, public and private, use education to promote particular ideologies. None of this is to say that education actors don't care about learning, but that—especially in poorly managed systems—competing interests may loom larger than their learning-aligned interests (table 1).

34. **Misalignments aren't random.** Given these competing interests, the choice of a particular policy is rarely determined by whether it improves learning. More often, the choice is made by the more powerful actors at the decision-making table. Agents are accountable to one another for different reasons, not just learning. Given these interests, it should come as no surprise that little learning often results.

35. **One problem is that activities to promote learning are difficult to manage.** Teaching and learning in the classroom involve significant discretion by teachers, as well as regular and repeated interactions between students and teachers.⁴⁸ These characteristics, coupled with a dearth of reliable information on learning, make managing learning more difficult than pursuing other goals.⁴⁹ For example, improvements in access can be monitored by looking at simple, easily collected enrollment data. Similarly, school construction, cash transfer, teacher hiring, and school grant programs intended to expand access are all highly visible, easily monitored investments.

36. **Potential beneficiaries of learning—students, parents, and employers—often face difficulties in organizing themselves or acquiring the information needed to push for better learning.** Parents are usually not organized to participate in debates at the system level, and they may lack knowledge of the potential gains from different policies to improve learning.⁵⁰ They may also worry about the potential ramifications on their children or themselves of opposing interests such as teachers, bureaucrats, and politicians. Students have even less power—except sometimes in higher education, where they can threaten demonstrations—and, may be unaware of how little they have learned until they start looking for work. Finally, the business community, even if it suffers from a shortage of skilled graduates to hire, often fails to advocate for quality education, instead lobbying for lower taxes and spending. By contrast to these potential beneficiaries of reform, potential losers tend to be more aware of what is at stake for them and, in many cases, better organized to act collectively.

37. **As a result, many systems are stuck in low-learning traps, characterized by low accountability and high inequality.** These traps bind together key stakeholders through informal contracts that prioritize other goals such as civil service employment, corporate profits, or reelection—perpetuating the low-

accountability equilibrium. In better-run systems, bureaucrats and teachers can devote much of their energy to improving outcomes for students. But in low-learning traps those same actors lack either the incentives or the support needed to focus on learning. Instead they are constantly pressured to deliver other services for more powerful players. As actors juggle multiple objectives, relying on each other in an environment of uncertainty and low social trust, it is often in the interest of each individual to maintain the status quo—even if society, and many of these individuals, would be better off if they could shift to a higher-quality equilibrium.

Table 1: Multiple interests govern the actions of education stakeholders

Stakeholders	Examples of:	
	Learning-aligned interests	Competing interests
Teachers	Student learning, professional ethic	Employment, job security, salary, private tuitions
Principals	Student learning, teacher performance	Employment and salary, good relations with staff, favoritism
Bureaucrats	Well-functioning schools	Employment, salary, rent-seeking
Politicians	Well-functioning schools	Electoral gains, rent-seeking, patronage
Parents and students	Student learning, employment of graduates	Family employment, family income, outdoing others
Judiciary	Meaningful right to education	Favoritism, rent-seeking
Employers	Skilled graduates	Low taxes, narrowly defined self-interest
Non-government schools (religious, NGO, for-profit)	Innovative, responsive schooling	Profit, religious mission, funding
Suppliers of education inputs (e.g., textbooks, IT, buildings)	High-quality, relevant inputs	Profit, influence
International donors	Student learning	Domestic strategic interests, taxpayer support, employment

Source: WDR 2018 team.

Reasons for hope

38. **Even in countries that seem stuck in low-learning traps, some teachers and schools manage to promote student learning.** These examples may not be sustainable, and they are not likely to spread system-wide without efforts to reorient the system toward learning. But systems willing to learn from these outliers can benefit. On a larger scale, some regions within countries are more successful in promoting learning, as are some countries at each income level. These examples show that higher-level system equilibriums exist. But is it possible for a whole system to escape the low-learning trap—moving to a better one?

39. **There are at least two reasons for optimism. First, as countries innovate to improve learning, they can draw on more systematic knowledge than ever before about what can work at the micro level—the level of learners, classrooms, and schools.** A number of interventions, innovations, and approaches have resulted in substantial increases in learning. These promising approaches come in many flavors—new pedagogical methods, ways to ensure that students and teachers are motivated, approaches to school management, technologies to enhance teaching learning—and may not pay off in all contexts. But the fact that it is possible to improve learning outcomes should provide hope. These interventions can

provide substantial improvements in learning: almost one or two grade-equivalents for some students.⁵¹ Though successful interventions cannot be imported wholesale into new contexts, countries can use them as starting points for their own innovations.

40. **Second, some countries have implemented reforms that have led to sustained system-wide improvements in learning.** Starting in the early 1950s as a war-torn society with very low literacy rates, the Republic of Korea by 1995 had achieved universal enrollment in high-quality education through secondary school—so that its young people performed at the highest levels on international learning assessments. Finland’s major education reform in the 1970s famously improved the equity of outcomes while also increasing quality, so that by the time of the first PISA in 2000, Finland topped the assessment. More recently, Chile, Peru, Poland, and the United Kingdom have made serious, sustained commitments to reforming the quality of their education systems. In all these countries, learning has improved over time—not always steadily, but enough to show that system-level reforms can pay off. Shanghai, China and Vietnam today show that it is possible to perform far better than income levels would predict, thanks to a sustained focus on learning with equity. Brazil and Indonesia have made considerable progress despite the challenges of reforming large, decentralized systems.

Three policy actions

41. **Learning outcomes will not change unless education systems take learning seriously and use learning as a guide and metric.** This implies three complementary strategies:

- **Assess learning:** Measure and track learning better, so systems can make it a serious goal
- **Make schools work for learners:** Use evidence to guide innovation and practice
- **Reform the system:** Tackle technical and political barriers to align actors toward learning

42. **These three strategies depend on one another.** Adopting a learning metric without any credible way to achieve learning goals will simply lead to frustration. School-level innovations without a learning metric could lead schools off course, and without the system-level support they could prove ephemeral. And system-level commitment to learning without school-level innovation, and without learning measures to guide the reforms, is unlikely to amount to more than aspirational rhetoric. But together, the three strategies can create change for the better.

43. **The potential payoff is huge.** Countries already devote considerable effort to educating their children and youth, supporting it with public and household spending. Education can claim up to a fifth of the overall government budget, and education personnel make up the largest share of government employees. Figuring out how to use these resources more effectively should be among government’s highest priorities, especially given the many returns to education. One overarching priority should be to end the hidden exclusion of low learning. This is not just the right thing to do; it is also the surest way to reap education’s full rewards for society as a whole.

Policy response 1: Assess learning

44. **“What gets measured gets managed.” “Just weighing the pig doesn’t make it fatter.”** There is some truth in both of these sayings. Lack of measurement makes it hard to know where things are, where they are going, and what actions are making any difference. Knowing these things can draw focus and stimulate action. But measurement that is too removed from action can lead nowhere. The challenge is striking a balance—finding the right measures, for the right purposes, and implementing them in a nuanced way within an appropriate accountability framework.

Using measurement to shine a light on learning

45. **The first step is to put in place good metrics for monitoring whether programs and policies are delivering learning.** Credible, reliable information can shape the incentives facing politicians. Most

notably, information on student learning and school performance—if presented in a way that makes it salient and acceptable—fosters healthier political engagement and better service delivery. Salient information helps parents, employers, and others understand the problems in the system and gives them the tools to lobby for change. Information also helps policymakers manage a complex system.

46. **Measuring learning can improve equity by revealing hidden exclusions.** As the first part of this paper emphasized, the learning crisis is not just a problem for the society and economy overall; it’s also a fundamental source of inequities and widening gaps in opportunity. But because reliable information on learning is so spotty in many education systems, especially in primary and lower secondary school, the way the system is failing disadvantaged children is a hidden exclusion.⁵² Unlike exclusion from school, a lack of learning is often invisible, making it impossible to inform families and communities of their right to quality education.

47. **These measures of learning will never be the only guide of educational progress, nor should they be.** Education systems should have ways of tracking progress toward any goal they set—not just learning. But learning metrics are an essential starting point for improvement in lagging systems.

There is too little measurement of learning, not too much

48. **The recommendation to start tackling the learning crisis with more and better measurement of learning may seem jarring.** Many education debates focus on overtesting or overemphasis on tests. In the United States two decades of high-stakes testing have led these concerns.⁵³ Teachers have been found to focus on test-specific skills instead of untested subjects, and schools have engaged in strategic behavior to ensure that only better-performing students are tested, such as assigning students to special education that excuses them from testing.⁵⁴ In the extreme, there have been convictions for systemic cheating at the level of a school district.⁵⁵

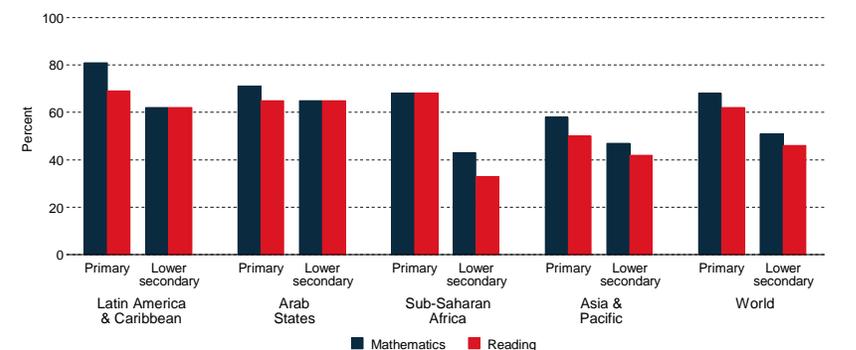
At the same time, media coverage of education in many low- and middle-income countries (and some high-income ones) is often focused on high-stakes national examinations that screen candidates for tertiary education—raising concerns about an overemphasis on testing.

49. **But in many systems, the problem is too little focus on learning.** Many countries lack information on even basic reading and math competencies. An assessment of capacity to monitor progress toward the Sustainable Development Goals found that of 121 countries studied, a third lack the data required to report on levels of reading and mathematics proficiency of children at the end of primary school.⁵⁶ Even more lack it for the end of lower secondary (see figure 7). Even when countries have these data, they are often from one-time assessments that don’t allow systematic tracking over time. In short, education systems are often flying blind—without even agreement on the destination.

A range of metrics with one ultimate goal

50. **Different learning metrics have different purposes, but each contributes to learning for all.** Teachers assess students in classrooms every day—formally or informally. But using metrics properly to improve learning system-wide requires a spectrum of types of assessment that, together, allow educators and policymakers to use the right combination of teaching approaches, programs, and policies.

Figure 7: Many countries lack information on learning outcomes
Percent of countries with data to monitor progress toward the SDG learning goals (end of primary, lower secondary)



Source: UNESCO 2016c.

Note: Regional groupings follow UNESCO definitions.

51. **Assessment by teachers in classrooms** helps guide instruction and tailor teaching to the needs of students. Knowing how students are doing allows teachers to adjust their teaching accordingly and to give students learning opportunities they can handle. Singapore has successfully used this approach—identifying lagging students in the first grade through screening tests, then giving them intensive support to bring them to grade level.⁵⁷

52. **National and subnational learning assessments** provide system-level insights that classroom assessments by teachers cannot. To guide an education system, policymakers need to understand whether students are learning, which population groups are lagging, and which factors are associated with better student achievement. Classroom-level assessment by teachers alone cannot deliver this type of reliable system-level information. Therefore, systems need assessments of representative samples of students across countries or provinces. These assessments can be an especially important part of tracking system-wide progress, because they are anchored in a system’s own expectations for itself.

53. **International assessments** also provide information that helps improve systems. Globally benchmarked student assessments like PISA, as well as regionally benchmarked ones like PASEC in Africa and LLECE in Latin America, provide an additional perspective on what students are learning. They allow comparisons across countries, providing a check on the information that emerges from national assessments. And international assessments can be powerful tools politically: because country leaders are concerned with national productivity and competitiveness, international benchmarking can raise awareness of how a country is falling short of its peers in building human capital.

54. **Other types of learning metrics** can be used to strengthen the quality and equity focus of assessment systems. Grassroots accountability movements—led by civil society organizations like ASER in India and UWEZO in East Africa—have deployed citizen-led assessments, recruiting volunteers to measure the foundational learning of young children in their communities. These organizations then use their learning data to advocate for education reform. Some multipurpose household surveys also collect learning data, enabling researchers to analyze how learning outcomes correlate with income and community variables. Because they are administered in people’s homes, not schools, they allow measurement of learning of out-of-school children, and they also serve as a check on the results of school-based assessments.

Measurement can be hard

55. **Why isn’t there more and better measurement of learning?** As with system barriers to learning, barriers to better measurement are both technical and political. From a technical perspective, conducting good assessments is not easy. At the classroom level, teachers lack the training to assess learning effectively, especially when assessments try to capture higher-order skills—through project-based assessment, say—rather than rote learning. And at the system level, education ministries lack the capacity to design valid assessments and implement them in a sample of schools. But political factors also intrude. To paraphrase an old saying, policymakers may decide that it is better to avoid testing and be assumed ineffective than to test students and remove all doubt. And even when they do participate in assessments, governments sometimes decline to release learning results to the public, as happened with the 1995 TIMSS in Mexico.⁵⁸ Finally, if assessments are poorly designed or inappropriately made into high-stakes tests, administrators or educators may have an incentive to cheat on them, making the assessment results worthless as a guide to policy.

Measurement doesn’t need to detract from broader education objectives

56. **A stronger focus on learning does not mean that other education outcomes don’t matter; in fact, it will often support those other outcomes.** Formal education and other opportunities for learning have many goals, only some of which are captured by the usual assessments of literacy, numeracy, and reasoning. Other goals include helping learners develop higher-order cognitive skills, socioemotional skills, and citizenship behaviors. But increasing the focus on measurable learning—and on the educational quality that drives it—is more likely to “crowd in” than crowd out these other goals. Conditions that allow children to spend two or three years in school without learning to read a single word, or to reach the end of primary

without learning to do two-digit subtraction, are not conducive to reaching the higher goals of education. If foundational learning isn't happening—because students cannot focus due to deprivation, teachers lack the pedagogical skills and motivation to engage students, or poor management prevents materials from reaching the classroom—then it is highly unlikely that students are developing higher-order thinking or socioemotional skills. It is more likely these conditions undermine the quest for higher goals—and that conversely, improving the learning focus would accelerate progress toward those goals as well. Shining a light on learning by using measurement in a nuanced way is therefore a crucial step toward ensuring that schooling builds human capital, in all its dimensions.

Policy response 2: Make schools work for learners

57. **Measurement of learning shortfalls doesn't provide clear guidance on how to remedy them—but fortunately, there is now a lot of experience on ways to improve outcomes at the student, classroom, and school level that can guide practice.** Cognitive neuroscience has evolved dramatically in the past two decades, providing insights on how children learn.⁵⁹ This work has shown the crucial nature of the first several years for child brain development.⁶⁰ At the same time, schools and systems around the world have innovated in many ways: by deploying novel approaches to pedagogy, using new technologies to enhance teaching and learning in classrooms, or increasing the accountability, and sometimes autonomy, of various actors in the system. And the number of systematic evaluations of whether these interventions improved learning has increased 10-fold, from just 32 in 2000 to 352 in 2016.⁶¹

58. **Many interventions have succeeded in improving learning outcomes.** The learning gains from effective interventions translate into the equivalent of additional years of schooling, higher earnings, and lower poverty. For example, programs to improve pedagogy have an impact greater than half a year of business-as-usual schooling and an 8 percent increase in the present discounted value of lifetime earnings.⁶² So while tackling the learning crisis is hard, the fact that there are interventions that improve learning suggests ways forward.

59. **This evidence highlights viable policies that make schools work better for learners.** There are no global solutions in education, and it is therefore not possible us to identify what works in all contexts. But the WDR's careful review identifies three sets of promising entry points for policy: prepared learners, effective teaching, and school-level inputs and management that actually affect the teaching and learning process. Each of these priority areas is founded on evidence from multiple contexts showing that it can make a real difference for learning—evidence not only on *what* has worked, but also on *why*, drawing on models of human behavior to explain the results in different contexts.⁶³ The key is to use these as starting points for local innovation, monitoring their effects on learning measures to evaluate what works in a given school setting.

Preparing children and youth for learning

60. **Getting children ready and motivated to learn is a first step; without it, other policies and programs will have minimal effect.** There are three key entry points to addressing learner preparation.

- Set children on high-development trajectories through *early child nutrition, stimulation, and care*. In Jamaica, a program to improving cognitive and socioemotional development led to lower crime rates, better mental health, and earnings that were 25 percent higher 20 years later.⁶⁴ Working through parents is essential for these early-care programs to succeed, and so is working across ministries.
- *Lower school costs* to get children into school, but then use other tools to boost motivation and effort—because cost-reducing interventions don't usually lead to learning on their own. Fee reductions and conditional cash transfers have been very effective at getting children to school, even in fragile contexts, but they have required add-ons (such as framing to induce more effort in Cambodia) to affect learning.⁶⁵

- To make up for the fact that so many youth leave basic education lacking skills, provide *remedial education* before further education and training.⁶⁶ For example, the National Autonomous University of Mexico (UNAM) and the University of San Sebastián (USS) in Chile have both developed structured programs to assist students in their transition to higher education.⁶⁷

Making teaching more effective

61. **Effective teaching depends on teacher skills and motivation.** Teacher salaries are the largest single budget item in education systems, taking up an average three-quarters of the budget at the primary level in developing countries. Yet many systems struggle to attract strong candidates into teaching and to provide a solid foundation of subject or pedagogical knowledge before they start teaching. As a result, new teachers often find themselves in classrooms with little mastery of the content they are to teach.⁶⁸ Once teachers are in place, the professional development they receive is often inconsistent and overly theoretical. In some countries, the cost of this training is enormous, reaching \$2.5 billion a year in the United States.⁶⁹ Moreover, education systems often have few effective mechanisms in place to mentor, support, and motivate teachers—even though teachers’ skills do nothing for learning unless teachers choose to apply them in the classroom.⁷⁰ Fortunately, teacher skills and motivation can be strengthened, with three main promising principles emerging:

- To be effective, design *teacher training* to be individually targeted and repeated, with follow-up coaching—often around a specific pedagogical technique.
- To keep learners from falling behind to the point where they cannot catch up, *target teaching to the level of the student*. Effective strategies to target teaching to the level of the student include using community teachers to provide remedial lessons to the lowest performers as was done in Ghana,⁷¹ reorganizing classes by ability as proved effective in India and Kenya,⁷² or using technology to adapt lessons to individual student needs which produced large impacts on learning in Delhi, India.⁷³
- Use pecuniary and nonpecuniary incentives to improve *teacher motivation*, ensuring that the incentivized actions are within teachers’ capacity. Linking teacher pay or career progression to student has been effective at improving learning outcomes in settings as diverse as Brazil, India, Israel, Kenya, and Peru—although design details matter.⁷⁴

Focusing everything else—such as inputs, management, or governance—on improving teaching and learning

62. **School inputs, management, and governance need to affect the learner-teacher relationship—but often do not.** Many debates on improving education outcomes focus on increasing the inputs available in classrooms or the infrastructure of schools. But too often the question of why these might actually improve learning is overlooked. The evidence on successful use of inputs and school leadership and management suggests three main principles:

- Provide additional inputs, including new technologies, in ways that *complement rather than substitute for teachers*.⁷⁵ When a computer-assisted learning program in India was implemented as an add-on to regular lessons, it increased learning, especially for initially poorer performing students. When it was instead of regular lessons, it *decreased* learning.⁷⁶
- Ensure that *new information and communication technology* (ICT) is implementable in current systems. Many education technology interventions fail because they are ill-adapted to the setting they are being deployed in—because complementary infrastructure or the knowledge on how to use the technology effectively are often missing—as experience in Brazil and Haiti showed.⁷⁷ But when implemented well (either by government itself or in close partnership with the private sector), ICT can be useful on various fronts, including assessing learning, improving teacher skills, and managing service delivery better.⁷⁸

- Improve the *management capacity* of school leaders, and focus school management and governance reforms on improving teacher-learner interaction. In countries ranging from Brazil and India to Sweden, the United Kingdom and the United States, school management capacity is significantly and robustly related to student performance, even after controlling for student and school characteristics.⁷⁹ Moreover, experiments show that improving school management can have a large impact on student learning.⁸⁰ Involving parents and communities in school governance—supported by metrics that allow them to track investments and outcomes—can complement efforts to build management capacity.

63. **The key is to use robust evidence of effectiveness to guide innovations in the local context.** In some cases, evidence comes from experimentation within the public system. In others, it may come from new approaches in NGO or other private schools, which often have more flexibility to innovate.

Policy response 3: Reform the system

64. **But deploying effective programs at the school level is not enough.** The concept of “scaling up” in education implies taking interventions that have been shown to be effective at a pilot or experimental scale and replicating them across hundreds or thousands of schools. This approach often fails because the key actors are human beings, operating with human aspirations and limitations in a politically charged arena. When the Cambodian government tried to scale up early child development centers and preschools—programs that had worked in some parts of the country when implemented by nongovernmental organizations (NGOs)—low demand from parents and low-quality services led to no impacts on child development, and even slowed it for some.⁸¹ When the Kenyan government tried to lower student-teacher ratios by hiring contract teachers—an intervention that had improved student outcomes when implemented by an NGO—the results were negligible because of both implementation constraints and political-economy factors.⁸² When the Indonesian government tried to increase teacher capacity by nearly doubling the salaries of certified teachers, political pressures watered down the certification process and left only the pay increase in place. The result: much larger budget outlays on salaries, but no increase in teacher skills or student learning.⁸³

65. **Better interventions at the school level will improve learning only if countries take on the stubborn system-level technical and political barriers to change.** Technical barriers include the complexity of the system, the large number of actors, the interdependence of reforms, and education systems’ slowness to change. Political barriers include the competing interests of different players and the difficulty of moving out of a low-quality equilibrium, especially in low-trust environments where risks predominate. All of these pull actors away from learning, as discussed above. Systems that surmount these barriers and align actors toward learning can achieve remarkable learning outcomes. Shanghai, China topped the 2012 PISA rankings, partly thanks to policies that ensured every classroom had a prepared, supported, motivated teacher.⁸⁴

66. **To shift the system toward learning, technically and politically, reformers can use three sets of tools:**

- *Information and metrics.* Better information and metrics can promote learning in two ways: by catalyzing reforms and by serving as an indicator of whether reforms are working to improve learning with equity. Thus, they can improve both the political and technical alignment of the system.
- *Coalitions and incentives.* Good information will have a payoff only if there is enough support for prioritizing learning. Politics is often the problem, and politics must be part of the solution. This requires forming coalitions to advocate for broadly based learning and skills and rebalance the political incentives.
- *Innovation and agility.* Schools and societies have achieved high levels of equitable learning in a variety of ways, and figuring out what approaches will work in a given context requires innovation

and adaptation. This means using evidence to identify where to start, then using metrics to iterate with feedback loops.

Information and metrics

67. **Better information and measurement—starting with learning metrics—are critical for creating political space for innovation, and using that space to achieve continuous improvement.** As emphasized, the absence of good information on learning prevents stakeholders from judging system performance, designing appropriate policies, and holding politicians and bureaucrats to account. So improving learning metrics is crucial for drawing attention to problems and building the will for action. In Germany, the “PISA shock” created by mediocre scores and large achievement gaps on the first PISA assessment in 2000 led to reforms, resulting in a turnaround over the ensuing decade that improved both equity and average learning levels.

68. **This agenda needs to go beyond just measuring learning to tracking its determinants as well.** Understanding these determinants can lead to grappling with the deeper causes, if there is a system-wide commitment to improving learning. Take the issue of learner preparedness. When indicators reveal that poorer children already lag far behind by the time they start primary school, this finding can build political will not only to expand preschool in low-income areas, but also to combat stunting and educate parents about early stimulation of children. When indicators show that many teachers lack a strong command of what their students are meant to learn, this can spark efforts to improve the quality of teacher education—especially if continuous monitoring shows that just ramping up current training doesn’t improve teaching.⁸⁵

69. **Of course, information and metrics can also be misleading, irrelevant, or politically unsustainable, so they need to be designed and used wisely.** Metrics may fail to capture important dimensions of the outcomes the education system is trying to promote. For example, the Millennium Development Goal of universal primary education by 2015 embodied a crucial goal—equitable access—but it did not represent universal acquisition of foundational literacy and numeracy, let alone other life skills. (The SDGs have filled this gap by including several measures of learning and skills as indicators.) Another risk is if potential beneficiaries can game the indicators. Thus, systems will need different measures for different purposes.⁸⁶ Even if technically sound, metrics may prove politically unsustainable if they highlight too many problems and do not provide any reason for hope. One way to address this problem is to focus not on levels of learning, which may be very low, but on progress over time.

Coalitions and incentives

70. **Mobilizing everyone who has a stake in learning has been an important strategy in efforts to improve learning.** Many countries have used wide-ranging consultations to bring in all interest groups to build support for proposed changes in education policy. Malaysia used a “lab” model to bring together coalitions of stakeholders and involve them in all stages of reform, from design to implementation.⁸⁷ Mobilizing citizens through regular information and communication campaigns can also be an important strategy. In Peru reformers in the government used information on poor learning outcomes and performance of the education system to mobilize public support for reforms that strengthen teacher accountability. That information also catalyzed action by the business community, which funded a campaign highlighting the importance of quality education for economic growth. In parts of Peru, parents used this entry point to protest teacher strikes that had disrupted schooling.⁸⁸ Another tool for building coalitions is to bundle reforms, so that each actor achieves a top priority of theirs. For example, a commitment to modernize vocational training—a reform that could help employers immediately—could buy their support for broader education reforms.

71. **Where feasible, a negotiated and gradual approach to reform can provide a more promising alternative to direct confrontation.** Where coalitions can be built among system actors that foster collaboration and trust around shared goals, the chances of successful reform are likely to be higher. In Chile successive negotiations between the government and teachers’ union built broad support for a series of reforms that adjusted the working conditions of teachers, while at the same time linking pay and career

development more closely to performance.⁸⁹ One approach that has been used by several countries has been to compensate actors who might lose out from reforms. In other cases, dual-track reforms have been introduced to phase in changes in a way that protects incumbent actors from their effects; in Peru and Washington, D.C. pay-for-performance schemes were initially voluntary.⁹⁰

72. **Building strong partnerships between schools and their communities is also important for sustaining reforms.** In cases where political and bureaucratic incentives for reform are weak, action at the local level can act as a substitute. In South Africa, the political and economic context constrains efforts to improve education performance at the national level. Yet progress was made in improving outcomes at some local levels through strong partnerships between parents and schools.⁹¹ Even where broader incentives exist to improve learning, community engagement at the local level is important and can complement national or subnational change efforts.⁹²

Innovation and agility

73. **To develop effective learning approaches that fit their contexts, education systems need to encourage innovation and adaptation.** In many education systems, schools and other education institutions regularly adapt to changing circumstances. Through these adaptations, innovative solutions to education challenges often emerge. Exploring well-performing parts of any education system can reveal technically and politically feasible approaches to the problems systems face in improving learning. In Misiones Province in Argentina, high student dropout rates were widespread, but some schools seemed to buck the trend. Looking more closely at these “positive deviants” revealed very different relationships between teachers and parents. When other schools adopted the more constructive approach to parent-teacher relations, dropouts fell significantly.⁹³ As Burundi recovered from civil war, it used an adaptive approach to find the right way to get textbooks to schools, reducing delivery times from over a year to sixty days—and then replicated that approach in other areas.⁹⁴

74. **Incentives determine whether systems innovate and adopt emerging solutions at scale.** Systems that are closed, limit the autonomy of teachers and schools, and judge performance by the extent of compliance with rules over resource use often provide little room for innovation. By contrast, more open systems that have a greater focus on overall outcomes and reward progress in raising outcomes are more likely to see greater innovation and diffusion of new approaches across the education system.⁹⁵ Given that financing can provide a major incentive, financing modalities that focus more on results than on inputs can support innovation, by allowing recipients greater flexibility to improve outcomes.

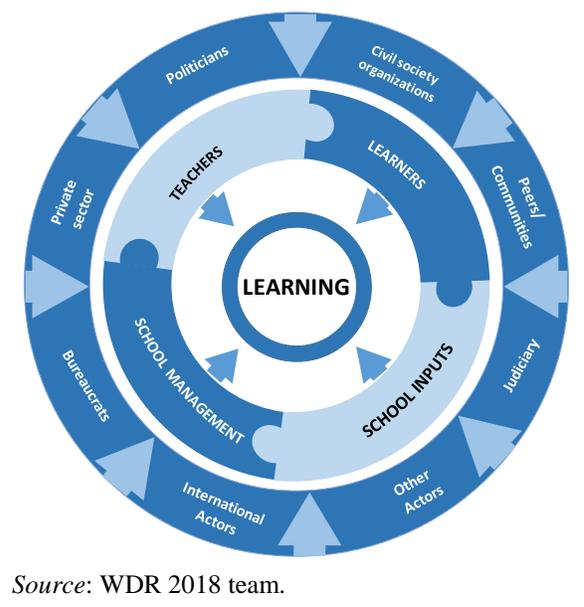
75. **To make a difference at system level, such innovations need to be packaged with good metrics and with system-level coalitions for learning.** Without metrics and coalitions for learning, any improvements from innovation are likely to prove short-lived or limited to local areas. But with such support, a virtuous cycle becomes possible, as systems follow these steps:

- Set learning as a clearly articulated goal and *measure* it.
- Build a *coalition* for learning that gives the political space for innovation and experimentation.
- *Innovate* and test approaches that seem most promising for the given context, drawing inspiration from the evidence base and focusing on areas that promise the biggest returns from improvements on current practice.
- Use the measure of *learning*, as well as the other metrics of delivery, as a gauge of whether the approach is working.
- *Build on what works* and scale back what doesn't, to deliver short-term results that strengthen the long-term resolve of the coalition for learning.
- *Repeat.*

76. **The payoff** to doing what needs to be done is a system in which the elements are coherent with each other, and everything aligns with learning (figure 8). This alignment should cover all the major actors that affect learning, including the private, religious, and other non-government education providers that are a growing segment of the education system in many countries.

77. **Increased financing can support this learning-for-all equilibrium, if the various key actors behave in ways that show learning matters to them.** This is a big “if”, given that higher levels of public spending are not associated statistically with higher completion or even enrolment rates in countries with weak governance.⁹⁶ And there is little correlation between spending and learning after accounting for national income. It is easy to see why this is, given the many ways that financing can leak out—whether because money never reaches the school, or because it pays for inputs that don’t affect the teaching-learning relationship, or because the system doesn’t prioritize learning for disadvantaged children and youth. More financing for business as usual will just lead to the usual outcomes. But where countries seriously tackle the barriers to learning for all, spending on education is a critical investment for development. More children staying in school longer will undoubtedly require more public financing for education, especially in those countries that are currently investing little in education. An injection of financing—either from domestic or international sources—can help countries escape the low-learning trap, if they are willing to take the necessary steps laid out here.

Figure 8: Coherence and alignment towards learning



More financing for business as usual will just lead to the usual outcomes. But where countries seriously tackle the barriers to learning for all, spending on education is a critical investment for development. More children staying in school longer will undoubtedly require more public financing for education, especially in those countries that are currently investing little in education. An injection of financing—either from domestic or international sources—can help countries escape the low-learning trap, if they are willing to take the necessary steps laid out here.

Call to action

78. **By showing that learning really matters to them, countries can realize education’s full promise as a driver of poverty elimination and shared prosperity.** Beyond being a basic human right, education—done right—improves social outcomes in many spheres of life. For individuals and families, education boosts human capital, improves economic opportunities, promotes health, and expands the ability to make effective choices. For societies, education expands economic opportunities, promotes social mobility, and makes institutions function more effectively. In measuring these benefits, research has only recently focused on the distinction between schooling and learning. But the evidence confirms the intuition that these benefits often depend on the skills that students acquire, not just the number of years in the classroom. Economies with higher skills grow faster than those with schooling but mediocre skills; higher literacy predicts better financial knowledge and health of individuals, beyond the effects of schooling; and poor children are more likely to rise in the income distribution when they grow up in communities with better learning outcomes.

79. **Taking learning seriously will not be easy.** It’s hard enough to work through the technical challenges of figuring out what will promote learning at the level of the student and school in any context, let alone to tackle the political and technical challenges of working at scale. Many countries struggling with the learning crisis may be tempted to continue with business as usual. After all, they may reason, development will eventually improve learning outcomes: as households escape poverty and schools take advantage of better facilities, more materials, and better-trained teachers, better learning outcomes should follow.

80. **Waiting out the learning crisis is not an option.** Even though income and learning are somewhat correlated at lower levels of development, higher incomes do not invariably lead to better learning outcomes. And to the extent that development does bring better learning and skills, it is partly because development has been accompanied by a willingness to tackle the political impasses and governance challenges that hamper learning—so those challenges ultimately aren't avoidable. Furthermore, there's no need to wait for learning. At every level of income, there are countries that not only score better on international assessments than others, but also show from the quality of education and their policy-making that they are committed to learning.

81. **Ending the learning crisis—so schools can build the human capital that drives sustained growth and development—is possible with the right policies.** Whether the future inspires excitement or trepidation, the best response is to adopt policies focused on learning like those laid out here. Foundational learning skills throughout a population allow a country to take advantage of new opportunities when they arise, whether because of technology or integration—and by the same token, they make the country more resilient. Experience has shown that this vision of a learning society is attainable—it just requires commitment.

Questions for discussion

82. **The policy agenda laid out in the WDR 2018 suggests four questions for discussion by the Governors:**

Question #1: Are you convinced that in many countries a learning crisis is undermining the accumulation of human capital? If so, what dimensions of the learning challenge resonate the most, based on your own experience?

- *The crisis itself:* Low levels of learning and skills, high inequality in learning outcomes, the slow improvement over time
- *Direct causes of low learning,* such as children who are unprepared to learn because of poverty or other dimensions of exclusion, teachers who lack skills or motivation, or inputs that never make it to the classroom
- *Deeper system-level causes,* such as political factors that worsen governance and undermine institutions, resulting in a lack of alignment with learning

Question #2: When the education ministry makes its annual budget request, what should it be based on? Would better learning metrics (used wisely) help make the case for investing in education—and if metrics aren't enough, what else would bolster the case?

Question #3: What can the finance ministry and President/Prime Minister do to build political support and align incentives for a focus on learning?

Question #4: What should the World Bank do differently from what it is doing now?

- To mobilize *finance* to tackle immediate and systemic causes of learning deficit?
- To *partner* with governments, the private sector, civil society, and other development institutions to promote learning?
- To support *fragile and conflict-affected* countries in promoting schooling with learning?

Annex 1

Making education work: What national governments and the World Bank can do

83. **The agenda laid out in the WDR requires that countries place learning for all at the center of their efforts in education—and that they support this focus with concomitant investments and reforms in other sectors as well.** This kind of realignment will require efforts by many actors, from policymakers and educators to families to employers. Given the audience at the Development Committee, this section lays out what national governments and the World Bank will need to do to support the learning agenda.

The first step: Acknowledging the crisis

84. **Countries that are featured in the WDR should be congratulated for shining a light on the problem—and for pointing the way toward solutions.** It is tempting to see some of the examples in the report as “naming and shaming” certain countries, but the truth is the opposite. Many of the countries featured in the report have taken the crucial first step: doing careful assessment of student learning. Only by doing that have they been able to shine a light on low levels, high inequality, and slow progress of learning. Many of these same countries have encouraged careful research to identify causes of these patterns. And when they have implemented programs to improve education, many countries have evaluated their programs. Such evaluations are crucial to continuous improvement of education, but any serious evaluation comes with risks because its findings are unpredictable.

85. **The education sector also deserves credit for taking on the issues of spending effectiveness, which are hardly unique to education.** The problems identified in the WDR—too little use of evidence, and too little attention to how systemic problems undermine service delivery—undermine outcomes in other sectors as well. In many cases, the education sector has taken a lead in identifying them. One indication of this is the ramp-up in rigorous impact evaluations of program effectiveness in the developing world over the past ten to fifteen years: the education sector has accounted for the largest share of those evaluations, often by leading researchers.

What can national governments do to promote this agenda?

86. **This WDR provides an agenda for education ministries in each of the three areas of action:**

- **Assessing learning:** Ministries need to put in place credible, system-wide assessments of learning—regional, national, international—that allow them to spotlight problems and benchmark progress. At the same time, they need to build the capacity of teachers and schools to do their own assessments—“assessments *for* learning”, as they have been called.
- **Acting to make schools work for learners:** Ministries can make much better use of knowledge that exists about how to promote learning, drawing on the many areas identified above where there is a wide gap between current practice and promising interventions.
- **Aligning actors to make the system work for learning:** Education ministries have the primary responsibility for building *technical alignment* between the many parts of the education system, such as curriculum, teacher education, learning assessment, and teacher evaluation. But they can also help improve political alignment, by encouraging all the key players, including those elsewhere in government and in civil society, to focus on equitable learning as the goal of education.

87. **But education ministries will not be able to do promote this agenda alone. They will need strong oversight and support from finance ministries.**

- **Oversight and accountability:** In some cases, the Finance Ministry will need to encourage the Education Ministry to sharpen its focus on learning, by asking incisive questions as they allocate budgets: What do we know about the learning achievement of the most disadvantaged children and youth? What is the evidence that school leaders are using the most promising techniques to promote learning? Are the key components of the education system coherent and aligned toward

learning? What skills are paying off in labor markets, and are schools building those skills? Ensuring there are key metrics to monitor the effectiveness of spending—which means tracking student learning, but also the intermediate steps that affect it—will be an important foundation for this relationship.

- **Financing:** Even the most learning-oriented education ministries need strong support, including adequate financing, to make learning for all happen. Finance Ministries play a central role here, beyond providing oversight and encouraging a focus on outcomes. Where education ministries (and other related ministries) show commitment to promoting learning for all, finance ministries need to devote the budgets necessary to support those efforts. The many returns to education—pecuniary and non-pecuniary, for individuals and societies—justify increased investment in education in many settings, even given the competing development priorities, when those investments can be used effectively.

88. **This agenda laid out in this Report also requires leadership from the president or prime minister.** As the WDR emphasizes, the broader system in which schools and learning are embedded extends far beyond the education ministry and its budgetary oversight mechanisms. Achieving learning for all requires top-level leadership:

- **Setting learning for all as a clear goal:** The president or PM needs to build consensus around the idea that the major goal of the education system is to build learning and skills. This sounds uncontroversial, but many decisions are taken as if it were not the case. To build consensus, the president or PM needs to acknowledge where the country is falling short in building learning and skills—and at the same time, to celebrate the regions or schools that stand out in achieving learning for all.
- **Convening power and political cover:** Many of the actions to promote learning require action beyond the education sector: for example, critical early-years investments that determine children’s readiness to learn in primary school are the responsibility of the health and social protection sectors. The president or PM needs to ensure that different ministries work together toward the learning goal. She also should be willing to provide political cover for ministries when they need to take difficult decisions to improve learning with equity, for example by shifting budget from one area to another.

How can the World Bank help?

89. **The Bank is already well on its way to implementing this learning agenda. This is no accident: The World Development Report 2018 grows out of the Bank’s operational experience and analytical work, as well as those of its partners.** It focuses on the learning crisis because once Bank staff started assessing student learning during their operational engagement with client countries, they were often startled by what they found. The Bank’s current education sector strategy, *Learning for All*, made tackling this challenge central to its work in the sector. The importance of assessing learning arose because too often Bank staff, like their government counterparts, have lacked reliable, actionable data on learning to guide interventions. The solutions proposed here—programs to support students, families, teachers, and schools—draw heavily from innovative approaches that the Bank has helped governments explore and evaluate. And when the WDR describes challenges of making learning happen system-wide, it is because Bank staff have confronted those barriers as they work with governments. Here too, the proposed solutions draw on the successful experience of countries the Bank has worked with.

90. **But there is still more that can be done. In the coming months, the Education Global Practice and other parts of the World Bank Group will build on the WDR to develop further operational implications.** Regional companion studies to the WDR are exploring in more detail the parts of the WDR agenda that most resonate in their regions, with deep dives into issues such as fragility and conflict, displaced populations, and higher education. Together with the WDR, these will inform the operationalization agenda; the table below gives some examples of what this agenda might include.

Priority for action	What the WBG is already doing (examples)	What the WBG can do to deepen these efforts (examples)
Assess learning to make it a serious goal	<p><i>Capacity-building and support:</i> Helping countries to build comprehensive student assessment systems and generate robust data on learning and its determinants</p> <p><i>Operations and research:</i> Incorporating student learning measures in analytical work and indicators of operational progress</p>	<p><i>New learning metrics:</i> Develop and deploy new metrics (e.g., measures of socioemotional skills, or measures that work better in low-skill settings)</p> <p><i>Summary indicators:</i> Develop salient summary indicators of learning and human capital, to inform debates and track progress (e.g., simple, easily understandable measures like Learning-Adjusted Years of Schooling proposed in the WDR 2018)</p> <p><i>Link between assessment and financing:</i> Ensure that good learning metrics are in place (or at least in development) before ramping up financial support for education</p>
Act on evidence to make schools work for learners	<p><i>Evidence and analysis:</i> Carrying out rigorous evaluations and research on many education interventions (programs and policies)</p> <p><i>Operations:</i> Sharing this evidence with countries and helping them experiment with context-specific innovations to promote learning</p>	<p><i>Evidence in new settings:</i> Expand the evidence base on what works to promote learning in under-researched, high-priority settings (e.g., fragile contexts, refugees)</p> <p><i>Rapid feedback loops:</i> Be more agile in assessing how projects are affecting outcomes, by leveraging administrative data systems and building mechanisms allowing them to inform action</p>
Align actors to make the whole system work for learning	<p><i>System analysis:</i> Using a suite of tools (e.g., SABER) to analyze the key elements of an education system</p> <p><i>Operations:</i> Supporting governments with analysis and financing as they build all elements of education, from early years through tertiary and lifelong learning</p> <p><i>Financing instruments:</i> Using results-based financing to focus attention on outcomes</p>	<p><i>Expanded system analysis:</i> Strengthen and integrate the suite of tools, so that governments can track policies and processes all along the results chain from budget allocation to student outcomes (to promote technical coherence and alignment toward learning)</p> <p><i>Operational use of political economy analysis:</i> Use political economy analysis more systematically in strategic planning, as well as in the design of operations, especially in countries stuck in low-learning traps (to promote political alignment toward learning)</p> <p><i>Financing instruments to promote flexibility:</i> Continue to increase use of results-based financing, with a sharper focus on learning and its drivers; ensure that authorities can use flexibility to align key actors and adapt programs continuously</p> <p><i>Deeper cross-sectoral collaboration:</i> Work closely with the Governance GP to operationalize the 2017 and 2018 WDRs together in education; take advantage of public-sector reforms to improve system functioning in education</p>

References

- Abadzi, Helen. 2009. "Instructional Time Loss in Developing Countries: Concepts, Measurement, and Implications." *World Bank Research Observer* 24 2: 267-90.
- Adelman, M, M Blimpo, DK Evans, A Simbou, and N Yarrow. 2015. "Can Information Technology."
- Al-Samarrai, Samer. 2016. "Assessing Basic Education Service Delivery in the Philippines : Public Education Expenditure Tracking and Quantitative Service Delivery Study." *Washington, DC: World Bank Group.* .
- Alderman, Harold, Peter F Orazem, and Elizabeth M Paterno. 2001. "School Quality, School Cost, and the Public/Private School Choices of Low-Income Households in Pakistan." *Journal of Human Resources* 36(Spring): 304-26.
- Andrabi, Tahir, Jishnu Das, and Asim Ijaz Khwaja. 2008. "A Dime a Day: The Possibilities and Limits of Private Schooling in Pakistan." *Comparative Education Review* 52(3): 329-55.
- Andrews, Matt, Lant Pritchett, and Michael Woolcock. 2013. "Escaping Capability Traps through Problem Driven Iterative Adaptation (Pdia)." *World Development* 51: 234-44.
- . 2017. *Building State Capability: Evidence, Analysis, Action.* Oxford, UK: Oxford University Press.
- ASER-Pakistan. 2015a. "Annual Status of Education Report: Aser Pakistan 2015 National (Rural)." Lahore, Pakistan: South Asian Forum for Education Development.
- . 2015b. "Annual Status of Education Report: Aser Pakistan 2015 National (Urban)." Lahore, Pakistan: South Asian Forum for Education Development.
- ASER. 2017. "Annual Status of Education Report (Rural) 2016." New Delhi, India: ASER Center.
- Baird, Sarah, Francisco HG Ferreira, Berk Özler, and Michael Woolcock. 2014. "Conditional, Unconditional and Everything in Between: A Systematic Review of the Effects of Cash Transfer Programmes on Schooling Outcomes." *Journal of Development Effectiveness* 6(1): 1-43.
- Banerjee, Abhijit, Rukmini Banerji, James Berry, Esther Duflo, Harini Kannan, Shobhini Mukerji, Marc Shotland, and Michael Walton. 2016. "Mainstreaming an Effective Intervention: Evidence Form Randomized Evaluations of "Teaching at the Right Level" in India."
- Banerjee, Abhijit, Suraj Jacob, Michael Kremer, Jenny Lanjouw, and Peter Lanjouw. 2000. "Promoting School Participation in Rural Rajasthan: Results from Some Prospective Trials." *Unpublished manuscript, Massachusetts Institute of Technology.*
- Banerjee, Abhijit V., Shawn Cole, Esther Duflo, and Leigh Linden. 2007. "Remedying Education: Evidence from Two Randomized Experiments in India." *The Quarterly Journal of Economics* 122(3): 1235-64.
- Barrera-Osorio, Felipe, and Deon Filmer. 2016. "Incentivizing Schooling for Learning: Evidence on the Impact of Alternative Targeting Approaches." *Journal of Human Resources* 51(2): 461-99.
- Barro, Robert J, and Jong Wha Lee. 2013. "A New Data Set of Educational Attainment in the World, 1950–2010." *Journal of development economics* 104: 184-98.
- Birnbaum, Michael. 2012. "D.C. Schools Unveil Teacher-Pay Bonus Plan." *The Washington Post.* 9/12/2010. <http://www.washingtonpost.com/wp-dyn/content/article/2010/09/10/AR20100910006604.html>.
- Black, Maureen M, Susan P Walker, Lia CH Fernald, Christopher T Andersen, Ann M DiGirolamo, Chunling Lu, Dana C McCoy, Günther Fink, Yusra R Shawar, and Jeremy Shiffman. 2016. "Early Childhood Development Coming of Age: Science through the Life Course." *The Lancet.*
- Bloom, Nicholas, Renata Lemos, Raffaella Sadun, Daniela Scur, and John Reenen. 2014. "Jeea-Fbbva Lecture 2013: The New Empirical Economics of Management." *Journal of the European Economic Association* 12(4): 835-76.
- Bloom, Nicholas, Renata Lemos, Raffaella Sadun, and John Van Reenen. 2015. "Does Management Matter in Schools?" *The Economic Journal* 125(584): 647-74.
- Bold, T., D. Filmer, G. Martin, E. Molina, B. Stacy, C. Rockmore, J. Svensson, and W. Wane. 2016. "Getting inside the Black-Box of Schooling: What Do Teachers Know and Do? A Report Card from African Primary Schools." *Working Paper, The World Bank.*
- Bold, Tessa, Mwangi Kimenyi, Germano Mwabu, Alice Ng'ang'a, and Justin Sandefur. 2013. "Scaling up What Works: Experimental Evidence on External Validity in Kenyan Education." *Center for Global Development Working Paper* (321).
- Bouguen, Adrien, Deon Filmer, Karen Macours, and Sophie Naudeau. 2013. "Impact Evaluation of Three Types of Early Childhood Development Interventions in Cambodia." *World Bank Policy Research Working Paper* (6540).
- Bruns, B, and J Luque. 2014. *Great Teachers: How to Raise Student Learning in Latin America and the Caribbean.* Washington, DC: World Bank.

- Bruns, Barbara, Deon Filmer, and Harry Anthony Patrinos. 2011. *Making Schools Work: New Evidence on Accountability Reforms*. World Bank Publications.
- Bruns, Barbara, and Javier Luque. 2015. *Great Teachers : How to Raise Student Learning in Latin America and the Caribbean*. Washington DC: The World Bank.
- Cabrera, Gabriela. 2016. "Programas De Apoyo a Transiciones Académicas Del Sistema Escolarizado En La Unam." Congresos CLABES.
- Campos, Jose Edgardo, Benjamina Randrianarivelo, and Kay Winning. 2015. "Escaping the "Capability Trap": Turning "Small" Development into "Big" Development." *International Public Management Review* 16(1): 99-131.
- Chang, M-C, S Shaeffer, S Al-Samarrai, A Ragatz, J. De Ree, and R Stevenson. 2013. *Teacher Reform in Indonesia: The Role of Politics and Evidence in Policy Making*.
- Chisholm, Linda, and Ramon Leyendecker. 2008. "Curriculum Reform in Post-1990s Sub-Saharan Africa." *International Journal of Educational Development* 28(2): 195-205.
- Coe, Christopher L., and Gabrielle R. Lubach. 2007. *Mother-Infant Interactions and the Development of Immunity from Conception through Weaning*. Burlington, MA: Elsevier Academic Press.
- Crouch, Luis. 2006. "Education Sector: Standards, Accountability, and Support." *A New Social Contract for Peru: An Agenda for Improving Education, Health Care, and the Social Safety Net*: 71-106.
- Das, Jishnu, and Natalie Bau. 2014. *"The Misallocation of Pay and Productivity in the Public Sector: Evidence from the Labor Market for Teachers."* Working Paper.
- De Ree, Joppe, Karthik Muralidharan, Menno Pradhan, and Halsey Rogers. 2015. *"Double for Nothing? Experimental Evidence on the Impact of an Unconditional Teacher Salary Increase on Student Performance in Indonesia."* National Bureau of Economic Research.
- De Smedt, Bert. 2014. "Advances in the Use of Neuroscience Methods in Research on Learning and Instruction" *Frontline Learning research* 2(4): 7-14.
- Dua, Tarun, Mark Tomlinson, Elizabeth Tablante, Pia Britto, Aisha Yousfzai, Bernadette Daelmans, and Gary L. Darmstadt. 2016. "Global Research Priorities to Accelerate Early Child Development in the Sustainable Development Era." *The Lancet Global Health*.
- Duflo, Esther, Pascaline Dupas, and Michael Kremer. 2011. "Peer Effects, Teacher Incentives, and the Impact of Tracking: Evidence from a Randomized Evaluation in Kenya." *American Economic Review* 101(5): 1739-74.
- Elder, Sarah, and Gianni Rosas. 2015. "Global Employment Trends for Youth 2015: Scaling up Investments in Decent Jobs for Youth." *International Labor Organization*.
- Evans, David K., and Anna Popova. 2016. "What Really Works to Improve Learning in Developing Countries? An Analysis of Divergent Findings in Systematic Reviews." *World Bank Research Observer* forthcoming.
- Evans, David K., and Fei Yuan. 2017. *Economic Returns to Interventions That Increase Learning*. WDR 2018 Background Paper. Washington, DC. The World Bank.
- Farah, I., Mehmood, T., Amna., Jaffar, R., Ashams, F., Iqbal, P., Khanam, S., Shah, Z. and Gul-Mastoi, N. . 1996. *"Road to Success: Self-Sustaining Primary School Change in Rural Pakistan."* Karachi: AKU-IED: World Bank.
- Fausset, Richard. 2014. "Trial Opens in Atlanta School Cheating Scandal." *The New York Times*. 9/29/2014. https://www.nytimes.com/2014/09/30/us/racketeering-trial-opens-in-altanta-schools-cheating-scandal.html?_r=1.
- Fiszbein, Ariel, Norbert Rüdiger Schady, and Francisco HG Ferreira. 2009. *Conditional Cash Transfers: Reducing Present and Future Poverty*. World Bank Publications.
- Fryer , Roland G. Jr. 2017. *"Management and Student Achievement: Evidence from a Randomized Field Experiment."* Working Paper. Harvard University.
- Garner, Andrew S., Jack P. Shonkoff, Benjamin S. Siegel, Mary I. Dobbins, Marian F. Earls, Laura McGuinn, John Pascoe, and David L. Wood. 2012. "Early Childhood Adversity, Toxic Stress, and the Role of the Pediatrician: Translating Developmental Science into Lifelong Health." *Pediatrics* 129(1): e224-e31.
- Gertler, Paul, James J. Heckman, Rodrigo Pinto, Arianna Zanolini, Christel Vermeersch, Susan Walker, Susan M. Chang, and Sally M. Grantham-McGregor. 2014. "Labor Market Returns to an Early Childhood Stimulation Intervention in Jamaica." *Science* 344(6187): 998-1001.
- Glewwe, Paul W, Eric A Hanushek, Sarah D Humpage, and Renato Ravina. 2011. *"School Resources and Educational Outcomes in Developing Countries: A Review of the Literature from 1990 to 2010."* National Bureau of Economic Research.
- Green, Duncan. 2016. *How Change Happens*. Oxford: Oxford University Press.
- Grindle, Merilee Serrill. 2004. *Despite the Odds: The Contentious Politics of Education Reform*. Princeton University Press.
- Guilfoyle, Christy. 2006. "Nclb: Is There Life Beyond Testing?" *Educational Leadership* 64(3): 8.

- Hanushek, Eric A. 1986. "The Economics of Schooling: Production and Efficiency in Public Schools." *Journal of economic literature* 24(3): 1141-77.
- . 1992. "The Trade-Off between Child Quantity and Quality." *Journal of political economy* 100(1): 84-117.
- . 1995. "Interpreting Recent Research on Schooling in Developing Countries." *World Bank Research Observer* 10(2): 227-46.
- Hanushek, Eric A, Victor Lavy, and Kohtaro Hitomi. 2008. "Do Students Care About School Quality? Determinants of Dropout Behavior in Developing Countries." *Journal of Human Capital* 2(1): 69-105.
- Hanushek, Eric A, and Ludger Woessmann. 2008. "The Role of Cognitive Skills in Economic Development." *Journal of Economic Literature* 46(3): 607-68.
- . 2015. *The Knowledge Capital of Nations: Education and the Economics of Growth*. MIT Press.
- Hungi, Njora, Demus Makuwa, Kenneth Norman Ross, Mioko Saito, Stéphanie Dolata, Frank Van Cappelle, Laura Paviot, and Jacqueline Vellien. 2010. "Sacmeq Iii Project Results: Pupil Achievement Levels in Reading and Mathematics." SACMEQ.
- Insel, Thomas R, and Story C Landis. 2013. "Twenty-Five Years of Progress: The View from Nimh and Ninds." *Neuron* 80(3): 561-67.
- Jacob, Brian A. 2005. "Accountability, Incentives and Behavior: The Impact of High-Stakes Testing in the Chicago Public Schools." *Journal of public Economics* 89(5): 761-96.
- Kiessel, Jessica, and Annie Duflo. 2014. "Teacher Community Assistant Initiative Cost Effectiveness Report " *Innovation for Poverty Action (IPA) brief*.
- Kingdon, Geeta. 1996. "The Quality and Efficiency of Private and Public Education: A Case-Study of Urban India." *Oxford Bulletin of Economics and Statistics* 58(1): 57-82.
- Kremer, Michael R. 1995. "Research on Schooling: What We Know and What We Don't a Comment on Hanushek." *The World Bank Research Observer*: 247-54.
- Kuhl, Patricia K. 2010. "Brain Mechanisms in Early Language Acquisition." *Neuron* 67(5): 713-27.
- Lavinas, Lena, and Alinne Veiga. 2013a. "Brazil's One Laptop Per Child Program: Impact Evaluation and Implementation Assessment." *Cadernos de Pesquisa* 43(149).
- . 2013b. "Desafios Do Modelo Brasileiro De Inclusão Digital Pela Escola." *Cadernos de Pesquisa* 43(149): 542-69.
- Layton, Lyndsey. 2015. "Study: Billions of Dollars in Annual Teacher Training Is Largely a Waste " *The Washington Post* https://www.washingtonpost.com/local/education/study-billions-of-dollars-in-annual-teacher-training-is-largely-a-waste/2015/08/03/c4e1f322-39ff-11e5-9c2d-ed991d848c48_story.html.
- Lemos, Renata, and Daniela Scur. 2016. "Developing Management: An Expanded Evaluation Tool for Developing Countries." RISE Working Paper 16/007.
- Levy, B, Robert Cameron, U Hoadley, and Vinothan Naidoo. 2016. "The Politics of Governance and Basic Education: A Tale of Two South African Provinces."
- Liang, Xiaoyan, Huma Kidwai, and Minxuan Zhang. 2016. *How Shanghai Does It : Insights and Lessons from the Highest-Ranking Education System in the World*. Washington, DC: World Bank.
- Linden, Leigh L. 2008. *Complement or Substitute?: The Effect of Technology on Student Achievement in India*. InfoDev.
- Lupien, Sonia J, Suzanne King, Michael J Meaney, and Bruce S McEwen. 2000. "Child's Stress Hormone Levels Correlate with Mother's Socioeconomic Status and Depressive State." *Biological Psychiatry* 48(10): 976-80.
- Mansuri, Ghazala, and Vijayendra Rao. 2012. *Localizing Development: Does Participation Work? : World Bank Publications*.
- McCoy, Dana Charles, Evan D Peet, Majid Ezzati, Goodarz Danaei, Maureen M Black, Christopher R Sudfeld, Wafaie Fawzi, and Günther Fink. 2016. "Early Childhood Developmental Status in Low-and Middle-Income Countries: National, Regional, and Global Prevalence Estimates Using Predictive Modeling." *PLoS Med* 13(6): e1002034.
- Micin, Sonia, Natalia Farías, Beatriz Carreño, and Sergio Urzúa. 2015. "Beca Nivelación Académica: La Experiencia De Una Política Pública Aplicada En Una Universidad Chilena." *Calidad en la educación* (42): 189-208.
- Mingat, Alain, and Jee-Peng Tan. 1998. *The Mechanics of Progress in Education: Evidence from Cross-Country Data*. World Bank Publications.
- Mizala, Alejandra, and Ben Ross Schneider. 2014. "Negotiating Education Reform: Teacher Evaluations and Incentives in Chile (1990–2010)." *Governance* 27(1): 87-109.
- Morgan, Claire, Anthony Petrosino, and Trevor Fronius. 2012. "A Systematic Review of the Evidence of the Impact of Eliminating School User Fees in Low-Income Developing Countries " *WestEd*.

- Mulkeen, Aidan. 2010. *Teachers in Anglophone Africa: Issues in Teacher Supply, Training, and Management*. World Bank Publications.
- Muralidharan, Karthik, Abhijeet Singh, and Alejandro Ganimian. 2016. "Disrupting Education? Experimental Evidence on Technology-Aided Instruction in India." UC San Diego. [http://econweb.ucsd.edu/~kamur/papers/Working%20Papers/Disrupting%20Education%20\(Current%20WP\).pdf](http://econweb.ucsd.edu/~kamur/papers/Working%20Papers/Disrupting%20Education%20(Current%20WP).pdf).
- Nelson, Charles A. 2016. Brain Imaging as a Measure of Future Cognitive Outcomes.
- OECD. 2011. "Strong Performers and Successful Reformers in Education: Lessons from Pisa for the United States." OECD.
- . 2016. *Pisa 2015 Results (Volume 1): Excellence and Equity in Education*. Paris: PISA.
- Orazem, Peter F. 2000. "The Urban and Rural Fellowship School Experiments in Pakistan: Design, Evaluation, and Sustainability." *Economics of Education Review* 22(3): 265-74.
- Orazem, Peter, Paul Glewwe, and Harry Patrinos. 2007. "The Benefits and Costs of Alternative Strategies to Improve Educational Outcomes." *Iowa State University, Department of Economics Working Paper Series* (07028).
- Park, Rufina Kyung Eun. 2016. *Preparing Students for South Korea's Creative Economy: The Successes and Challenges of Educational Reform*. Asia Pacific Foundation of Canada.
- Pascale, Richard T, Jerry Sternin, and Monique Sternin. 2010. *The Power of Positive Deviance: How Unlikely Innovators Solve the World's Toughest Problems*. Harvard Business Press.
- PASEC (Programme d'Analyse des Systèmes Educatifs de la Confemen). 2015. *Pasec 2014. Education System Performance in Francophone Africa: Competencies and Learning Factors in Primary Education*. Dakar, Senegal: PASEC.
- Paxson, Christina, and Norbert Schady. 2007. "Cognitive Development among Young Children in Ecuador the Roles of Wealth, Health, and Parenting." *Journal of Human Resources* 42(1): 49-84.
- Pritchett, Lant. 2013. *The Rebirth of Education: Schooling Ain't Learning*. Washington, DC: Center for Global Development.
- Rajkumar, A.S, and V Swaroop. 2008. "Public Spending and Outcomes: Does Governance Matter?" *Journal of Development Economics* 86: 96-111.
- Rivkin, Steven G, Eric A Hanushek, and John F Kain. 2005. "Teachers, Schools, and Academic Achievement." *Econometrica* 73(2): 417-58.
- Robinson, Viviane MJ, Claire A Lloyd, and Kenneth J Rowe. 2008. "The Impact of Leadership on Student Outcomes: An Analysis of the Differential Effects of Leadership Types." *Educational administration quarterly*.
- Rockoff, Jonah E. 2004. "The Impact of Individual Teachers on Student Achievement: Evidence from Panel Data." *The American Economic Review* 94(2): 247-52.
- RTI International. 2009. *Early Grade Reading Sassessment Toolkit*. Research Triangle Park, NC: RTI.
- Sabarwal, Shwetlena, David K Evans, and Anastasia Marshak. 2014. "The Permanent Input Hypothesis: The Case of Textbooks and (No) Student Learning in Sierra Leone." *World Bank Policy Research Working Paper* (7021).
- Save the Children's Education Global Initiative. 2013. "Ending the Hidden Exclusion: Learning and Equity in Education Post-2015." *London: Save the Children International*.
- Schady, Norbert, Jere Behrman, Maria Caridad Araujo, Rodrigo Azuero, Raquel Bernal, David Bravo, Florencia Lopez-Boo, Karen Macours, Daniela Marshall, and Christina Paxson. 2015. "Wealth Gradients in Early Childhood Cognitive Development in Five Latin American Countries." *Journal of Human Resources* 50(2): 446-63.
- Schuh Moore, A, J DeStefano, and E Adelman. 2010. "Opportunity to Learn and Early Grade Reading Fluency to Measure School Effectiveness in Ethiopia, Guatemala, Honduras, and Nepal." *prepared for USAID/EQUIP2 Project. Washington: US Government Printing Office*.
- Snilstveit, Birte, Jennifer Stevenson, Radhika Menon, Daniel Phillips, Emma Gallagher, Maisie Geleen, Hannah Jobse, Tanja Schmidt, and Emmanuel Jimenez. 2016. *The Impact of Education Programmes on Learning and School Participation in Low- and Middle-Income Countries: A Systematic Review Summary Report*. Systematic Review Summaries. New Delhi: International Initiative for Impact Evaluation (3ie). http://www.3ieimpact.org/media/filer_public/2016/09/20/srs7-education-report.pdf.
- Solano-Flores, G, LA Contreras-Niño, and E Backhoff-Escudero. 2005. "The Mexican Translation of Timss-95: Test Translation Lessons from a Post-Mortem Study." Annual Meeting of the National Council on Measurement in Education. Montreal, Québec, Canada.
- Suryadarma, D. 2012. "How Corruption Diminishes the Effectiveness of Public Spending on Education in

- Indonesia." *Bulletin of Indonesian Economic Studies* 48(1): 85-100.
- Tan, Jee-Peng, and Alain Mingat. 1992. *Education in Asia: A Comparative Study of Cost and Financing*. World Bank Publications.
- Tandon, Prateek, and Tsuyoshi Fukao. 2015. *Educating the Next Generation: Improving Teacher Quality in Cambodia*. World Bank Publications.
- Todd, Alexa, and Mark Mason. 2005. "Enhancing Learning in South African Schools: Strategies Beyond Outcomes-Based Education." *International journal of educational development* 25(3): 221-35.
- Tooley, James, and Pauline Dixon. 2007. "Private Education for Low-Income Families: Results from a Global Research Project." In *Private Schooling in Less Economically Developed Countries: Asian and African Perspectives*, 15-39. Oxford, London: Cambridge University Press.
- UNESCO. 2016a. "Education for People and Planet: Creating Sustainable Futures for All." Paris: UNESCO Publishing.
- . 2016b. "Global Education Monitoring Report: Education for People and Planet." Paris: UNESCO. <http://unesdoc.unesco.org/images/0024/002457/245752e.pdf>.
- . 2016c. "Laying the Foundation to Measure Sustainable Development Goal 4." Montreal: UNESCO and UNESCO Institute for Statistics.
- UNESCO, and EFA. 2015. "A Growing Number of Children and Adolescents Are out of School as Aid Fails to Meet the Mark."
- UNESCO Institute for Statistics. 2006. *Teachers and Educational Quality: Monitoring Global Needs for 2015*. Montreal: UNESCO Institute for Statistics.
- . 2016. "Laying the Foundation to Measure Sustainable Development Goal 4." Sustainable Development Data Digest. Montreal: UNESCO Institute for Statistics.
- Uwezo East Africa. 2014. "Are Our Children Learning? Literacy and Numeracy across East Africa 2013." Uwezo East Africa at Twaweza: Uwezo East Africa
- Wales, J, A Ali, Susan Nicolai, F Morales, and D Contreras. 2014. "Improvements in the Quality of Basic Education: Chile's Experience." London: Overseas Development Institute.
- Walker, Susan P, Theodore D Wachs, Julie Meeks Gardner, Betsy Lozoff, Gail A Wasserman, Ernesto Pollitt, Julie A Carter, and International Child Development Steering Group. 2007. "Child Development: Risk Factors for Adverse Outcomes in Developing Countries." *Lancet* 369(9556): 145-57.
- Waters, Tim, Robert J Marzano, and Brian McNulty. 2003. "Balanced Leadership: What 30 Years of Research Tells Us About the Effect of Leadership on Student Achievement. A Working Paper."
- Wolf, Alison. 2004. "Education and Economic Performance: Simplistic Theories and Their Policy Consequences." *Oxford Review of Economic Policy* 20(2): 315-33.
- World Bank. 2003. *World Development Report 2004: Making Services Work for Poor People*. Washington, DC: Oxford University Press for the World Bank.
- . 2012. "World Development Report 2012: Gender Equality and Development." Washington, DC: World Bank.
- . 2013. "Service Delivery Indicators ".
- . 2016. "Driving Performance from the Center: Malaysia's Experience with Pemandu." Washington, DC: World Bank.

Endnotes

- ¹ Uwezo East Africa 2014. In all countries, the test was administered in English; in Kenya and Tanzania it was also administered in Kiswahili, and the highest score (English or Kiswahili) was used in the assessment of proficiency. English is the language of instruction in Kenya and Uganda.
- ² ASER 2017.
- ³ WDR 2018 Team calculations with data from PISA 2015.
- ⁴ WDR 2018 Team calculations with data from TERCE 2012.
- ⁵ UNESCO 2016b
- ⁶ Hanushek and Woessmann 2015.
- ⁷ In the SDGs, the international community recognized the centrality of education to development: education feeds into many of the other goals, such as eliminating poverty, promoting health, and closing gender gaps.
- ⁸ SDG4 recognizes these shortfalls and calls for monitoring skills acquired by students, rather than just their school participation.
- ⁹ The future of work, including how technology might change the demand for skills, will be explored in the next WDR.
- ¹⁰ World Bank 2012.
- ¹¹ Barro and Lee 2013.
- ¹² Pritchett 2013.
- ¹³ USAID, Early Grade Reading Barometer, www.earlygradereadingbarometer.org, accessed May 30, 2017.
- ¹⁴ Crouch 2006.
- ¹⁵ Castillo and others (2011).
- ¹⁶ ASER-Pakistan 2015a; ASER-Pakistan 2015b
- ¹⁷ SACMEQ results for Grade 6 students in 15 countries in 2007 (Hungu and others 2010).
- ¹⁸ PASEC results for Grade 6 students in 10 Francophone countries in 2015 (PASEC (Programme d'Analyse des Systèmes Educatifs de la Confemem) 2015).
- ¹⁹ ASER 2017.
- ²⁰ RTI International 2009.
- ²¹ UNESCO 2016a.
- ²² UNESCO and EFA 2015.
- ²³ Banerjee and others 2000, Hanushek and Woessmann 2008, Rivkin, Hanushek and Kain 2005.
- ²⁴ Alderman, Orazem and Paterno 2001; Andrabi, Das and Khwaja 2008; Farah 1996; Kingdon 1996; Orazem 2000; Tooley and Dixon 2007.
- ²⁵ Hanushek, Lavy and Hitomi 2008.
- ²⁶ STEP surveys.
- ²⁷ Lupien and others 2000; Walker and others 2007; McCoy and others 2016.
- ²⁸ Coe and Lubach 2007; Garner and others 2012; Nelson 2016.
- ²⁹ Black and others 2016. Stunting is defined by the WHO as height-for-age z-score less than 2 standard deviations below the median of a healthy reference population.
- ³⁰ Paxson and Schady 2007; Schady and others 2015.
- ³¹ Hanushek 1992; Rockoff 2004.
- ³² Das and Bau 2014.
- ³³ Bruns and Luque 2014.
- ³⁴ UNESCO Institute for Statistics 2006.
- ³⁵ Abadzi 2009; Schuh Moore, DeStefano and Adelman 2010.
- ³⁶ Bold and others 2016.
- ³⁷ Hanushek 1995; Tan and Mingat 1992; Mingat and Tan 1998; Wolf 2004.
- ³⁸ Hanushek 1986; Glewwe and others 2011; Kremer 1995.
- ³⁹ Sabarwal, Evans and Marshak 2014.
- ⁴⁰ Lavinias and Veiga 2013a.
- ⁴¹ Robinson, Lloyd and Rowe 2008; Waters, Marzano and McNulty 2003.
- ⁴² Bloom and others 2015. Management areas include operations, monitoring, target setting, and people management.
- ⁴³ World Bank 2003; Orazem, Glewwe and Patrinos 2007; Bruns, Filmer and Patrinos 2011.
- ⁴⁴ Data extracted from DHS StatCompiler.
- ⁴⁵ Park 2016.
- ⁴⁶ Todd and Mason 2005.
- ⁴⁷ Chisholm and Leyendecker 2008.
- ⁴⁸ World Bank 2003.
- ⁴⁹ Andrews, Pritchett and Woolcock 2017.
- ⁵⁰ Grindle 2004.
- ⁵¹ Evans and Yuan 2017.
- ⁵² Save the Children's Education Global Initiative 2013.
- ⁵³ Guilfoyle 2006.
- ⁵⁴ Jacob 2005.
- ⁵⁵ Fausset 2014.
- ⁵⁶ UNESCO Institute for Statistics 2016.
- ⁵⁷ OECD 2011.
- ⁵⁸ Solano-Flores, Contreras-Niño and Backhoff-Escudero 2005.
- ⁵⁹ Kuhl 2010; Insel and Landis 2013; De Smedt 2014.
- ⁶⁰ Dua and others 2016.
- ⁶¹ Evans and Popova 2016.
- ⁶² Calculations carried out for WDR 2018. See Evans and Yuan 2017.
- ⁶³ One way to understand behavior is to view it through the behavioral economics lens explored in the WDR 2015 (*Mind, Society, and Behavior*), which the WDR 2018 draws on.
- ⁶⁴ Gertler and others 2014.
- ⁶⁵ CCT evidence in Morgan, Petrosino and Fronius 2012; Fiszbein, Schady and Ferreira 2009; Baird and others 2014. Cambodia example in Barrera-Osorio and Filmer 2016.
- ⁶⁶ Elder and Rosas 2015.
- ⁶⁷ Cabrera 2016; Micin and others 2015.
- ⁶⁸ World Bank 2013; Tandon and Fukao 2015; Al-Samarrai 2016.
- ⁶⁹ Layton 2015.
- ⁷⁰ Bruns and Luque 2015; Mulkeen 2010.
- ⁷¹ Banerjee and others 2007; Kiessel and Duflo 2014.
- ⁷² Banerjee and others 2016; Duflo, Dupas and Kremer 2011.
- ⁷³ Muralidharan, Singh and Ganimian 2016.
- ⁷⁴ Bruns, Filmer and Patrinos 2011.
- ⁷⁵ Snilstveit and others 2016.
- ⁷⁶ Linden 2008.
- ⁷⁷ Adelman and others 2015; Lavinias and Veiga 2013b.

⁷⁸ The WDR 2016 (*Digital Dividends*) explores in depth how to take advantage of technologies to improve service delivery; the WDR 2018 draws on this material.

⁷⁹ Bloom and others 2015.

⁸⁰ Fryer 2017.

⁸¹ Bouguen and others 2013.

⁸² Bold and others 2013.

⁸³ Chang and others 2013; De Ree and others 2015.

⁸⁴ Liang, Kidwai and Zhang 2016.

⁸⁵ For example, in Mozambique, after the Service Delivery Indicators results revealed very low levels of teacher knowledge and very high levels of absenteeism, results that were picked up in the local media, the government

launched a program—ultimately supported through a loan from the World Bank—to address these issues.

⁸⁶ Neal (2013).

⁸⁷ World Bank 2016

⁸⁸ Bruns and Luque 2014.

⁸⁹ Mizala and Schneider 2014; Wales and others 2014.

⁹⁰ Birnbaum 2012; Bruns and Luque 2014.

⁹¹ Levy and others 2016.

⁹² Mansuri and Rao 2012.

⁹³ Green 2016; Pascale, Sternin and Sternin 2010.

⁹⁴ Campos, Randrianarivelo and Winning 2015.

⁹⁵ Andrews, Pritchett and Woolcock 2013.

⁹⁶ Suryadarma 2012; Rajkumar and Swaroop 2008.